Central Station Main Works

Ongoing Groundwater Monitoring (April to September 2020) Report

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Document prepared by:

Aurecon Australasia Pty Ltd & GHD Pty Ltd
ABN 70 856 896 413

Level 11
54 Park Street
Sydney NSW 2000
Australia

T +612 9239 7100
E info@agjvcsm.com

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Glossary of Terms and Abbreviations

Abbreviation	Description
AGJV	Aurecon & GHD Design Joint Venture
ADWG	Australian Drinking Water Guidelines
AHD	Australian Height Datum
BOD	Biological Oxygen Demand
BTEX	Benzene, Toluene, Ethylbenzene and Xylene
CBD	Central Business District
CGWMP	Construction Groundwater Monitoring Plan
CSM	Central Station Main Works
COPC	Contaminants of Potential Concern
DO	Dissolved Oxygen
EC	Electrical Conductivity
GILs	Groundwater Investigation Levels
LOR	Laing O'Rourke
NATA	National Association of Testing Authorities
NEPC	National Environment Protection Council
NHMRC	National Health and Medical Research Council
NRAR	Natural Resources Access Regulator
OCP	Organochlorine Pesticides
OPP	Organophosphorus Pesticides
PCB	Polychlorinated Biphenyl
PAH	Polycyclic Aromatic Hydrocarbons
QA/QC	Quality Assurance/Quality Control
RSA	Rail Services Australia
RPD	Relative percentage difference
SWL	Standing Water Level
TRH	Total Recoverable Hydrocarbons

1 Introduction

AGJV Pty Ltd (AGJV) was commissioned by Laing O'Rourke (LOR) to undertake a groundwater monitoring program for selected groundwater wells at Central Station, as part of the Sydney Metro Central Station Main (CSM) works project.

LOR has identified three separate project work areas for the CSM project, these include:

- The Metro Station Box works
- The Central Walk and Eastern Entrance
- The Sydney Yard project access area

The approximate boundaries of the CSM project areas are presented in **Figure 1, Appendix A.**

A construction groundwater management plan (CGWMP - (LOR, August 2020)) has been prepared for the CSM project and approved by the Natural Resources Access Regulator (NRAR). The CGWMP includes a groundwater baseline monitoring program to establish the pre-construction groundwater conditions. The groundwater monitoring requirements are detailed in Section 10 of the CGWMP. Section 10 of the CGWMP also requires that the groundwater monitoring program be reviewed and amended on an annual basis to ensure it remains consistent with project priorities.

The groundwater baseline monitoring program commenced in September 2018 and monitoring has continued on a monthly basis until present. Reports were prepared for each six-month monitoring period, the first monitoring period (September 2018 to February 2019, detailed in **Section 2.1**), the second monitoring period (March to September 2019) and the third monitoring period (October 2019 to March 2020). Section 7.4 of the CGWMP required that the first six months of monitoring characterise the baseline groundwater conditions, on which the construction works will be compared. For wells that were installed or replaced following the initial six months of monitoring, the initial baseline monitoring period is considered to commence following their installation, as discussed in Section 2 and presented in **Table B1, Appendix B**.

Throughout the course of the monitoring program a number of monitoring bores have been destroyed, while others have been installed during and after the baseline monitoring period.

This report has been prepared to document the fourth groundwater monitoring period, undertaken between April and September 2020 as part of the ongoing groundwater monitoring program. It is noted that this report will take into consideration the previous monitoring periods in order to compare the current monitoring period with both the previous monitoring periods and the baseline monitoring period, as well as inform the annual review of the groundwater monitoring program and provide recommendations on the monitoring requirements in accordance with Section 10 of the CGWMP.

1.1 Objectives

The objectives of this groundwater monitoring program are to:

- Characterise the post-baseline groundwater conditions including groundwater levels and groundwater quality within and surrounding the CSM project area during construction.
- Inform design decisions for the CSM infrastructure.
- Comply with the groundwater monitoring program outlined in the CGWMP, which has been approved by the Natural Resources Access Regulator (NRAR).

1.2 Scope of work

The scope of work completed by AGJV is summarised below:

- Gauging of up to 16 monitoring wells on a monthly basis for six months. Constraints encountered, with regards to well access, during the monitoring program are discussed in **Section 2**.
- Collection and analysis of groundwater samples from the monitoring wells on a monthly basis for six months.
- Submission of groundwater samples to NATA accredited laboratories for chemical analysis for a range of contaminants of potential concern (COPC) including: pH, total suspended solids (TSS), total dissolved solids (TDS), heavy metals; benzene, toluene, ethylbenzene and xylene (BTEX); total recoverable hydrocarbons (TRH); polycyclic aromatic hydrocarbons (PAH); phenols;; cyanide; ammonia; ferrous iron, manganese and major anions/cations (chloride, sulfate, ammonia, nitrate, sodium, calcium, potassium and magnesium).
- Collection of groundwater depth data from data loggers located in six monitoring wells (CSM_BH02, CSM_BH04, CSM_BH06, SRT_BH047 and SRT_CBH017).
- Preparation of this report.

During this monitoring period, one additional monitoring well (CSM_BH11S) has been included in the monitoring program, and one monitoring well has been destroyed (SRT_BH060). Site constraints were encountered in relation to availability, access and condition of monitoring wells due to ongoing construction activities. AGJV has worked within these constraints to collect as much data as possible during the monitoring period. The status of monitoring wells at the time of each groundwater monitoring event is summarised in **Table B1**, **Appendix B** and discussed further in Section 2.

1.3 Limitations

AGJV's limitations to the assessment are provided in Section 9.

The table presented in **Table B1, Appendix B,** indicates that although the number of functioning groundwater monitoring wells used throughout this monitoring period has remained relatively stable, one well was destroyed between April and May 2020, and one additional shallow monitoring well was included from September 2020. This could limit characterisation of construction impacts against baseline conditions for these wells, however this is not considered to be an issue as any ongoing emergence of impacts would still be characterised within the boundaries of the adopted sampling program. Further to this, the number of wells sampled differs to that presented in Table-7.1 of the CGWMP (LOR, August 2020).

2 Status of groundwater monitoring program

2.1 Overview of the baseline groundwater program

The groundwater baseline monitoring program for CSM commenced in September 2018, as per the CGWMP. The first six monthly baseline monitoring period was completed in February 2019, followed by a second and third six monthly monitoring period completed in September 2019 and March 2020, respectively. A groundwater monitoring report was prepared after the completion of the baseline monitoring period (AGJV, June 2019), the second monitoring period (AGJV, January 2020) and the third monitoring period (AGJV, June 2020)

A number of constraints were encountered throughout the current and previous monitoring periods in relation to availability, access and condition of monitoring wells. These are discussed in this report and the AGJV reports mentioned above, and are displayed in **Table B1, Appendix B.**

A former gasworks brick tank was previously uncovered during construction of the Metro Box in April 2019. Following the discovery, ADE was engaged by LOR to drill and install twelve additional wells (six shallow and six deep). Five deep wells and two shallow wells were installed throughout the study area by ADE during February and March 2019, with an additional one deep and four shallow wells installed between April and August 2019 in the area of the former gasworks, uncovered by LOR during Metro works in April 2019.

With regard to the requirements of Section 7.4 of the CGWMP, the six months of baseline monitoring begins following the installation of each monitoring well, resulting in different baseline monitoring periods for wells that were installed following the initial baseline period. Shallow monitoring well CSM_BH11S, which is located on Platform 22/23, was installed by ADE between the August and September 2020 monitoring rounds, and as such is still monitoring the baseline groundwater conditions, even though construction has commenced (as per the requirements of Section 7.4 of CGWMP). This is considered to be acceptable for the following reasons:

- Due to preferential groundwater migration into the metro box excavation during construction, the concentration of contaminants present in the shallow wells are considered to be representative of background groundwater conditions.

Monitoring well locations are illustrated on **Figure 1, Appendix A**. The status of monitoring wells are included in **Table B1, Appendix B**.

The fourth (current) six monthly monitoring period (April to September 2020) was completed in September 2020.

2.2 Groundwater monitoring between September 2018 and March 2020

The groundwater data collected between the September 2018 and March 2020 is presented in the following reports:

- AGJV. (June 2019). *Sydney Metro - Central Station Main Works - Groundwater Baseline Monitoring (September 2018 to February 2019) - SMCSWCSM-DJV-EW-00-COR-GE-000001.* Sydney: Aurecon GHD Joint Venture.
- AGJV. (January 2020). *Sydney Metro - Central Station Main Works - Groundwater Baseline Monitoring (April 2019 to September 2019) - SMCSWCSM-DJV-EW-00-PLN-GE-000003*. Sydney: Aurecon GHD Joint Venture.

- AGJV. (June 2020). *Sydney Metro - Central Station Main Works – Ongoing Groundwater Monitoring (October 2019 to March 2020) - SMCSWCSM-DJV-EW-00-PLN-GE-000233*. Sydney: Aurecon GHD Joint Venture.

The status of monitoring wells during the first three six-monthly monitoring programs (September 2018 to February 2019, April 2019 to September 2019 and October 2019 to March 2020) are included in **Table B1, Appendix B**.

The chemical data for these two monitoring periods are included in **Table B2, Appendix B**, but has been interpreted within the above reports.

3 Basis for assessment

3.1 Relevant guidelines

The framework for the contamination assessment made herein, was developed in accordance with guidelines "made or approved", by the NSW EPA under Section 105 of the *Contaminated Land Management Act, 1997*. These guidelines include, but are not limited to the following:

- Consultants Reporting on Contaminated Land: Contaminated Land Guidelines, NSW EPA (NSW EPA, 2020).
- National Environment Protection (Assessment of Site Contamination) Amendment Measure (No.1) - NEPM, National Environment Protection Council - NEPC (NEPC, 2013).
- NSW EPA Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997 (NSW EPA, 2015).
- Australian and Zealand Guidelines for Fresh and Marine Water Quality (ANZECC & ARMCANZ, 2000a).
- Guidelines for Managing Risks in Recreational Water (NHMRC, 2008).

3.2 Onsite human health screening levels

The NEPM HSLs for petroleum hydrocarbons for commercial / industrial land use have been adopted for the assessment of groundwater to characterise the risk posed to CSM construction workers and future metro infrastructure users and operation / maintenance workers by potential hydrocarbon vapour intrusion in sand. AGJV noted that the NEMP HSL is more stringent than other published screen values for petroleum hydrocarbons (i.e. CRC CARE guidelines for intrusive maintenance workers via vapour intrusion and direct contact pathways).

Recreational criteria in the National Health and Medical Research Council (NHMRC, 2008) have been used as a conservative screening tool for direct contact by intrusive maintenance workers on site coming into contact with groundwater. These guidelines are associated with incidental ingestion of water and area generally based on incidental consumption of 200 ml of impacted water per day as opposed to two litres per day which the GILs for drinking water are based on. On this basis they are expected to be more representative of the type of exposure that will occur to construction and maintenance workers during construction and operation of the project and have been adopted as screening criteria for this exposure pathway. Commercial users of the metro/commuters will not come into contact with the groundwater.

3.3 Offsite human health

No potable water abstractions have been identified in hydraulic connection with groundwater beneath the CSM and the area is supplied by reticulated town water supplies. Therefore, the Australian Drinking Water Guidelines (ADWG) have not been adopted for this assessment.

The nearest receptor (Cockle Bay/Blackwattle bay) is approximately 1,000 m away and groundwater (if contaminated) would be considered likely to attenuate across this distance, however groundwater will be treated before being discharged into this receptor during dewatering activities. These water bodies are expected to be associated with recreational boating and potentially fishing only. Diving or swimming is not expected to occur. As such, and as per the NEPM (NEPC, 2013), the screening criteria for recreational drinking water quality in National Health and Medical Research Council (NHMRC, 2008) have been multiplied by a factor of 10 and adopted to provide a conservative recreational screening criteria for this assessment.

3.4 Ecological criteria

Based on the site hydrogeology, it has been assumed for this assessment that treated groundwater in the area will be discharged to the aquatic systems of Cockle Bay and/or Blackwattle Bay approximately 1 km away. As such, the criteria nominated for this assessment are the NEPM Groundwater Investigation Levels (GIL) for protection of marine water ecosystems, which encompasses the screening criteria outlined in guideline for fresh and marine water quality (ANZECC & ARMCANZ, 2000a). These criteria are currently the same as that provided in the updated Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG, 2018).

For assessment of pH values in groundwater, the trigger value for pH for estuaries in NSW in ANZECC & ARMCANZ (2000a) volume 2 (Table 8.2.8) has been adopted. The values for estuaries were adopted as this was considered to be most representative of the receiving water environment (being Cockle Bay and/or Blackwattle Bay).

3.5 Trade waste criteria

AGJV understands that a trade waste agreement with Sydney Water was not approved due to capacity limitations in the Sydney Water sewer system. Therefore, analytical results were not compared to the Sydney Water Trade Waste Acceptance Standards.

3.6 Aggressivity assessment criteria

The exposure classification criteria for concrete piles and steel piles presented in Australian Standard AS 2159-2009 *Piling – Design and installation* (Standards Australia, 2009) have been selected for assessing aggressivity of the groundwater.

3.7 Ochre potential assessment criteria

The criteria adopted for the assessment of ochre formation were based on Stuyt, Dierickx & Martinez Beltran (2005) and focused on ferrous iron concentrations in groundwater. These criteria include:

- Ferrous iron concentrations less than 1 mg/L indicate that ochre formation potential is negligible
- Ferrous iron concentrations between 1 and 5 mg/L indicate that ochre formation potential is small
- Ferrous iron concentrations between 5 and 10 mg/L indicate that ochre formation potential is moderate
- Ferrous iron concentrations between 10 and 25 mg/L indicate that ochre formation potential is high
- Ferrous iron concentrations more than 25 mg/L indicate that ochre formation potential is very high

3.8 Groundwater drawdown

The groundwater-related management and mitigation measures in Chatswood to Sydenham Environmental Impact Statement (EIS) and Revised Environmental Mitigation Measures (REMM) include:

REMM GWG1	A detailed geotechnical model for the project would be developed and progressively updated during design and construction. The detailed geotechnical model would include: ▪ Assessment of the potential for damage to structures, services, basements and other sub-surface elements through settlement or strain ▪ Predicted changes to groundwater levels, including at nearby water supply works. Where building damage risk is rated as moderate or higher (as per the CIRIA 1996 risk-based criteria), a structural assessment of the affected buildings / structures would be carried out and specific measures implemented to address the risk of damage. With each progressive update of the geotechnical model the potential for exceedance of the following target changes to groundwater levels would be reviewed: ▪ Less than 2.0 metres – general target ▪ Less than 4.0 metres – where deep building foundations present ▪ Less than 1.0 metre – residual soils ▪ Less than 0.5 metre – residual soils (Blues Point) (fill / Aeolian sand). Where a significant exceedance of target changes to groundwater levels are predicted at surrounding land uses and nearby water supply works, an appropriate groundwater monitoring program would be developed and implemented. The program would aim to confirm no adverse impacts on groundwater levels or to appropriately manage any impacts. Monitoring at any specific location would be subject to the status of the water supply work and agreement with the landowner. The geotechnical model and groundwater monitoring program would be developed in consultation with the Department of Primary Industries (Water).

This report will include an assessment of groundwater drawdown related to CSM works.

4 Field investigation

4.1 Groundwater sampling dates

Groundwater sampling was conducted of accessible groundwater monitoring wells on the following dates:

- Event 19 – 14 to 16 April 2020
- Event 20 – 18 to 20 May 2020
- Event 21 – 17 to 19 June 2020
- Event 22 – 15 to 17 July 2020
- Event 23 – 17 to 19 August 2020
- Event 24 – 14 to 16 September 2020

4.2 Groundwater monitoring well locations

The groundwater monitoring wells sampled during the current six monthly program are presented in **Table B1, Appendix B**. The location of these monitoring wells is presented in **Figure 1, Appendix A**.

As discussed in Section 2.1, LOR excavated a former gasholder during heritage excavation works and during piling works at the south western corner of the Metro Box footprint in April 2019. Five additional groundwater monitoring wells were installed by ADE in April and August 2019 in the vicinity of the former gasholder to assess the potential groundwater impacts. GASW_BH7 and GASW_BH10 are within the gasworks former gasholder, GASW_BH23 and GASW_BH25A are within the former gasholder footprint and GASW_BH11 is outside the former gasholder footprint. These monitoring wells were incorporated into the ongoing groundwater monitoring program from June 2019 (GASW_BH7, GASW_BH10 and GASW_BH11) and September 2019 onwards (GASW_BH23 and GASW_BH25A). It should be noted that the latter two shallow monitoring wells (GASW_BH23 and GASW_BH25A) are unlikely to be representative of the broader shallow groundwater aquifer, given the gasholder structure (brick wall and concrete / puddle clay base) may act as an aquitard.

One well was destroyed during the current monitoring period:

- SRT_BH060, a monitoring well targeting shallow groundwater aquifer – was destroyed between the April and May 2020 monitoring events.

However, a groundwater monitoring well targeting shallow groundwater (CSM_BH11S on platform 23/24) was installed between the August and September 2020 monitoring rounds and incorporated into the ongoing groundwater monitoring program from September 2020 onwards. As such, the number of wells monitored is considered to have remained relatively consistent throughout this monitoring period. The borehole log of CSM_BH11S is included in Appendix C of this report.

4.3 Groundwater level gauging and monitoring methodology

The method used to gauge the monitoring wells is described below:

- Prior to gauging the water level (SWL), each monitoring well was left to stand for a few minutes to stabilise with atmospheric conditions.

- The depth of the SWL and NAPL, if present, was measured at each monitoring well using an electronic interface meter, along with the total well depth with all measurements recorded from the top of the well casing.

During this monitoring period, groundwater level data loggers were placed in the following monitoring wells:

- CSM_BH10S, a shallow monitoring well on Eddy Avenue
- SRT_BH047, a shallow monitoring well on platforms 6/7
- CSM_BH02, a deep monitoring well on platforms 10/11
- CSM_BH04, a deep monitoring well on Eddy Avenue
- CSM_BH06, a deep monitoring well on Ambulance Avenue

Therefore there were five data loggers that recorded groundwater levels at the same location across the entire monitoring period. The groundwater levels at these monitoring wells are graphed in **Appendix D**.

AGJV noted that tunnel boring machines (TBM) passed the CSM project area during July and August 2019. The TBM movement had significant impact on the groundwater levels (discussed in **Section 5.3.5**).

4.4 Groundwater sampling methodology

Representative groundwater samples were collected from the monitoring wells using the following sampling techniques:

- Each well was purged using low-flow sampling techniques (peristaltic pump or low-flow bladder pump, whichever was more appropriate) with dedicated low-density polyethylene (LDPE) tubing that is Teflon free. The pump inlet tube was placed consistently in the well screen at each location and was recorded.
- Field parameters (pH, electrical conductivity (EC), oxygen redox potential, dissolved oxygen (DO) and temperature) were measured and recorded during purging to ensure that extracted groundwater was representative of the surrounding groundwater conditions. When field parameters reached equilibrium, i.e. consecutive measurements are within 10% of each other for EC, redox and pH, the groundwater was deemed to be representative and groundwater samples were collected.
- Visual observations were recorded, in particular, the absence or presence of a hydrocarbon sheen or odour were recorded during purging.
- Retrieved groundwater samples were immediately placed into laboratory prepared bottles suitable for the requested analyses.
- Sample bottles were filled directly from the pump with a minimal amount of air contact and vials for volatile organic analysis were filled to minimise headspace. Samples that were to be analysed for dissolved metals were field filtered with a dedicated filter prior to placing the sample into the sample bottle.
- The containers were labelled with the project number, sample identification, date collected and sampler's initials.
- Following the collection of each sample, the bottles were placed immediately into ice-filled coolers for preservation prior to and during transportation to the project laboratories.
- Samples were accompanied with chain of custody documentation to the project laboratory and were submitted within holding times appropriate for the analysis required.
- Dedicated sampling equipment (i.e. tubing, bailers, filters etc.) was disposed of after each well was sampled with any reusable sampling equipment decontaminated using a mixture of phosphorus

free detergent solution and potable water and then rinsed with potable tap water between each sampling location.

Calibration certificates for equipment including the interface probe and water quality meter are supplied in **Appendix E**. Groundwater purging sheets documenting the sampling procedure at each groundwater well are included in **Appendix F.**

4.5 Groundwater analysis

The analytical schedule for groundwater is presented in **Table B2, Appendix B**. In summary the groundwater samples were analysed as follows:

- Groundwater samples were submitted for laboratory analysis of COPC including, eight (8) metals, ferrous iron, manganese, TRH, TRH with silica gel clean up, BTEX, PAH, phenols, cyanide, ammonia, anions and cations.
- Trace analysis of cyanide and benzo (a) pyrene was undertaken from the December 2019 monitoring event onwards.
- Field intra and inter-laboratory duplicate samples were collected and submitted for laboratory analysis including eight (8) heavy metals, TRH, BTEX and PAH for each of the monitoring events.
- Trip blanks and trip spike samples were submitted with each batch of samples, and were analysed for BTEX and volatile TRH.
- Rinsate samples were collected one per sampling round with reusable equipment and were analysed for eight (8) heavy metals.
- Analysis of groundwater samples were undertaken by NATA accredited laboratories for the required analysis.

5 Monitoring results

5.1 Introduction

The primary aim of this section is to present the findings of the current six monthly monitoring period (April to September 2020).

In order to show long term trends in key water quality analytes and groundwater elevations, data from all monitoring periods have been combined. The combined data informs the discussion in Sections 5.3, 5.4 and 5.6

5.2 Field observations

During sampling, no visual signs of contamination (such as sheens) were observed, however, organic and hydrocarbon odours were noted in the following wells:

- GASW_BH10 (sulfuric odour noted in August 2020)
- GASW_BH11 (hydrocarbon odour noted in April and unknown odour in June 2020)
- GASW_BH23 (strong hydrocarbon odour noted in April, May, July and August 2020)
- GASW_BH25a (hydrocarbon odour noted in April, May, June (with sheen) and August 2020, with a strong hydrocarbon odour noted in July 2020)

Field observations are summarised in **Table B4, Appendix B**. The groundwater purging sheets are included in **Appendix F**.

5.3 Groundwater levels and trends

5.3.1 Gauging results – shallow aquifer monitoring wells

The groundwater gauging data is presented in **Table B3, Appendix B.**

The depth to groundwater in the shallow groundwater aquifer ranged between 1.88 metres below the top of well casing (mbtoc) in GASW_BH25a (July 2020) and 7.225 mbtoc in GASW_BH11 (September 2020).

The groundwater elevations of the shallow aquifer ranged between 11.313 m AHD at CSM_BH10S (May 2020) and 19.7 m AHD at SRT_BH059 (April 2020). The fluctuation in groundwater elevations in each shallow well over the current monitoring period ranged between 0.135 m at GASW_BH11 and 2.225 m at SRT_BH059. It is noted that CSM_BH10S is located down slope on Eddy Avenue and is expected to intersect a shallow groundwater system that has a limited hydraulic connection with the groundwater system intersecting the metro box.

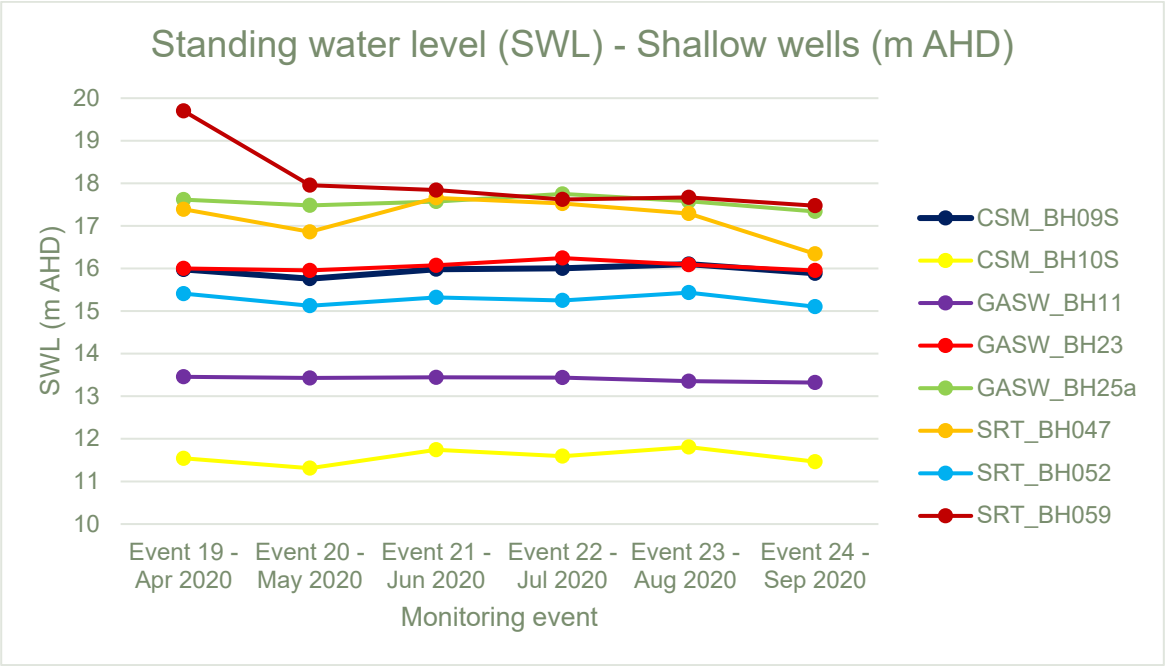


Figure 1 - Standing water level – Shallow aquifer monitoring wells

As presented in Figure 1, there does not appear to be any significant reduction in groundwater elevations despite excavation of the metro box to the base of the shallow aquifer during the monitoring period.

The inferred shallow aquifer groundwater flow direction is presented in **Figure 2, Appendix A** and appears to be the north east to west from a groundwater mound location immediately to the south of Central Walk.

5.3.2 Gauging results – deep aquifer monitoring wells

The groundwater gauging data is presented in **Table B3, Appendix B.**

The depth to groundwater in the deeper groundwater system ranged between 13.125 mbtoc in CSM_BH08 (July 2020) and 21.42 mbtoc at CSM_BH04 (July 2020).

As presented in Figure 2, the groundwater elevations of the deep aquifer ranged between -5.606 m AHD in CSM_BH04 (July 2020) and 1.569 m AHD in CSM_BH08 (July 2020).

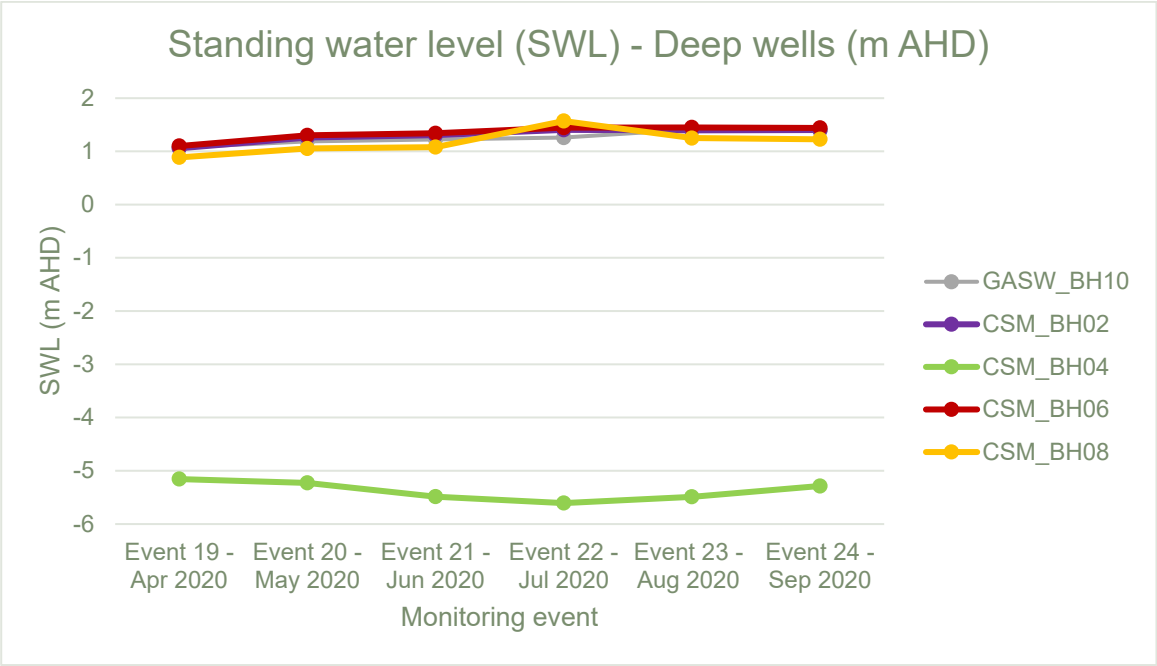


Figure 2 - Standing water level (m AHD) - Deep aquifer monitoring wells

The fluctuation in groundwater elevations in each deep well over the current monitoring period ranged between 0.34 m at GASW_BH10 and 0.68 m at CSM_BH08.

The inferred deep aquifer groundwater flow direction is presented in **Figure 3, Appendix A** and is broadly to the north east.

5.3.3 Data loggers

The groundwater levels recorded by groundwater data loggers are presented with the daily rainfall data from Bureau of Meteorology Sydney Botanic Gardens weather station (066006) in **Appendix D**. The rapid decline and recovery in groundwater elevations at the time of manual gauging are associated with groundwater sampling works and do not reflect the background groundwater conditions.

5.3.3.1 SRT_BH047

SRT_BH47 is a shallow monitoring well with the well screened across sandstone and laminate / residual soil.

The groundwater levels at SRT_BH047 generally ranged between 16.1 and 18.0 m AHD during the current monitoring period, and between 15.5 m AHD and 18.2 m AHD during the monitoring period between September 2018 and September 2020. The groundwater levels responded to rainfall events. There did not appear to be any fall in groundwater elevations associated with ongoing excavation of the metro box down to the top of bedrock.

5.3.3.2 SRT_CBH017

SRT_CBH017 is a shallow monitoring well with the well screened within shale.

SRT_CBH017 was destroyed between January and February 2020, and the data logger was relocated to CSM_BH10S. No groundwater gauging data was recorded during the current monitoring period.

5.3.3.3 CSM_BH10S

CSM_BH10S is a shallow well with the well screened within residual soil (clayey sand and sandy clay).

The data logger was retrieved from SRT-CBH017 prior to being destroyed, and relocated to CSM_BH10S, where it has been recording data since January 2020.

The groundwater levels at CSM_BH10S ranged between 11.5 and 11.7 m AHD during the current monitoring period, and between 10.3 and 11.9 m AHD during the monitoring period between January 2020 and September 2020. The groundwater levels at CSM_BH10S responded to rainfall events.

There did not appear to be a clear fall in groundwater elevations associated with ongoing excavation of the metro box down to the top of bedrock.

5.3.3.4 CSM_BH06

CSM_BH06 is a deep monitoring well screened within sandstone.

The groundwater levels at CSM_BH06 ranged between 1.3 and 1.5 m AHD during the current monitoring period, and between -3.4 and 1.7 m AHD during the monitoring period between April 2019 and September 2020.

During the current monitoring period, an abrupt drop in groundwater level was observed during April 2020, with water levels temporarily falling from 1.4 m AHD to -0.3 m AHD, possibly due to construction related de-watering activities. The groundwater level recovered to between 1.3 and 1.4 m AHD within two weeks of the drop.

Groundwater levels at CSM_BH06 did not respond to rainfall events indicating a reduced connection with rain fall directly on the site.

5.3.3.5 CSM_BH04

CSM_BH04 is a deep monitoring well screened within sandstone.

The groundwater levels at CSM_BH04 generally ranged between -5.9 and -4.7 m AHD during the current monitoring period, and between-9.5 and -2.4 m AHD during the monitoring period of April 2019 and September 2020.

Groundwater levels at CSM-BH04 did not respond to rainfall events indicating a reduced connection with rainfall on site.

5.3.3.6 CSM_BH02

CSM_BH02 is a deep monitoring well screened within sandstone.

Groundwater levels has been between -0.13 and 1.4 m AHD by data logger during the current monitoring period and between -0.1 and 1.4 m AHD during the monitoring period of September 2019 and September 2020.

An abrupt drop in groundwater level was observed during April 2020, with water levels temporarily falling from 1.3 m AHD to -0.13 m AHD, possibly due to construction related de-watering activities. The groundwater level recovered to between 1.3 and 1.4 m AHD within two weeks of the drop. The groundwater levels at CSM_BH02 consistently remained around 1.4 m AHD during the rest of monitoring period to September 2020 (excluding sampling response).

The groundwater levels did not respond to rainfall events indicating a reduced connection with rainfall on site.

5.3.4 Assessment of groundwater drawdown

The following groundwater monitoring well locations have been selected for assessment given that these monitoring wells have been gauged or installed with a data logger across a relative long period (i.e. a minimum six months) and on the boundary of the Central Station footprint, which are considered to represent the groundwater levels of the surrounding areas.

These groundwater monitoring locations are shown in Figure 1, Appendix A.

Graphs showing the groundwater levels retrieved from data loggers and obtained during sampling events by gauging are included in Attachment D.

Table 5-1 – Assessment of groundwater drawdown at selected monitoring wells

Well ID	Location	Well depth and targeting aquifer	Monitoring period	Data source	Monitoring findings
CSM_BH02	on southern end of platforms 10 and 11, and immediately west of Metro Box footprint	35 m targeting aquifer with sandstone	April 2019 and September 2020	Gauging / Data logger	Groundwater levels ranged between -0.13 and 1.4 m AHD by data logger (excluding sampling response) and between 1.06 and 1.40 m AHD by gauging during the current monitoring period. The groundwater levels at CSM_BH02 during the current monitoring period fluctuated less than 1.50 m. Groundwater levels were relatively stable at CSM-BH02 across the overall monitoring period to date.
CSM-BH04	On Eddy Avenue and north of Metro Box footprint and Central Station footprint	35 m targeting aquifer with sandstone	April 2019 to September 2020	Gauging / Data logger	Groundwater levels ranged between -5.9 and –-4.7 m AHD by data loggers (excluding sampling response) and between -5.61 and -5.16 m AHD by gauging during the current monitoring period. Groundwater levels were relatively stable during the current monitoring period with fluctuations less than 1.50 m. Groundwater levels were relatively stable at CSM-BH04 until the TMD moved through CSM project area in July 2019 which resulted drawdown of groundwater level of about 7 m. Then the groundwater levels steadily recovered however still about 2-3 m lower than the initial groundwater levels.

Well ID	Location	Well depth and targeting aquifer	Monitoring period	Data source	Monitoring findings
CSM-BH06	On Institute Drive East of Metro Box footprint and south of Central Walk footprint	35 m targeting aquifer with sandstone	April 2019 to September 2020	Gauging / Data logger	Groundwater levels ranged between 1.3 and 1.5 m AHD by data logger (excluding sampling response) and between 1.1 and 1.45 m AHD by gauging during the current monitoring period (April to September 2020). Groundwater levels at CSM_BH06 were relative stable until the TMD moved through CSM project area in July 2019 which resulted drawdown of groundwater level of about 3 m. Then the groundwater levels steadily recovered and about 0.2 m lower than the initial groundwater levels.
CSM_BH08	On Ambulance Drive west of Metro Box footprint / Central Station footprint	35 m / aquifer within sandstone	April 2019 to September 2020	Gauging	Groundwater levels ranged between -0.89 and 1.57 m AHD during the current monitoring period. Groundwater levels were relative stable until the tunnel boring machine passed Central Station in July 2019 which resulted drawdown of groundwater level of about 3 m. Then the groundwater levels recovered and stabilised however about 2 m lower than the initial groundwater levels.
GASW_BH10	In Sydney Yard within the uncovered gasworks footprint and immediately west of Metro Box footprint	25 m / aquifer with sandstone	June 2019 to Septemer 2020	Gauging	Groundwater levels ranged between -1.07 and 1.41 m AHD during the current monitoring period. Groundwater levels ranged between 8.12 and -0.13 m AHD during the overall monitoring period. However, AGJV consider the first gauged water level of 8.118 m AHD did not represent the equilibrium groundwater conditions. From the second monitoring event in July 2019, the groundwater levels fluctuated within a range less than 1.5 m.
SRT_BH047	On platforms 6 / 7 west of Metro Box footprint	7 m / aquifer between residual soil and	September 2018 to September 2020	Gauging / Data logger	Groundwater levels ranged between 15.8 to 18.2 m AHD by data logger excluding sampling response) and between 15.66 and 17.73 m AHD by

Well ID	Location	Well depth and targeting aquifer	Monitoring period	Data source	Monitoring findings
		bedrock sandstone			gauging during the current monitoring period. Groundwater levels responded to rainfall. Groundwater level fluctuation at this location during the overall monitoring period was slightly more than 2 m however the groundwater drawdown was observed less than 2 m.
SRT_BH052	On platforms 6 /7 west of Metro Box footprint	8 m / / aquifer with sandstone	October 2018 and March 2020	Gauging	Groundwater levels ranged between 15.03 and 16.4 m AHD with fluctuation less than 1.5 m.
SRT_BH059	On platforms 18 / 19 west of Metro Box footprint and south of Central Walk footprint	6 m / aquifer with shale / sandstone	October 2018 and March 2020	Gauging	Groundwater levels ranged between 17.95 and 19.86 m AHD with fluctuation less than 2 m.
SRT_CBH015	On platforms 16 / 17 within Central Walk footprint	6 m / aquifer with residual soil / shale	September 2018 to December 2019	Gauging	Groundwater levels ranged between 18.25 and 19.18 m AHD with fluctuation less than 1 m.
SRT_CBH017	On platforms 20 / 21 within Central Walk Footprint	5 m / aquifer between fill and shale	September 2018 to January 2020	Gauging / Data Logger	Groundwater levels ranged between 18.6 and 20.3 m AHD by data logger (excluding sampling response) and between 17.99 and 19.97 m AHD by gauging. The fluctuation of groundwater levels were less than 2 m.
CSM_BH09S	In Sydney Yard south of Metro Box footprint	6.5 m / aquifer between fill and weathered shale	April 2019 to September 2020	Gauging	Groundwater levels ranged between 15.76 and 16.10 m AHD during the current monitoring period with a fluctuation less than 0.5 m. The groundwater levels were quite stable at this monitoring locations during the overall monitoring period.

Well ID	Location	Well depth and targeting aquifer	Monitoring period	Data source	Monitoring findings
CSM-BH10S		10 m / aquifer within residual soil	April 2019 to September 2020	Gauging / Datalogger from January 2020	Groundwater levels ranged between 11.3 and 12 m AHD (excluding sampling response) by data logger and between 11.31 and 11.81 m AHD by gauging Groundwater levels at this monitoring location were quite stable with fluctuation less than 1.5 m.

Based on the information presented in Table 5.1, groundwater with shallow aquifer within and in surrounding of Central Station / CSM footprint was observed a drawdown less than 2 m. Groundwater of deep aquifer within bedrock within and in surrounding of Central Station / CSM project footprint was observed a drawdown less than 2 m. Groundwater drawdown by passing of TBD through Central Station is considered irrelevant to the CSM works. Based on these, AGJV consider that the groundwater drawdown by CSM works are within the acceptable range stated in Section 3.8 of this report.

5.3.5 TBM effects on groundwater elevations

The tunnel boring machines (TBM1 and TBM2) passed underneath Central station between 18 and 19 July 2019, and between 1 and 2 August 2019 during the last monitoring period. AGJV undertook groundwater sampling soon after each event and found there was significant drawdown in the deep monitoring wells (CSM_BH04 and CSM_BH06) at the time of passing. The groundwater levels in shallow monitoring wells SRT_BH047 and SRT_CBH017 did not respond.

AGJV reviewed the graphs for deep monitoring wells in the current monitoring period and found the groundwater level in CSM_BH06 has recovered since the TBM passed, while the graph for CSM_BH04 indicates that groundwater levels have recovered approximately 70%.

5.4 Field measured groundwater quality parameters

The field measured groundwater quality parameters are summarised in **Table B4** of **Appendix B**. The field purging sheets are included in **Appendix F**.

The measured temperature, electrical conductivity and pH at monitoring well locations were relatively consistent across the monitoring period. It is noted that the oxidation / reduction potential fluctuated and were lower in deep monitoring wells compared with the shallow wells. Dissolved oxygen and pH observations were also generally lower in the deep wells.

The electrical conductivity (EC) at all locations was generally indicative of fresh water.

5.5 Laboratory analytical results

The results have been discussed separately relative to the adopted criteria in the following sections. The laboratory results are presented in **Table B2** of **Appendix B** and the laboratory reports are provided in **Appendix G**.

The following section only discusses the laboratory analytical results from the current monitoring period (April to September 2020) relative to the adopted criteria. A discussion of trends in the data over the entire monitoring period is presented in Section 5.6. All monitoring data from the current as well as previous monitoring periods are included in **Table B2** of **Appendix B**

The detections and exceedances of adopted screening criteria of contaminants of potential concern (COPC) are summarised in **Table B9, Appendix B** and are discussed further below.

5.5.1 Human health and ecological screening criteria

Heavy Metals

The heavy metal analytical results are discussed below:

- Arsenic: The majority (68 out of 95) of the groundwater samples had reported concentrations below the laboratory reporting limit (0.001 mg/L). The maximum detected concentration was 0.012 mg/L at GASW_BH25a. All samples had reported concentrations below the adopted human health criterion. There is no ecological criterion.
- Cadmium: All groundwater samples (95) had reported concentrations below the laboratory reporting limit (0.001 mg/L). However, some samples collected during the May 2020 monitoring event reported an elevated LOR (<0.002 mg/L), which exceeds the ecological criterion (0.0007 mg/L). All samples had reported concentrations below the adopted human health criterion.
- Chromium: The majority (89 out of 95) of groundwater samples had reported concentrations below the laboratory reporting limit (0.001 mg/L). The maximum detected concentration was 0.002 mg/L at SRT_BH059, however, some samples collected during the May 2020 monitoring event reported an elevated LOR (<0.01 mg/L) above the maximum detected concentration. All samples had reported concentrations below the adopted ecological screening criterion (0.0044 mg/L), with the exception of the elevated LORs during the May 2020 monitoring event. There is no human health criterion.
- Copper: Over half of all samples (68 out of 95) had reported concentrations above the adopted offsite ecological screening criterion (0.0013 mg/L) but below the adopted on human health screening criterion (20 mg/L). The maximum detected concentration was 0.13 mg/L at SRT_BH059 during the September 2020 monitoring event.
- Lead: The majority (83 out of 95) of the groundwater samples had reported concentrations below the laboratory reporting limit (0.001 mg/L). The maximum detected concentration was 0.003 mg/L at CSM_BH10S. However, some samples collected during the May 2020 monitoring event reported an elevated LOR (<0.01 mg/L), which exceeds the ecological criterion (0.0044 mg/L). All other samples had reported concentrations below the adopted human health and ecological screening criterion.
- Manganese: The majority (72 out of 82) of groundwater samples had reported concentrations above the laboratory reporting limit (0.005 mg/L). The maximum reported concentration was 1.7 mg/L at CSM_BH04. All samples had reported concentrations below the adopted human health criterion. There is no ecological criterion.
- Mercury: The majority (88 out of 95) of groundwater samples had reported concentrations below the laboratory reporting limit (0.0001 mg/L). The maximum detected concentration was 0.0004 mg/L at GASW_BH10, however, some samples collected during the May 2020 monitoring event reported an elevated LOR (<0.001 mg/L) above this concentration. All samples had reported concentrations below the adopted human health criterion, however 14 (seven due to elevated LOR) samples reported a concentration in exceedance of the ecological screening criterion (0.0001 mg/L).
- Nickel: Approximately half (55 out of 95) of the groundwater samples had reported concentrations equal to or above the adopted offsite ecological screening criterion (0.007 mg/L) but below the adopted human health screening criterion (0.2 mg/L), however four of these were due to an elevated LOR. The maximum reported concentration was 0.085 mg/L at CSM_BH06.

- Zinc: Over half (67 out of 95) of the groundwater samples had reported concentrations equal to or above the adopted offsite ecological screening criterion (0.015 mg/L), however six of these were due to an elevated LOR. The maximum reported concentration was 0.17 mg/L at CSM_BH06.

Cyanide

The majority of samples (67 out of 83) of groundwater samples had reported concentrations below the adopted offsite ecological screening criterion (0.004 mg/L), however 16 samples reported concentrations in exceedance of this criteria, with ten of these samples collected from GASW_BH23 (4) and GASW_BH25A (6). Most wells had reported concentrations of cyanide below the LOR.

AGJV reviewed the dataset of the previous 24 monitoring events and identified the majority of detections of total cyanide were located in a number of monitoring wells in the January 2019, July 2019 and March 2020 monitoring events. AGJV consider these detections of total cyanide are not localised to the uncovered gasworks gasholder and are part of the background fluctuations. However, AGJV consider the detections of total cyanide at GASW_BH23 and GASW_BH25A to be representative of gasworks related impacts at the former gasholder that are not part of background fluctuations.

TRH, BTEX and PAH

Total Recoverable Hydrocarbons (TRH) is typically measured through a solvent extraction procedure, however it is non-specific and includes not only petrogenic hydrocarbons but also non-petrogenic hydrocarbons, which can lead to overly conservative results and false positives. A better representation of the petroleum hydrocarbons in a sample can often be achieved by performing a procedure known as 'silica-gel clean-up'. This procedure uses silica-gel particles in the TRH solvent extract which typically adsorbs non-petrogenic hydrocarbons, leaving the petrogenic hydrocarbons dissolved in the extract. Analysis of the "cleaned-up" extract therefore produces analytical results representative of petrogenic sources, providing the best estimation of petroleum hydrocarbon concentrations. This groundwater monitoring program adopts the results from the silica-gel clean up procedure.

The majority of the groundwater samples submitted for analysis reported concentrations of TRH fractions >C10 to C40 (with silica gel cleanup) below the laboratory limit of reporting. There are unlimited value or no criteria for heavier TRH factions in relation to vapour intrusion. The reported detections appear to be indicative of impact associated with the gasworks.

Exceedances of adopted screening criteria were also noted in the following instances:

- Whilst concentration of TRH (with silica gel cleanup) were reported at low levels, concentrations of TRH F1 fraction (C6 – C10 fraction minus BTEX, without silica gel cleanup) were reported in exceedance of human health criteria (on-site vapour intrusion) in three samples at GASW_BH25A.
- Concentrations of benzene in groundwater samples collected from GASW_BH25A were reported in exceedance of the adopted on-site and off-site human health and ecological criteria across all monitoring events (maximum of 29,000 µg/L during the April 2020 monitoring event). Exceedances of ecological criteria were also reported for all samples collected from GAS_BH23, with one sample also exceeding the off-site recreational criteria.
- The concentration of toluene was reported in exceedance of the off-site recreational criteria at GAS_BH25A during the April, May and September 2020 monitoring events (maximum of 12,000 µg/L).
- Concentrations of naphthalene were reported below the laboratory limit of reporting on all occasions, however, due to high concentrations of one or more analytes at GASW_BH23 (April 2020) and GASW_BH25A (all monitoring events in current monitoring period), the LOR was reported above the adopted ecological screening criteria at these locations, with the limit of reporting raised to between 500 µg/L and 4,000 µg/L. The results for naphthalene show that actual values are below the ecological screening criteria.

- Almost all groundwater samples (87 out of 95) reported concentrations of benzo (a) pyrene below the laboratory limit of reporting, with six samples exceeding the adopted human health criteria for off-site recreational receptors. Trace analysis for benzo (a) pyrene identified two exceedances at GASW_BH23 (maximum concentration of 0.72 µg/L) and four exceedances at GASW_BH25A (maximum concentration of 0.52 µg/L).

Phenols, OCP, OPP and PCB

The majority of samples submitted for analysis had reported concentrations below the laboratory detection limit, although it is noted that the laboratory detection limit for endrin and chlorpyrifos was above the adopted criteria for the protection of marine ecosystems.

Ammonia

The majority of samples submitted for analysis (58 out of 82) had reported concentrations above the laboratory detection limit (0.01 mg/L). All the samples had reported concentrations below the adopted ecological criteria (0.91 mg/L), with the exception of one sample from GASW_BH23, which was collected in April 2020 and had a reported concentration of 0.98 mg/L.

5.5.2 Statistical analysis

The statistical analysis of the cyanide, ammonia and BTEX analytical results from all monitoring rounds was undertaken to understand the impact of the gasworks COPC on bulk groundwater concentrations and thus inform the need for groundwater treatment of these analytes before discharge off-site. Benzo(a)pyrene, xylene and ethylbenzene have not been assessed due to either the low level and low number of exceedances to date or the absence of any exceedances. Given the wide range in the concentrations of cyanide, ammonia and BTEX between wells throughout the site and wells within the former gasworks, the use of the 95th upper confidence limit (UCL) of the average concentrations was expected to be skewed by outliers. Rather, the actual concentration is likely to fall somewhere between the calculated median and mean values. The mean is also expected to be skewed upward but less so than the UCL and so it has been adopted as a conservative estimate of bulk formation water quality. Testing should be conducted on waste water entering the treatment system to accurately inform discharge treatment/management requirements. To obtain mean and median values, the average reported concentration was recorded for each well, with the average and median of those values calculated as presented in Table 5-2 below.

Table 5-2 – Mean and Median statistical calculations

COPC	Cyanide (mg/L)	Ammonia (mg/L)	Benzene (µg/L)	Toluene (µg/L)	TRH (F1) (µg/L)
Mean concentration	0.00879	0.07978	1136.91	538.656	686.89
Median concentration	0.004	0.043	1	1	20
Human health criteria - Vapour	Not available	Not available	5,000	Unlimited	6,000
Human health criteria – Recreational / Direct contact	0.8	Not available	10	8,000	Not available
Ecological criteria	0.004	0.91	500	Not available	Not available

The calculated mean and median cyanide concentrations are equal to or in exceedance of the adopted ecological criteria, but below the adopted human health criteria. The calculated values for cyanide will also be impacted by the LOR for cyanide being at, the ecological criteria.

The calculated mean concentration of benzene is in exceedance of the adopted recreational/direct contact human health criteria and the ecological criteria, whilst concentrations of toluene and TRH (F1) are below the adopted human health criteria, with no adopted ecological criteria.

Average and median ammonia concentrations are below the adopted ecological criteria.

It is noted that a number of metals (chromium, copper, lead, manganese, nickel and zinc) have exceedances of groundwater criteria may also require treatment before discharge off-site. The median and average values for these analytes are presented in the summary statistics in Table B2 of Appendix B.

It should be noted that these calculations are considered to be a conservative guide, and a mass balance approach may provide more representative results (see Section 7.2 recommendations).

In addition to the calculations of mean concentration and median concentration, 20th and 80th percentiles of the cyanide, ammonia, benzene, toluene and TRH (F1) were also calculated for selected monitoring well locations where these COPC were frequently detected above the laboratory reporting limits during the overall monitoring period. The 20th percentile is the value (or score) below which 20% of the observations may be found. Equivalently, 80% of the observations are found above the 20th percentile. The calculated 20th and 80th percentiles for selected monitoring well locations are present below in Table 5-3. The 20th and 80th percentiles of these COPC were generally consistent between the two monitoring periods. Please note these selected monitoring wells with consistent detection of COPCs were installed in the mid of second monitoring period (April to September 2019) therefore no baseline data are available.

Table 5-3 - 20th and 80th percentiles of COPC at selected monitoring well locations

20th and 80th percentiles at selected monitoring locations					
Benzene					
Adopted guideline:	**onsite health: 5000 ug/L**				
	offsite ecological: 500 ug/L				
	offsite health: 10 ug/L				
	Current period (ug/L)			monitoring period Sep 2019 to Feb 2020 (ug/L)	
Site ID	N*	20th %ile	80th %ile	20th %ile	80th %ile
GASW_BH7	6	-	-	62	120
GASW_BH23	6	1400	1400	1500	3266
GASW_BH25a	6	24200	27800	2700	9960

Toluene					
Adopted guideline:	**onsite health: NL**				
	offsite ecological: NA				
	offsite health: 8000 ug/L				
	Current period (ug/L)			monitoring period Sep 2019 to Feb 2020 (ug/L)	
Site ID	N*	20th %ile	80th %ile	20th %ile	80th %ile
GASW_BH7	6	-	-	1	8
GASW_BH23	6	7	17	53	290
GASW_BH25a	6	4500	12000	990	7200

Cyanide (Total)						
Adopted guideline:		**onsite health: NA**				
		offsite ecological: 0.004 mg/L				
		offsite health: 0.8 mg/L				
		Current period (mg/L)			monitoring period Sep 2019 to Feb 2020 (mg/L)	
Site ID		N*	20th %ile	80th %ile	20th %ile	80th %ile
GASW_BH7		6	-	-	<LOR	<LOR
GASW_BH23		6	0.002	0.010	0.006	0.026
GASW_BH25a		6	0.025	0.082	0.023	0.074

Ammonia						
Adopted guideline:		**onsite health: NA**				
		offsite ecological: 0.91 mg/L				
		offsite health: NA				
		Current period (mg/L)			monitoring period Sep 2019 to Feb 2020 (mg/L)	
Site ID		N*	20th %ile	80th %ile	20th %ile	80th %ile
GASW_BH7		6	-	-	0.02	0.04
GASW_BH23		6	0.07	0.50	0.27	0.72
GASW_BH25a		6	0.01	0.41	0.23	0.46

TRH F1						
Adopted guideline:		**onsite health: 6000 ug/L**				
		offsite ecological: NA				
		offsite health: NA				
		Current period (ug/L)			monitoring period Sep 2019 to Feb 2020 (ug/L)	
Site ID		N*	20th %ile	80th %ile	20th %ile	80th %ile
GASW_BH7		6	-	-	30	80
GASW_BH23		6	90	260	2292	3360
GASW_BH25a		6	350	18000	3000	6300

5.5.3 Aggressivity

Concentrations of sulfate, chloride and pH have been compared against the adopted aggressivity criteria in **Table B5** and **Table B6** of **Appendix B**. The results suggest that existing groundwater may present a non-aggressive to moderate risk to concrete structures intersecting groundwater. However due to the low pH values in groundwater at SRT_BH050 there is potential for a moderate to very severe risk to concrete structures above and below groundwater at this location. The reported groundwater quality is expected to be non-aggressive to steel piles with the exception at SRT_BH050, where groundwater presents a non-aggressive to moderate risk to steel structures.

5.5.4 Precipitation (Formation of Ochre)

Ferrous iron and manganese was analysed in groundwater samples and results are included in **Table B2** of **Appendix B.**

Ferrous iron concentrations ranged from below the laboratory reporting limits (0.05 mg /L) to maximum reported concentration of 13 mg/L at GASW_BH10. Comparison of the results against the criteria adopted for ochre formation suggests that there is a negligible to high potential for ochre formation.

The manganese concentrations ranged from less than the laboratory reporting limit (0.005 mg/L) to 1.2 mg/L at SRT_CBH09S.

5.6 Discussion of trends in COPC / analytes concentrations

The groundwater analytical results for the current monitoring period (April to September 2020) and previous monitoring periods (September 2018 to February 2019, April 2019 to September 2019 and October 2019 to March 2020) have been combined to analyse trends, the analytical results from all monitoring periods are presented in **Table B2, Appendix B**.

The field measured pH and laboratory analytical results for total dissolved solids (TDS), dissolved nickel, dissolved zinc, dissolved copper and dissolved lead for 14 active monitoring well locations (five deep wells and nine shallow wells with data from a minimum of six events and currently active) have been graphed and are included in **Appendix D**. These analytes were selected as:

- They have a high frequency of laboratory detection facilitating a reasonable assessment of trends over time
- They are at concentrations that commonly exceed the adopted human health or ecological criteria, and are therefore of key concern.

The most recent six months of monitoring has collated a reasonable dataset for concentrations of key COPC in and around the former gasworks. This includes cyanide, TRH (F1), BTEX and ammonia. As such, plots for these analytes have been prepared (see Appendix D) and are discussed below. It is noted that benzene has been used as a surrogate for TRH F1, in this instance, as it is currently the primary risk driver for these analytes. While benzo (a) pyrene is also a contaminant associated with gasworks waste, there are insufficient detectable concentrations in the current data set to reasonably assess trends.

5.6.1 TDS

The graph for total dissolved solids suggests a relatively stable trend in total dissolved solids over the entire monitoring period, with the exception of the concentration of total dissolved solids at GASW_BH10 and CSM_BH02, which show a slight upward trend with various spikes in concentration. It appears unlikely that the response would be due to construction given the relatively consistent stable trend across other sampling locations throughout the monitoring periods.

5.6.2 pH

There is no clear trend in the pH results suggesting that the results represent normal fluctuation in background conditions. Spikes in pH (insitu observations) were observed at some wells during the previous monitoring period (August, October, November and December of 2019), however pH has since stabilised in all wells and these spikes have not been observed during the current monitoring period.. The pH levels are generally below (and outside) the default trigger value range for slightly disturbed estuaries in south-east Australia (ANZECC & ARMCANZ, 2000a).

5.6.3 Metals

Concentrations of lead and zinc appear to follow a relatively stable trend, with the exception of a temporary spike in these analytes during the June and July 2020 monitoring events.

The concentrations of nickel appear to have a high degree of fluctuation in background concentrations, with no clear trend. A sample collected CSM_BH06 during the July 2020 monitoring reported a concentration of 0.085 mg/L of nickel, above the previous maximum of 0.053 mg/L, taken from the same monitoring well during the November 2019 monitoring event.

The concentrations of copper appeared to be relatively stable until the July, August and September 2020 monitoring event, where the concentration of copper spike at various wells, reaching a maximum of 0.13 mg/L

It is noted however, that in monitoring wells SRT_BH047, SRT_BH052 and SRT_BH059, which have data extending across all monitoring periods, including the baseline monitoring period (approximately 18 months of monitoring), there appears to be a general trend of decreasing concentrations for pH, TDS, lead and zinc. It is unclear if this is associated with construction works or a climatic effect, but at present it is resulting in less frequent and lower level exceedances of the criteria at these locations for the analytes assessed.

5.6.4 Benzene and Toluene

The trend plots for benzene and toluene highlight the impacts associated with the gasworks, particularly in the wells installed at or about the commencement of the latest six month monitoring period (such as GASW_BH7, GASW_BH23 and GASW_BH25A). The higher concentrations reflect the incorporation of the gasworks wells into the monitoring program over the current monitoring period rather than the presence of increasing impacts associated with construction.

As stated previously, the concentrations of benzene and toluene in the former gasworks monitoring wells, particularly those screened directly in the gasworks waste (GASW_BH23 and GASW25A) have concentrations that have exceeded the adopted criteria (including the adopted criteria for human health – vapour, human health criteria – recreation / direct contact and ecology – marine water ecosystems).

The concentrations of benzene and toluene in the gasworks wells do not appear to show increasing trends, but rather a high variability. Ongoing monitoring will inform the range in variations that can be expected for wells screened in and around the former gasworks.

5.6.5 Ammonia

The plot for ammonia does not show any increasing trends across the data set, albeit a spike reported at GASW_BH23 in April 2020.

Ammonia concentrations in deep monitoring wells were relative stable and generally an order of magnitude lower than the adopted ecological criterion.

The ammonia concentrations present in GASW_BH23 and GASW_BH25A are higher than elsewhere across the site reflecting the elevated ammonia impacts present within the gasworks waste. The concentrations in these wells have been reported above the adopted ecological criteria in one instance, which is reflective of the existing gasworks waste rather than impacts from construction works.

Concentrations in deep well SRT_BH039 were above the ecological criteria at the start of the monitoring program suggesting that background concentrations were elevated in the deeper aquifer system.

5.6.6 Cyanide

Concentrations of cyanide are all above the adopted ecological criteria primarily until December 2019 when trace analysis was introduced and the laboratory limit of reporting was reduced from 0.005 mg/L to 0.004 mg/L, which equals the adopted ecological criteria. There are no concentrations above the adopted human health recreational/direct contact criteria. There is no apparent trend of increasing cyanide concentrations in the data set.

Concentrations of cyanide in the gasworks waste wells (GASW_23 and GASW_25A) are elevated relative to elsewhere on site (over the same monitoring period) and consistently above detection, which is reflective of gasworks waste impact rather than construction related impacts. The concentrations do not appear to show increasing trends, but rather a high variability. Ongoing monitoring will inform the range in variations that can be expected for wells screened in and around the former gasworks.

6 Quality assurance and quality control assessment results

6.1 Field program

As part of the AGJV QA/QC program, one intra-laboratory and one inter-laboratory duplicate sample was analysed during each monitoring event. Concentrations were reported for heavy metals and PAH, however some results reported concentrations below the limit of laboratory reporting and as a result, it was not possible to calculate a RPD for these samples. For analytes with detected concentrations reported, RPDs were within the acceptable range, with the exception of exceedances shown in **Table B7, Appendix B**.

Elevated RPDs were noted between the following primary and duplicate samples (excluding lab calculated parameters):

- CSM_BH09S and QC02 in July and August 2020 for copper (67%)
- CSM_BH02 and QC02 in June 2020 for copper (100%) and zinc (120%)
- CSM_BH10S and QC02 in May 2020 for copper (114%) and naphthalene (164%)
- CSM_BH02 and QC02 in September 2020 for arsenic (67%) and copper (40%)
- CSM_BH08 and QC01 in June 2020 for copper (67%) and nickel (33%)
- CSM_BH08 and QC01 in May 2020 for copper (111%) and zinc (42%)
- CSM_BH08 and QC01 in July 2020 for copper (160%) and zinc (149%)
- CSMBH08 and QC01 in September 2020 for nickel (67%) and zinc (82%)

These elevated RPDs were likely attributed to the concentrations of analytes being close to the laboratory reporting limits (i.e. less than 10 times of the laboratory reporting limits), where a small difference in concentrations trigger an exaggerated RPD result. One rinsate sample was collected during each monitoring round and analysed for heavy metals. Concentrations from all rinsate samples collected during this monitoring round were reported below the laboratory limit of reporting (LOR) indicating that cross contamination of samples did not occur.

One set of water trip blank and trip spikes were analysed as part of each monitoring round of the investigation. The results of the trip spike have been reviewed by GHD and were found to be within the acceptable criteria, therefore it is considered unlikely that an unacceptable loss of volatile contaminants would have occurred. Concentrations from the trip blank samples were reported below the laboratory LOR, therefore it is considered unlikely that cross-contamination of samples or loss of volatiles occurred during transportation to the laboratory.

The rinsate and trip blank analytical results are summarised in **Table B8, Appendix B**. Laboratory analytical reports are included in **Appendix G**.

6.2 Laboratory program

Holding times

All analytes were extracted within the laboratory's required holding times for chemical analysis as presented on laboratory reports on **Appendix G**.

Laboratory program

The NATA certified laboratories used for this assessment (Eurofins Sydney and Australian Laboratory Services) undertook their own quality assurance and quality control procedures for sample analysis. AGJV has reviewed the internal laboratory control data provided within the laboratory reports, which are attached as **Appendix G**. It is noted comments have been provided by the laboratory where a failure result was reported in laboratory QA/QC procedures.

6.3 Discussion

Despite the elevated RPD of primary and duplicate samples for arsenic, copper, nickel, zinc and naphthalene, the results of the QA/QC program are considered to provide an acceptable degree of confidence in the analytical program completed. Overall, the analytical data set is considered to be valid and acceptable for assessing the contamination status of the site.

7 Findings, conclusions and recommendations

7.1 Findings and conclusions

In accordance with the objectives detailed in **Section 1.1**, and based on the information contained within this monitoring program, the following findings are noted (subject to the limitations outlined in **Section 9**).

- Due to the destruction and replacement of monitoring wells as the construction progresses there are the following difference in sampling locations to those listed in Table 7.3 of the latest CGWMP:

Table 7-1 – Summary of monitoring wells removed from the monitoring program

Monitoring wells removed from the monitoring program	Targeted aquifer	Status
CSM_BH05	Deep aquifer	Destroyed (August 2019)
SRT_BH063	Shallow aquifer	Destroyed (February 2020)
SRT_CBH015	Shallow aquifer	Destroyed (January 2020)
SRT_CBH017	Shallow aquifer	Destroyed (February 2020)

Table 7-2 - Summary of monitoring wells added to the monitoring program

Monitoring wells added to the monitoring program	Targeted aquifer	Status
GASW_BH7	Shallow aquifer	Sampled from June 2019, Became dry from April 2020
GASW_BH10	Deep aquifer	Sampled from June 2019
GASW_BH11	Shallow aquifer	Sampled from June 2019
GASW_BH23	Shallow aquifer	Sampled from September 2019
GASW_BH25a	Shallow aquifer	Sampled from September 2019
CSM_BH11s	Shallow aquifer	Installed prior to September 2020 monitoring event. Dry well, water was not encountered.
SRT_BH050	Shallow aquifer	Sampled from March 2020
SRT_BH052	Shallow aquifer	Sampled from October 2018

The groundwater elevation data suggests groundwater drawdown at the boundary of the CSM project area are within the acceptable range specified in the project EIS and REMM. The groundwater elevation data also suggested that there are two distinct aquifers at the site one in the overlying unconsolidated materials (the shallow aquifer) and the other in the Hawkesbury Sandstone (the deep aquifer). This is supported by:

- A difference greater than 5 m in groundwater elevations between the shallow and deeper aquifers.

- A difference in response to rainfall events between wells screened within the shallow and deep aquifers. Shallow wells displayed an immediate response to rainfall events, whereas deep wells displayed a delayed response.
- A different response to the passing of the TBM between wells screened in the shallow and deeper aquifer systems.
- There does not appear to be any observable impact to groundwater elevations associated with the excavation of the metro box to date.

Groundwater flow direction within the shallow aquifer system is toward the north and west. It appears this is generally consistent with the general fall in topography and towards harbour areas.

Groundwater flow direction in the deeper aquifer appears to be to the north east and towards harbour areas.

The groundwater quality sampling results suggest the following:

- Concentrations of lead, zinc and nickel in all the groundwater wells appear to be generally stable across all four monitoring periods (September 2018 to March September 2020).
- Based on the exceedances identified and summarised in **Table B9** of **Appendix B**, and the statistical analysis undertaken in Section 5.5.2**,** the following analytes are may require management/treatment before discharge to surface water
  - pH
  - Cyanide
  - Metals including chromium, copper, lead (noting it has not exceeded criteria over the last monitoring period), manganese, mercury (one exceedance only), nickel and zinc.
  - Benzo(a)pyrene
  - Benzene
- TRH (with silica gel cleanup) results have been detected above laboratory LOR in five monitoring wells. These detections are of low levels and appear to be indicative of low level impact associated with the gasworks. However, concentrations of TRH F1 fraction (C6 – C10 minus BTEX, without silica gel cleanup) were reported in exceedance of on-site human health criteria (vapour intrusion) on three occasions during the current monitoring period.
- Benzene, benzo (a) pyrene and toluene in and around the gasworks and manganese across the site may represent a potential contact risk for construction workers, although it is noted that the adopted criteria are conservative.
- Concentrations of benzene in GASW_BH23 and GASW_BH25a have been reported above the human health criteria for industrial (construction) and commercial receptors via vapour intrusion pathway on five occasions during the current monitoring period. AGJV understand that the vapour intrusion risk is managed by the project Construction Environmental Management Plan (CEMP). The vapour intrusion risk for the operations phase has been assessed in the Gasworks Quantitative Risk Assessment (SMCSWCSM-DJV-EW-00-MEM-GE-000045) and appropriate mitigation measures have been incorporated into the construction design.
- There is potential for very severe risk to concrete structures and mild to moderate risk to steel within the vicinity of the shallow monitoring well SRT_BH050, however there is limited data available at this location. Groundwater was considered non-aggressive to steel structures and moderate to non-aggressive to concrete structures in all other monitoring wells including those throughout the area of the former gasworks. A severe to very severe risk to steel structures has previously been identified in GASW_BH7, however no data was available for GASW_BH7 throughout this monitoring period.
- There is a moderate to high potential for ochre formation throughout the site, particularly within the vicinity of the former gasworks holder, given ferrous iron concentrations were reported more than

10 mg/L at GASW_BH7 during previous monitoring period and at GASW-BH10 during past and current monitoring periods.

- There does not appear to be an ongoing emergence of groundwater quality impacts associated with the construction works. This is understandable given that groundwater flow is directed into excavation, where it is being collected and treated.

7.2 Recommendations

Based on the findings of the current groundwater monitoring period and consideration of findings from the previous monitoring period and the baseline monitoring period, AGJV recommend:

- Continued monitoring and factual reporting on a six monthly basis in accordance with the CGWMP.
- The addition of TRH C6-C10 (minus BTEX) (F1) and ammonia to the list of chemicals requiring treatment for discharge to surface water.
- Ongoing characterisation of groundwater quality entering the treatment plant, particularly
  - pH
  - Cyanide
  - Metals including chromium, copper, lead, manganese, mercury, nickel and zinc.
  - Benzo (a) pyrene
  - Benzene
- Due to destruction of monitoring wells it is recommended that additional wells should be installed to replace destroyed monitoring well SRT_BH017 on suburban platforms in close proximity to central walk. This is to monitor the impact of construction of Central Walk on the shallow groundwater aquifer. The newly installed monitoring wells on suburban platforms CSM-BH11s was found dry.
- The groundwater aggressivity results have been tabulated (**Table B5 and Table B6, Appendix B**) and should be provided to the relevant AGJV design specialist for further consideration.
- The groundwater monitoring results should be provided to the relevant specialist operator of the construction and operational water treatment plants for the treatment of groundwater.

8 References

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9 Limitations

It is noted that AGJV does not rely on any data collected and reported by other consultants.

This report has been prepared by AGJV for LOR and may only be used and relied on by LOR for the purpose agreed between AGJV and LOR as set out in section 1 of this report.

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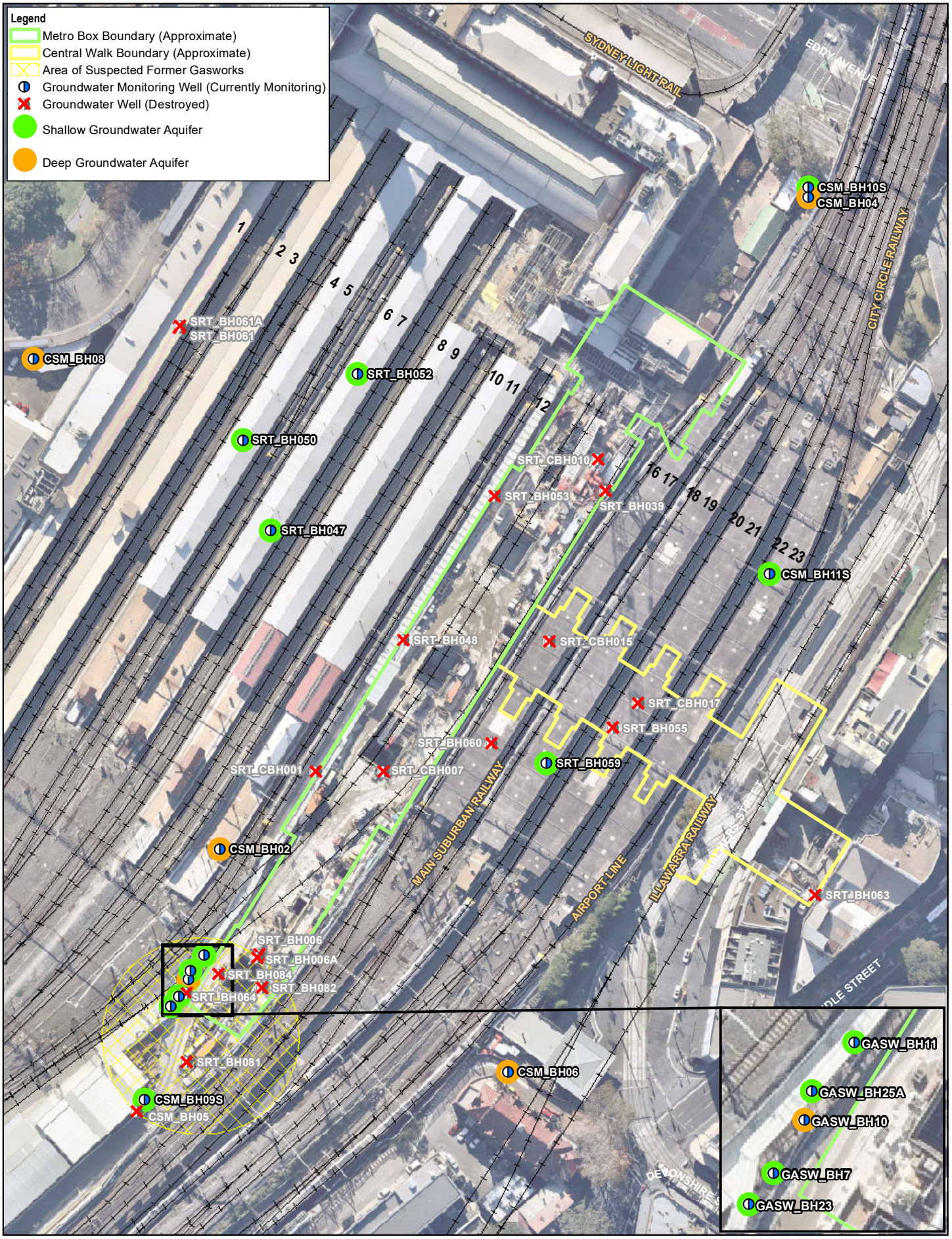
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Appendices

Appendix A
Figures



Paper Size ISO A4

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Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

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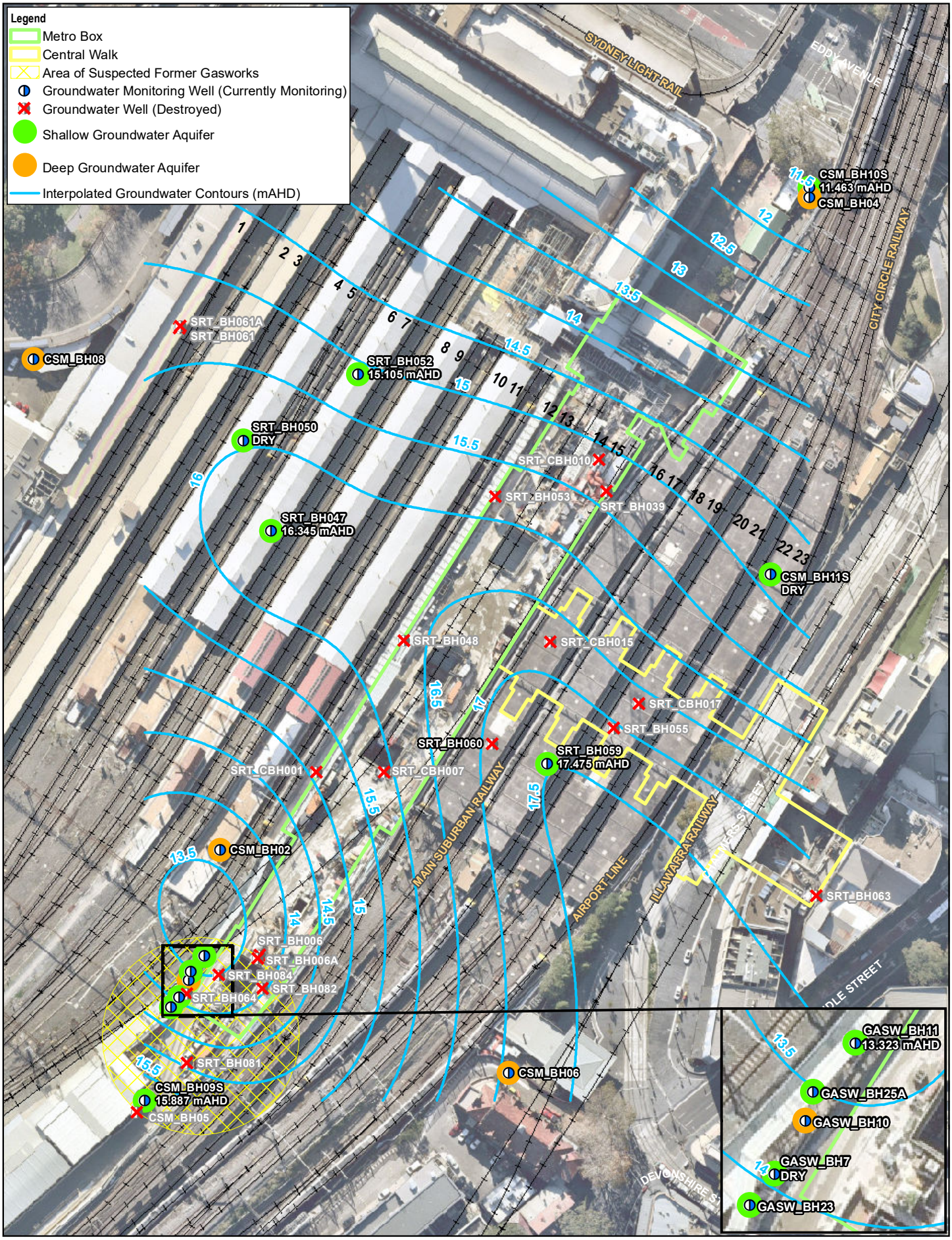
Laing O'Rourke
Central Station Main Works

Monitoring Well Locations
(September 2020)

Project No. 21-27234
Revision No. -
Date 03/11/2020

Figure 1

Data source: . Created by: tnham



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Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

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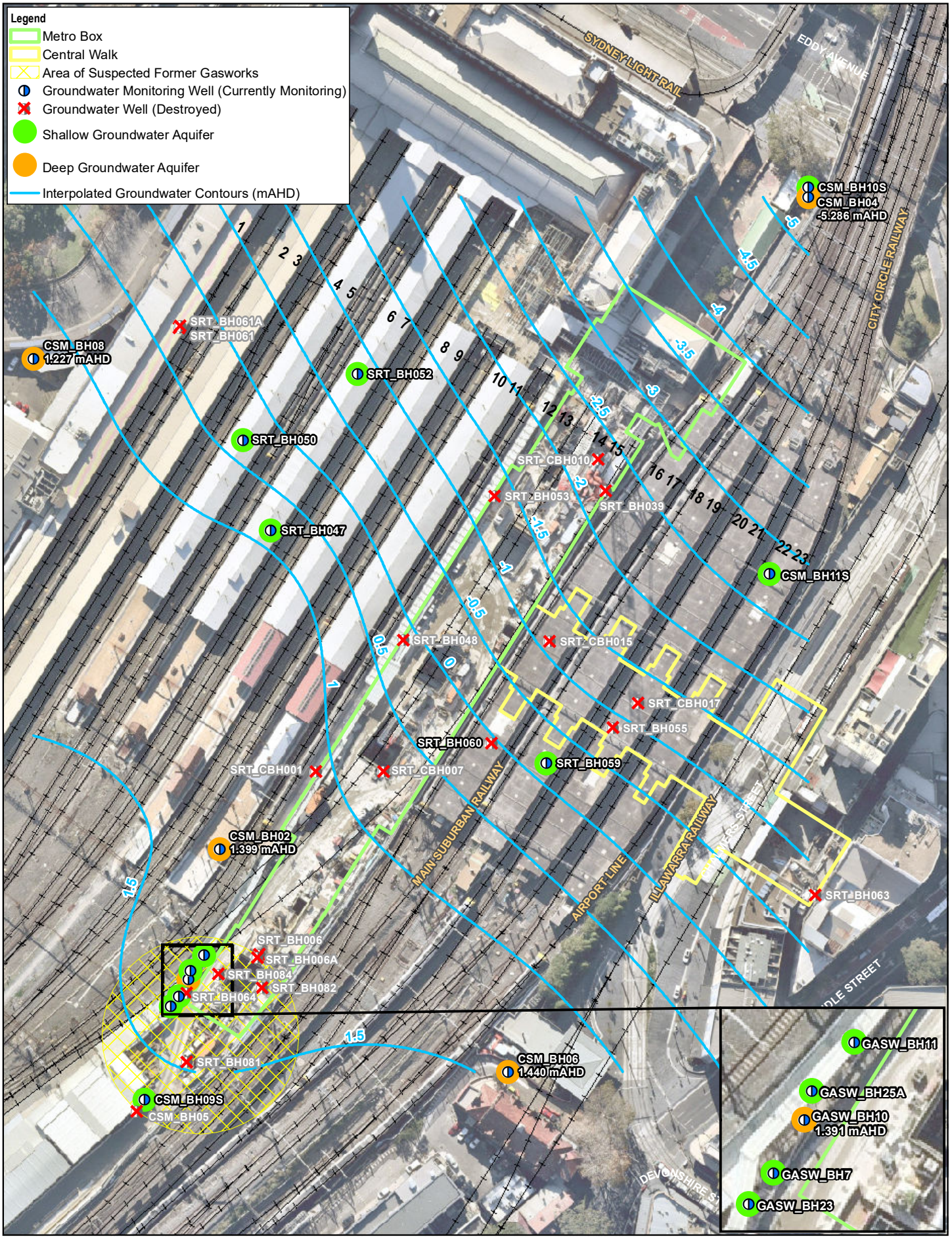
Laing O'Rourke
Central Station Main Works

Interpolated Groundwater Contours - September 2020 (Shallow Aquifer)

Project No. 21-27234
Revision No. -
Date 03/11/2020

Figure 2

Data source: . Created by: tnham



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Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

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Laing O'Rourke
Central Station Main Works

Interpolated Groundwater Contours - September 2020 (Deep Aquifer)

Project No. 21-27234
Revision No. -
Date 03/11/2020

Figure 3

Data source: . Created by: tnham

Appendix B
Tables

Appendix B

Table 1 Summary of monitoring well status during monitoring program (September 2018 to September 2019)

Well ID	Approx. Location	Targeted aquifer	Datalogger placed?	Event 1 Sept 2018	Event 2 Oct 2018	Event 3 Nov 2018	Event 4 Dec 2018	Event 5 Jan 2019	Event 6 Feb 2019	Event 7 April 2019	Event 8 May 2019	Event 9 June 2019	Event 10 July 2019	Event 11 Aug 2019	Event 12 Sept 2019
SRT_BH006	Sydney Yard	Deep		Not Found / Destroyed											
SRT_BH006A	Sydney Yard	Shallow		Not Found / Destroyed											
SRT_BH039	Track 15	Deep		Sampled	Sampled	Destroyed									
SRT_BH047	Platform 6/7	Shallow	Logger + Baro	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
SRT_BH048	Platform 12/13	Shallow		Sampled	Sampled	Sampled	Destroyed								
SRT_BH050	Platform 4/5	Shallow													
SRT_BH052	Platform 6/7	Shallow		Covered by Hoarding	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
SRT_BH053	Platform 12/13	Deep		Sampled	Sampled	Covered by Hoarding	Destroyed								
SRT_BH055	Platform 20/21	Shallow		Dry											
SRT_BH059	Platform 18/19	Shallow			Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
SRT_BH060	Platform 16/17	Shallow													
SRT_BH063	Offsite Randle Lane	Shallow		Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	No Access
SRT_BH064	Sydney Yard	Shallow		Sampled	Not Found / Destroyed										
SRT_BH081	Sydney Yard	Shallow			Not Found / Destroyed										
SRT_BH082	Sydney Yard	Shallow			Sampled	Sampled	Not Found / Destroyed								
SRT_BH084	Sydney Yard	Shallow		Not Found / Destroyed											
SRT_CBH001	Platform 12/13	Shallow		Sampled	Sampled	Sampled	Destroyed								
SRT_CBH007	Platform 14/15	Shallow		Sampled	Destroyed										
SRT_CBH015	Platform 16/17	Shallow		Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
SRT_CBH017	Platform 20/21	Shallow	Logger (removed Jan 2020)	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
CSM_BH02	Platform 10/11	Deep	Logger							Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
CSM_BH04	Eddy Ave Driveway	Deep	Logger							Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
CSM_BH05	Sydney Yard	Deep								Sampled	Sampled	Sampled	Sampled	Destroyed	
CSM_BH06	Institute Drive	Deep	Logger							Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
CSM_BH08	Ambulance Ave	Deep								Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
CSM_BH09S	Sydney Yard	Shallow								Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
CSM_BH10S	Eddy Ave Driveway	Shallow	Logger (installed Jan 2020)							Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
CSM_BH11S	Platform 22	Shallow													
GASW_BH7	Sydney Yard Gasworks	Shallow										Sampled	Sampled	Sampled	Sampled
GASW_BH10	Sydney Yard Gasworks	Deep										Sampled	Sampled	Sampled	Sampled
GASW_BH11	Sydney Yard Gasworks	Shallow										Sampled	Sampled	Sampled	Sampled
GASW_BH23	Sydney Yard Gasworks	Shallow													Sampled
GASW_BH25a	Sydney Yard Gasworks	Shallow													Sampled

	Well Sampled
	Not Sampled
	Not scheduled / available for sampling
	Grab sample taken

Appendix B

Table 1 Summary of monitoring well status during monitoring program (September 2018 to September 2019)

Well ID	Approx. Location	Targeted aquifer	Datalogger placed?	Round 13 Oct 2019	Round 14 Nov 2019	Round 15 Dec 2019	Round 16 Jan 2020	Round 17 Feb 2020	Round 18 Mar 2020	Round 19 Apr 2020	Round 20 May 2020	Round 21 Jun 2020	Round 22 Jul 2020	Round 23 Aug 2020	Round 24 Sept 2020
SRT_BH006	Sydney Yard	Deep													
SRT_BH006A	Sydney Yard	Shallow													
SRT_BH039	Track 15	Deep													
SRT_BH047	Platform 6/7	Shallow	Logger + Baro	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
SRT_BH048	Platform 12/13	Shallow													
SRT_BH050	Platform 4/5	Shallow						No Sample	Grab Sampled	Grab Sampled	DRY	Grab Sampled	Grab Sampled	Grab Sampled	DRY
SRT_BH052	Platform 6/7	Shallow		Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
SRT_BH053	Platform 12/13	Deep													
SRT_BH055	Platform 20/21	Shallow						Destroyed							
SRT_BH059	Platform 18/19	Shallow		Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Grab Sampled	Sampled	Sampled	Sampled
SRT_BH060	Platform 16/17	Shallow						No Sample	Grab Sampled	Grab Sampled	Destroyed				
SRT_BH063	Offsite Randle Lane	Shallow		No Access	No Access	No Access	No Access	Destroyed							
SRT_BH064	Sydney Yard	Shallow													
SRT_BH081	Sydney Yard	Shallow													
SRT_BH082	Sydney Yard	Shallow													
SRT_BH084	Sydney Yard	Shallow													
SRT_CBH001	Platform 12/13	Shallow													
SRT_CBH007	Platform 14/15	Shallow													
SRT_CBH015	Platform 16/17	Shallow		Sampled	Sampled	Sampled	Destroyed								
SRT_CBH017	Platform 20/21	Shallow	Logger (removed Jan 2020)	Sampled	Sampled	Sampled	Sampled	Destroyed							
CSM_BH02	Platform 10/11	Deep	Logger	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
CSM_BH04	Eddy Ave Driveway	Deep	Logger	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
CSM_BH05	Sydney Yard	Deep													
CSM_BH06	Institute Drive	Deep	Logger	Sampled	Sampled	Sampled	No Access	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
CSM_BH08	Ambulance Ave	Deep		Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
CSM_BH09S	Sydney Yard	Shallow		Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
CSM_BH10S	Eddy Ave Driveway	Shallow	Logger (installed Jan 2020)	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
CSM_BH11S	Platform 22	Shallow													DRY
GASW_BH7	Sydney Yard Gasworks	Shallow		Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	DRY	DRY	DRY	DRY	DRY	DRY
GASW_BH10	Sydney Yard Gasworks	Deep		Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
GASW_BH11	Sydney Yard Gasworks	Shallow		Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled
GASW_BH23	Sydney Yard Gasworks	Shallow		Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Grab Sampled	Grab Sampled	Grab Sampled	Grab Sampled	Grab Sampled
GASW_BH25a	Sydney Yard Gasworks	Shallow		Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Sampled	Grab Sampled

	Well Sampled
	Not Sampled
	Not scheduled / available for sampling
	Grab sample taken

	Inorganics			Cyanide		Acidity & Alkalinity					Major Ions														Nutrients		Metals									
	pH (Lab)	Total Dissolved Solids	Total Suspended Solids	Cyanide (Free)	Cyanide (Total)	Alkalinity (Carbonate as CaCO3)	Alkalinity (Bicarbonate as CaCO3)	Alkalinity (Hydroxide as CaCO3)	Alkalinity (total as CaCO3)	Hardness as CaCO3	Calcium	Calcium (Filtered)	Magnesium	Magnesium (Filtered)	Potassium	Potassium (Filtered)	Sodium	Sodium (Filtered)	Chloride	Sulfate	Sulfate (Filtered)	Cations Total	Anions Total	Ionic Balance	Ammonia as N	Nitrate (as N)	Arsenic (Filtered)	Cadmium (Filtered)	Chromium (III+VI) (Filtered)	Copper (Filtered)	Lead (Filtered)	Manganese	Manganese (Filtered)	Mercury (Filtered)	Nickel (Filtered)	Zinc (Filtered)
	pH units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	meq/L	meq/L	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL	0.01	5	1	0.004	0.004	1	1	1	1	5	0.5	1	0.5	1	0.5	1	0.5	1	1	2	1	0.01	0.01	0.01	0.01	0.02	0.001	0.0001	0.001	0.001	0.001	0.005	0.001	0.0001	0.001	0.005
NEPM 2013 Table 1A(4) HSL D Comm/Ind GW for Vapour Intrusion, Sand																																				
2-4m																																				
4-8m																																				
>8m																																				
NEPM 2013 Table 1C GILs, Marine Waters					0.004																				0.91			0.0007[#3]	0.0044[#4]	0.0013[#4]	0.0044[#4]			0.0001[#5]	0.007[#4]	0.015[#6]
NHMRC Recreational Guidelines 2008 - Health					***0.8***															***5000***	***5000***						***0.1***	***0.02***		***20***	***0.1***	***5***	***5***	***0.01***	***0.2***	

Site_ID	Field_ID	Location_Code	Sampled_Date_Time	Sample_Type	Lab_Report_Number																															
Sydney Metro - Central	CSM_BH02	CSM_BH02	16/04/2019	Normal	651825	-	-	-	-	<0.005	<10	110	-	-	-	9.2	-	11	-	2.7	-	61	-	51	44	-	-	-	-	0.05	<0.02	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.2	<0.0001	0.012	0.006
Sydney Metro - Central	CSM_BH02	CSM_BH02	14/05/2019	Normal	656080	8.5	410	3300	-	0.005	11	240	-	-	-	43	-	26	-	3.2	-	64	-	68	38	-	-	-	-	0.12	<0.02	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.55	<0.0001	0.012	0.01
Sydney Metro - Central	CSM_BH02	CSM_BH02	6/06/2019	Normal	660130	7.8	470	970	-	<0.005	<10	290	-	-	-	48	-	36	-	6.6	-	110	-	150	35	-	-	-	-	0.04	<0.02	0.001	<0.0002	<0.001	<0.001	<0.001	-	0.33	<0.0001	0.009	0.016
Sydney Metro - Central	CSM_BH02	CSM_BH02	30/07/2019	Normal	669059	8	550	42,000	-	0.092	<10	350	-	-	-	50	-	43	-	5.8	-	120	-	500	24	-	-	-	-	<0.01	<0.02	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.13	<0.0001	0.004	0.007
Sydney Metro - Central	CSM_BH02	CSM_BH02	29/08/2019	Normal	674722	7.9	610	6400	-	<0.005	<10	320	-	-	-	49	-	40	-	5.7	-	120	-	190	25	-	-	-	-	<0.01	<0.02	<0.001	<0.0002	<0.001	0.002	<0.001	-	0.24	<0.0001	0.006	0.007
Sydney Metro - Central	CSM_BH02	CSM_BH02	26/09/2019	Normal	679636	7.8	440	3100	-	<0.005	<10	310	-	-	-	44	-	37	-	4.8	-	110	-	160	31	-	-	-	-	0.03	0.06	0.002	<0.0002	<0.001	<0.001	<0.001	-	0.26	<0.0001	0.015	0.011
Sydney Metro - Central	CSM_BH02	CSM_BH02	17/10/2019	Normal	683453	7.9	530	4400	-	<0.005	<10	290	-	-	-	48	-	39	-	5.7	-	120	-	500	28	-	-	-	-	0.06	0.04	0.002	<0.0002	<0.001	0.01	<0.001	-	0.33	<0.0001	0.028	0.048
Sydney Metro - Central	CSM_BH02	CSM_BH02	13/11/2019	Normal	688512	7.9	620	4600	-	<0.005	<10	330	-	-	-	50	-	42	-	5.5	-	120	-	520	29	-	-	-	-	0.02	0.03	0.002	<0.0002	<0.001	<0.001	<0.001	-	0.29	<0.0001	0.025	0.01
Sydney Metro - Central	CSM_BH02	CSM_BH02	17/12/2019	Normal	694466	8.1	290	2800	-	<0.004	<10	280	-	-	-	33	-	30	-	5	-	78	-	150	34	-	-	-	-	0.02	0.16	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.19	<0.0001	0.009	0.012
Sydney Metro - Central	CSM_BH02	CSM_BH02	21/01/2020	Normal	698379	4.8	560	2200	-	<0.004	<10	320	-	-	-	41	-	37	-	11	-	120	-	180	28	-	-	-	-	0.02	<0.02	0.002	<0.0002	<0.001	<0.001	<0.001	-	0.26	<0.0001	0.027	0.01
Sydney Metro - Central	CSM_BH02	CSM_BH02	25/02/2020	Normal	704673	8.3	540	1600	-	<0.004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.09	-	<0.001	<0.0002	<0.001	0.002	<0.001	-	0.12	<0.0001	0.021	0.008
Sydney Metro - Central	CSM_BH02	CSM_BH02	25/02/2020	Normal	706746	-	-	-	-	-	<10	290	-	-	-	49	-	37	-	10	-	100	-	190	34	-	-	-	-	-	0.04	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH02	CSM_BH02	18/03/2020	Normal	708508	7	870	1800	-	0.008	<10	310	-	-	-	43	-	39	-	7.2	-	110	-	150	32	-	-	-	-	0.05	0.04	<0.001	<0.0002	<0.001	0.009	<0.001	-	0.091	<0.0001	0.009	0.041
Sydney Metro - Central	CSM_BH02	CSM_BH02	14/04/2020	Normal	714027	6.6	490	2000	-	<0.004	<10	380	-	-	-	63	-	51	-	8.6	-	150	-	190	28	-	-	-	-	0.05	<0.02	<0.001	<0.0002	<0.001	0.002	<0.001	-	0.09	<0.0001	0.004	0.015
Sydney Metro - Central	CSM_BH02	CSM_BH02	19/05/2020	Normal	720682	7.5	660	1600	-	<0.004	<10	410	-	-	-	44	-	38	-	5.1	-	110	-	150	29	-	-	-	-	0.03	0.09	0.001	<0.0002	<0.001	0.01	<0.001	0.63	-	<0.0001	0.014	0.035
Sydney Metro - Central	CSM_BH02	CSM_BH02	18/06/2020	Normal	726825	7.4	470	1000	-	0.004	<10	390	-	-	-	<5	-	<5	-	<5	-	11	-	160	29	-	-	-	-	0.03	<0.02	0.002	<0.0002	<0.001	<0.001	<0.001	-	0.35	<0.0001	0.023	0.008
Sydney Metro - Central	QC02	CSM_BH02	18/06/2020	Field_D	726825	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.002	<0.0002	<0.001	0.003	<0.001	-	-	<0.0001	0.025	0.032
Sydney Metro - Central	CSM_BH02	CSM_BH02	18/06/2020	Normal	ES2021404	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH02	CSM_BH02	15/07/2020	Normal	732590	6.4	1000	1600	-	0.02	<10	270	<20	270	-	38	-	37	-	7.4	-	110	-	160	32	-	-	-	-	<0.01	-	0.003	<0.0002	<0.001	<0.001	<0.001	-	0.3	<0.0001	0.027	0.016
Sydney Metro - Central	CSM_BH02	CSM_BH02	18/08/2020	Normal	738860	6.9	350	980	-	<0.004	<10	240	-	-	-	26	-	19	-	<5	-	53	-	47	37	-	-	-	-	<0.01	0.03	<0.001	<0.0002	<0.001	0.006	0.002	-	0.13	<0.0001	0.013	0.046
Sydney Metro - Central	CSM_BH02	CSM_BH02	14/09/2020	Normal	744463	7.9	420	1100	-	<0.004	<10	240	<20	240	200	35	-	28	-	<5	-	92	-	85	34	-	-	-	-	0.05	-	0.001	<0.0002	<0.001	0.003	<0.001	-	0.49	<0.0001	0.019	0.014
Sydney Metro - Central	QC02	CSM_BH02	14/09/2020	Field_D	744463	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.002	<0.0002	<0.001	0.002	<0.001	-	-	<0.0001	0.02	0.014
Sydney Metro - Central	CSM_BH04	CSM_BH04	16/04/2019	Normal	651825	-	-	-	-	<0.005	<10	91	-	-	-	5.8	-	11	-	2.5	-	69	-	65	55	-	-	-	-	<0.01	<0.02	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.36	<0.0001	0.01	<0.005
Sydney Metro - Central	CSM_BH04	CSM_BH04	13/05/2019	Normal	656080	7.3	260	3700	-	<0.005	<10	85	-	-	-	5.2	-	9.5	-	2.4	-	66	-	56	56	-	-	-	-	<0.01	<0.02	<0.001	<0.0002	<0.001	0.004	<0.001	-	0.3	<0.0001	0.029	0.29
Sydney Metro - Central	CSM_BH04	CSM_BH04	11/06/2019	Normal	660130	6.7	200	2700	-	<0.005	<10	86	-	-	-	4.5	-	11	-	2.4	-	69	-	63	56	-	-	-	-	<0.01	<0.02	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.44	<0.0001	0.023	0.051
Sydney Metro - Central	CSM_BH04	CSM_BH04	30/07/2019	Normal	669059	7	280	6500	-	0.035	<10	100	-	-	-	9	-	15	-	3	-	79	-	110	38	-	-	-	-	<0.01	<0.02	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.42	<0.0001	0.018	0.025
Sydney Metro - Central	CSM_BH04	CSM_BH04	29/08/2019	Normal	674722	6.5	290	630	-	<0.005	<10	120	-	-	-	6.3	-	12	-	2.2	-	72	-	55	45	-	-	-	-	<0.01	<0.02	<0.001	<0.0002	<0.001	0.003	<0.001	-	0.45	<0.0001	0.037	0.1
Sydney Metro - Central	CSM_BH04	CSM_BH04	26/09/2019	Normal	679636	8.5	430	260	-	<0.005	16	300	-	-	-	6.5	-	11	-	3.1	-	150	-	74	33	-	-	-	-	0.06	<0.02	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.18	<0.0001	0.002	<0.005
Sydney Metro - Central	CSM_BH04	CSM_BH04	17/10/2019	Normal	683453	9.6	570	290	-	<0.005	150	240	-	-	-	5.9	-	8.8	-	4.8	-	200	-	110	34	-	-	-	-	0.22	0.15	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.048	<0.0001	0.001	<0.005
Sydney Metro - Central	QC02	CSM_BH04	17/10/2019	Field_D	683453	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0002	<0.001	<0.001	<0.001	-	-	<0.0001	0.001	<0.005
Sydney Metro - Central	CSM_BH04	CSM_BH04	13/11/2019	Normal	688512	8	410	350	-	<0.005	<10	270	-	-	-	6.9	-	12	-	4.2	-	140	-	71	39	-	-	-	-	0.09	<0.02	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.33	<0.0001	0.01	<0.005
Sydney Metro - Central	QC01	CSM_BH04	13/11/2019	Interlab_D	ES1937682	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	0.0001	<0.001	<0.001	<0.001	-	-	<0.0001	0.01	<0.005
Sydney Metro - Central	CSM_BH04	CSM_BH04	17/12/2019	Normal	694466	7	140	1000	-	<0.004	<10	120	-	-	-	8.5	-	14	-	3.1	-	62	-	89	37	-	-	-	-	0.02	<0.02	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.32	<0.0001	0.021	0.014
Sydney Metro - Central	CSM_BH04	CSM_BH04	21/01/2020	Normal	698379	6.3	310	880	-	<0.004	<10	100	-	-	-	180	-	190	-	170	-	230	-	95	44	-	-	-	-	0.02	<0.02	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.37	<0.0001	0.007	0.041
Sydney Metro - Central	QC02	CSM_BH04	21/01/2020	Field_D	698379	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0002	<0.001	<0.001	<0.001	-	-	<0.0001	0.008	0.041
Sydney Metro - Central	CSM_BH04	CSM_BH04	25/02/2020	Normal	704673	7.3	310	2500	-	<0.004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.12	-	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.34	<0.0001	0.025	0.021
Sydney Metro - Central	CSM_BH04	CSM_BH04	25/02/2020	Normal	706746	-	-	-	-	-	<10	110	-	-	-	8.2	-	15	-	13	-	71	-	140	38	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	QC02	CSM_BH04	25/02/2020	Field_D	704673	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0002	<0.001	<0.001	<0.001	-	-	<0.0001	0.026	0.021
Sydney Metro - Central	CSM_BH04	CSM_BH04	18/03/2020	Normal	708508	6.3	210	1300	-	0.006	<10	100	-	-	-	10	-	17	-	5.5	-	65	-	90	38	-	-	-	-	0.11	<0.02	<0.001	<0.0002	<0.001	0.001	<0.001	-	0.33	<0.0001	0.007	0.026
Sydney Metro - Central	CSM_BH04	CSM_BH04	14/04/2020	Normal	714027	5.9	260	950	-	<0.004	<10	110	-	-	-	9.5	-	18	-	5	-	92	-	140	34	-	-	-	-	0.11	2.6	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.35	<0.0001	0.006	0.018
Sydney Metro - Central	CSM_BH04	CSM_BH04	20/05/2020	Normal	720682	6.3	260	2000	-	<0.004	<10	130	-	-	-	8.8	-	16	-	<5	-	77	-	76	35	-	-	-	-	<0.01	<0.02	<0.01	<0.002	<0.01	<0.01	<0.01	1.7	-	<0.001	0.026	<0.05
Sydney Metro - Central	CSM_BH04	CSM_BH04	18/06/2020	Normal	726825	6.8	310	450	-	<0.004	<10	200	-	-	-	<5	-	<5	-	<5	-	8.7	-	77	37	-	-	-	-	0.04	<0.02	<0.001	<0.0002	<0.001	0.005	<0.001	-	0.4	0.0001	0.033	0.085
Sydney Metro - Central	CSM_BH04	CSM_BH04	18/06/2020	Normal	ES2021404	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH04	CSM_BH04	15/07/2020	Normal	732590	6.4	430	420	-	0.005	<10	110	<20	110	-	9.1	-	16	-	5.1	-	69	-	58	46	-	-	-	-	<0.01	-	<0.001	<0.0002	<0.001	0.002	<0.001	-	0.43	<0.0001	0.038	0.018
Sydney Metro - Central	CSM_BH04	CSM_BH04	17/08/2020	Normal	738860	6.5	260	940	-	<0.004	<10	110	-	-	-	6.3	-	13	-	<5	-	51	-	71	40	-	-	-	-	<0.01	0.02	<0.001	<0.0002	<0.001	0.001	<0.001	-	0.51	<0.0001	0.048	0.039
Sydney Metro - Central	QC01	CSM_BH04	17/08/2020	Interlab_D	ES2028968	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0001	<0.001	<0.001	<0.001	-	-	<0.0001	0.043	0.035
Sydney Metro - Central	CSM_BH04	CSM_BH04	14/09/2020	Normal	744463	6.7	260	330	-	<0.004	<10	95	<20	95	73	7.4	-	13	-	<5	-	70	-	73	34	-	-	-	-	0.13	-	<0.001	<0.0002	<0.001	0.083	0.003	-	0.44	<0.0001	0.032	0.11
Sydney Metro - Central	CSM_BH05	CSM_BH05	17/04/2019	Normal	651825	-	-	-	-	<0.005	<10	230	-	-	-	30	-	23	-	6	-	140	-	130	78	-	-	-	-	<0.01	<0.02	0.002	<0.0002	<0.001	<0.001	<0.001	-	0.36	<0.0001	0.011	0.011
Sydney Metro - Central	CSM_BH05	CSM_BH05	13/05/2019	Normal	656080	8.2	560	620	-	<0.005	<10	220	-	-	-	33	-	29	-	6.2	-	130	-	190	54	-	-	-	-	<0.01	<0.02	0.001	<0.0002	<0.001	<0.001	<0.001	-	0.37	<0.0001	0.008	0.027
Sydney Metro - Central	CSM_BH05	CSM_BH05	11/06/2019	Normal	660130	7.4	520	110	-	<0.005	<10	240	-	-	-	44	-	39	-	8	-	150	-	220	50	-	-	-	-	<0.01	<0.02	<0.001	<0.0002	<0.001	0.001	<0.001	-	0.44	<0.0001	0.005	0.023
Sydney Metro - Central	CSM_BH05	CSM_BH05	29/07/2019	Normal	669059	7.2	500	930	-	0.025	<10	170	-	-	-	28	-	30	-	6.3	-	120	-	160	50	-	-	-	-	<0.01	<0.02	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.45	<0.0001	0.011	0.024
Sydney Metro - Central	CSM_BH06	CSM_BH06	18/04/2019	Normal	651825	-	-	-	-	<0.005	<10	180	-	-	-	42	-	31	-	5.6	-	110	-	180	29	-	-	-	-	<0.01	0.03	<0.001	<0.0002	<0.001	0.009	<0.001	-	0.28	<0.0001	0.014	0.032
Sydney Metro - Central	CSM_BH06	CSM_BH06	14/05/2019	Normal	656080	8	580	250	-	<0.005	<10	190	-	-	-	41	-	35	-	5.1	-	100	-	220	23	-	-	-	-	0.02	<0.02	0.002	<0.0002	<0.001	<0.001	<0.001	-	0.25	<0.0001	0.011	0.054
Sydney Metro - Central	QC02	CSM_BH06	14/05/2019	Field_D	656080	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.002	<0.0002	<0.001	<0.001	<0.001	-	-	<0.0001	0.011	0.053
Sydney Metro - Central	CSM_BH06	CSM_BH06	6/06/2019	Normal	660130	7.2	490	240	-	<0.005	<10	190	-	-	-	43	-	34	-	6.8	-	120	-	210	27	-	-	-	-	0.08	0.03	0.004	<0.0002	<0.001	<0.001	<0.001	-	0.28	<0.0001	0.02	0.05
Sydney Metro - Central	QC04	CSM_BH06	8/06/2019	Field_D	660130	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.004	<0.0002	<0.001	<0.001	<0.001	-	-	<0.0001	0.02	0.052
Sydney Metro - Central	CSM_BH06	CSM_BH06	30/07/2019	Normal	669059	7.3	600	960	-	0.029	<10	180	-	-	-	39	-	35	-	4.9	-	110	-	180	22	-	-	-	-	<0.01	<0.02	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.21	<0.0001	0.019	0.035
Sydney Metro - Central	CSM_BH06	CSM_BH06	28/08/2019	Normal	674722	8	600	810	-	<0.005	<10	210	-	-	-	41	-	34	-	5.2	-	110	-	200	22	-	-	-	-	<0.01	0.03	<0.001	<0.0002	<0.001	0.01	<0.001	-	0.23	<0.0001	0.019	0.086
Sydney Metro - Central	CSM_BH06	CSM_BH06	26/09/2019	Normal	679636	6.9	390	180	-	<0.005	<10	150	-	-	-	29	-	22	-	4.4	-	71	-	140	15	-	-	-	-	<0.01	0.09	<0.001	<0.0002	0.007	0.043	<0.001	-	0.17	<0.0001	0.036	0.094
Sydney Metro - Central	CSM_BH06	CSM_BH06	17/10/2019	Normal	683453	7.2	550	91	-	<0.005	<10	190	-	-	-	39	-	32	-	4.9	-	96	-	170	21	-	-	-	-	0.04	<0.02	<0.001	<0.0002	0.003	0.015	<0.001	-	0.36	<0.0001	0.027	0.14
Sydney Metro - Central	CSM_BH06	CSM_BH06	13/11/2019	Normal	688512	7.4	570	66	-	<0.005	<10	200	-	-	-	43	-	35	-	5.1	-	100	-	210	26	-	-	-	-	0.03	<0.02	0.001	<0.0002	<0.001	0.013	<0.001	-	0.33	<0.0001	0.053	0.024

Appendix B
Table B2
Groundwater analytical results - September 2018 to September 2020

	Inorganics			Cyanide		Acidity & Alkalinity					Major Ions														Nutrients		Metals										
	pH (Lab)	Total Dissolved Solids	Total Suspended Solids	Cyanide (Free)	Cyanide (Total)	Alkalinity (Carbonate as CaCO3)	Alkalinity (Bicarbonate as CaCO3)	Alkalinity (Hydroxide as CaCO3)	Alkalinity (total as CaCO3)	Hardness as CaCO3	Calcium	Calcium (Filtered)	Magnesium	Magnesium (Filtered)	Potassium	Potassium (Filtered)	Sodium	Sodium (Filtered)	Chloride	Sulfate	Sulfate (Filtered)	Cations Total	Anions Total	Ionic Balance	Ammonia as N	Nitrate (as N)	Arsenic (Filtered)	Cadmium (Filtered)	Chromium (III+VI) (Filtered)	Copper (Filtered)	Lead (Filtered)	Manganese	Manganese (Filtered)	Mercury (Filtered)	Nickel (Filtered)	Zinc (Filtered)
	pH units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	meq/L	meq/L	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL	0.01	5	1	0.004	0.004	1	1	1	1	5	0.5	1	0.5	1	0.5	1	0.5	1	1	2	1	0.01	0.01	0.01	0.01	0.02	0.001	0.0001	0.001	0.001	0.001	0.005	0.001	0.0001	0.001	0.005
NEPM 2013 Table 1A(4) HSL D Comm/Ind GW for Vapour Intrusion, Sand																																				
2-4m																																				
4-8m																																				
>8m																																				
NEPM 2013 Table 1C GILs, Marine Waters					0.004																				0.91			0.0007[#3]	0.0044[#4]	0.0013[#4]	0.0044[#4]			0.0001[#5]	0.007[#4]	0.015[#6]
NHMRC Recreational Guidelines 2008 - Health					***0.8***															***5000***	***5000***						***0.1***	***0.02***		***20***	***0.1***	***5***	***5***	***0.01***	***0.2***	

Site_ID	Field_ID	Location_Code	Sampled_Date_Time	Sample_Type	Lab_Report_Number																																	
Sydney Metro - Central	CSM_BH06	CSM_BH06	17/12/2019	Normal	694466	7	590	62	-	<0.004	<10	180	-	-	-	32	-	30	-	5.1	-	83	-	570	26	-	-	-	-	<0.01	<0.02	<0.001	<0.0002	<0.001	0.031	<0.001	-	0.29	<0.0001	0.026	0.054
Sydney Metro - Central	QC01	CSM_BH06	17/12/2019	Field_D	694466	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0002	<0.001	0.031	<0.001	-	-	<0.0001	0.027	0.056
Sydney Metro - Central	CSM_BH06	CSM_BH06	25/02/2020	Normal	704673	7.7	560	69	-	<0.004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.01	-	0.002	<0.0002	<0.001	0.01	<0.001	-	0.28	<0.0001	0.01	0.067
Sydney Metro - Central	CSM_BH06	CSM_BH06	25/02/2020	Normal	706746	-	-	-	-	-	<10	140	-	-	-	37	-	33	-	<5	-	120	-	590	31	-	-	-	-	-	0.02	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH06	CSM_BH06	16/03/2020	Normal	708508	6.3	430	110	-	0.005	<10	120	-	-	-	28	-	30	-	4.6	-	110	-	220	24	-	-	-	-	0.05	<0.02	0.002	<0.0002	<0.001	0.002	<0.001	-	0.34	<0.0001	0.006	0.041
Sydney Metro - Central	QC01	CSM_BH06	16/03/2020	Interlab_D	ES2009232	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.001	<0.0001	<0.001	0.006	<0.001	-	-	<0.0001	0.005	0.038
Sydney Metro - Central	CSM_BH06	CSM_BH06	14/04/2020	Normal	714027	5.9	540	86	-	<0.004	<10	150	-	-	-	41	-	39	-	6.7	-	140	-	250	28	-	-	-	-	0.07	<0.02	0.002	<0.0002	<0.001	0.005	<0.001	-	0.27	<0.0001	0.007	0.054
Sydney Metro - Central	QC01	CSM_BH06	14/04/2020	Interlab_D	ES2012716	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.002	<0.0001	0.001	0.017	<0.001	-	-	<0.0001	0.012	0.098
Sydney Metro - Central	CSM_BH06	CSM_BH06	19/05/2020	Normal	720682	6.7	390	57	-	<0.004	<10	150	-	-	-	28	-	28	-	4.2	-	100	-	180	28	-	-	-	-	0.11	<0.02	0.002	<0.0002	<0.001	0.005	<0.001	0.31	-	<0.0001	0.022	0.011
Sydney Metro - Central	CSM_BH06	CSM_BH06	18/06/2020	Normal	726825	6.6	470	210	-	<0.004	<10	180	-	-	-	<5	-	<5	-	<5	-	11	-	190	21	-	-	-	-	0.05	<0.02	0.002	<0.0002	<0.001	<0.001	<0.001	-	0.37	<0.0001	0.004	0.036
Sydney Metro - Central	CSM_BH06	CSM_BH06	18/06/2020	Normal	ES2021404	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH06	CSM_BH06	15/07/2020	Normal	732590	6.6	610	120	-	<0.004	<10	130	<20	130	-	27	-	27	-	4.5	-	110	-	240	28	-	-	-	-	<0.01	-	0.002	<0.0002	0.001	0.016	0.001	-	0.29	<0.0001	0.085	0.17
Sydney Metro - Central	CSM_BH06	CSM_BH06	18/08/2020	Normal	738860	6.6	490	97	-	<0.004	<10	120	-	-	-	20	-	23	-	<5	-	89	-	200	21	-	-	-	-	0.02	<0.02	0.002	<0.0002	<0.001	0.005	<0.001	-	0.38	<0.0001	0.015	0.056
Sydney Metro - Central	CSM_BH06	CSM_BH06	14/09/2020	Normal	744463	7	440	200	-	<0.004	<10	86	<20	86	140	20	-	22	-	<5	-	96	-	200	20	-	-	-	-	0.09	-	0.002	<0.0002	<0.001	0.002	<0.001	-	0.4	<0.0001	0.017	0.043
Sydney Metro - Central	CSM_BH08	CSM_BH08	18/04/2019	Normal	651825	-	-	-	-	<0.005	<10	120	-	-	-	13	-	16	-	4.1	-	79	-	93	41	-	-	-	-	0.06	<0.02	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.34	<0.0001	0.007	0.02
Sydney Metro - Central	QC02	CSM_BH08	18/04/2019	Field_D	651825	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0002	<0.001	<0.001	<0.001	-	-	<0.0001	0.007	0.015
Sydney Metro - Central	CSM_BH08	CSM_BH08	15/05/2019	Normal	656080	7.9	310	180	-	<0.005	<10	120	-	-	-	11	-	16	-	3.3	-	71	-	92	42	-	-	-	-	<0.01	<0.02	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.3	<0.0001	0.003	0.015
Sydney Metro - Central	CSM_BH08	CSM_BH08	6/06/2019	Normal	660130	7.2	250	73	-	<0.005	<10	110	-	-	-	49	-	28	-	11	-	71	-	90	42	-	-	-	-	<0.01	<0.02	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.37	<0.0001	0.006	0.041
Sydney Metro - Central	QC03	CSM_BH08	6/06/2019	Interlab_D	ES1917968	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0001	<0.001	<0.001	<0.001	-	-	<0.0001	0.006	0.034
Sydney Metro - Central	CSM_BH08	CSM_BH08	30/07/2019	Normal	669059	7.3	350	6.2	-	0.019	<10	190	-	-	-	19	-	22	-	4.4	-	83	-	110	37	-	-	-	-	0.02	0.06	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.34	<0.0001	0.021	0.011
Sydney Metro - Central	CSM_BH08	CSM_BH08	29/08/2019	Normal	674722	7.4	420	34	-	<0.005	<10	160	-	-	-	17	-	23	-	4.3	-	93	-	110	32	-	-	-	-	0.03	<0.02	<0.001	<0.0002	<0.001	0.021	<0.001	-	0.4	<0.0001	0.016	0.16
Sydney Metro - Central	CSM_BH08	CSM_BH08	26/09/2019	Normal	679636	7.2	280	35	-	<0.005	<10	130	-	-	-	11	-	17	-	3.1	-	78	-	94	41	-	-	-	-	0.02	<0.02	<0.001	<0.0002	<0.001	0.001	<0.001	-	0.32	<0.0001	0.002	0.014
Sydney Metro - Central	CSM_BH08	CSM_BH08	18/10/2019	Normal	683453	7.5	330	9.4	-	<0.005	<10	99	-	-	-	11	-	15	-	3.4	-	75	-	120	43	-	-	-	-	0.03	0.02	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.3	<0.0001	0.003	0.013
Sydney Metro - Central	CSM_BH08	CSM_BH08	13/11/2019	Normal	688512	7.5	310	5.9	-	<0.005	<10	100	-	-	-	11	-	15	-	3.5	-	77	-	100	43	-	-	-	-	0.01	0.03	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.29	<0.0001	0.007	<0.005
Sydney Metro - Central	CSM_BH08	CSM_BH08	16/12/2019	Normal	694466	7.1	250	8.8	-	<0.004	<10	110	-	-	-	11	-	13	-	3.7	-	59	-	110	48	-	-	-	-	<0.01	0.1	<0.001	<0.0002	<0.001	0.005	<0.001	-	0.25	<0.0001	0.008	0.032
Sydney Metro - Central	CSM_BH08	CSM_BH08	21/01/2020	Normal	698379	6.4	260	10	-	<0.004	<10	110	-	-	-	9.5	-	14	-	3.1	-	68	-	160	47	-	-	-	-	<0.01	<0.02	<0.001	<0.0002	<0.001	0.001	<0.001	-	0.31	<0.0001	0.003	0.022
Sydney Metro - Central	CSM_BH08	CSM_BH08	25/02/2020	Normal	704673	6.7	340	15	-	<0.004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.01	-	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.29	<0.0001	0.001	0.015
Sydney Metro - Central	CSM_BH08	CSM_BH08	25/02/2020	Normal	706746	-	-	-	-	-	<10	110	-	-	-	12	-	16	-	<5	-	84	-	93	45	-	-	-	-	-	0.05	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH08	CSM_BH08	18/03/2020	Normal	708508	6.4	270	130	-	0.005	<10	85	-	-	-	8.9	-	14	-	3.4	-	77	-	92	45	-	-	-	-	0.08	0.03	<0.001	<0.0002	<0.001	0.001	<0.001	-	0.29	<0.0001	0.002	0.028
Sydney Metro - Central	CSM_BH08	CSM_BH08	14/04/2020	Normal	714027	6	300	120	-	<0.004	<10	120	-	-	-	12	-	17	-	6.4	-	95	-	120	40	-	-	-	-	0.08	0.2	<0.001	<0.0002	<0.001	0.002	<0.001	-	0.31	<0.0001	0.002	0.019
Sydney Metro - Central	CSM_BH08	CSM_BH08	18/05/2020	Normal	720682	6.4	230	11	-	<0.004	<10	100	-	-	-	9	-	13	-	3.1	-	72	-	79	42	-	-	-	-	0.02	0.07	<0.001	<0.0002	<0.001	0.007	<0.001	0.29	-	<0.0001	0.005	0.015
Sydney Metro - Central	QC01	CSM_BH08	18/05/2020	Interlab_D	ES2017182	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0001	<0.001	0.002	<0.001	-	-	<0.0001	0.005	0.023
Sydney Metro - Central	CSM_BH08	CSM_BH08	17/06/2020	Normal	726825	6.7	290	290	-	<0.004	<10	140	-	-	-	<5	-	<5	-	<5	-	6.6	-	49	120	-	-	-	-	0.03	0.27	<0.001	<0.0002	<0.001	0.002	<0.001	-	0.29	<0.0001	0.014	0.02
Sydney Metro - Central	CSM_BH08	CSM_BH08	17/06/2020	Normal	ES2021404	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	QC01	CSM_BH08	17/06/2020	Interlab_D	ES2021404	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0001	<0.001	<0.001	<0.001	-	-	<0.0001	0.01	0.016
Sydney Metro - Central	CSM_BH08	CSM_BH08	15/07/2020	Normal	732590	6.9	410	17	-	<0.004	<10	150	<20	150	-	14	-	18	-	3.7	-	79	-	90	46	-	-	-	-	0.03	-	<0.001	<0.0002	<0.001	0.009	<0.001	-	0.25	<0.0001	0.015	0.034
Sydney Metro - Central	QC01	CSM_BH08	15/07/2020	Interlab_D	ES2024606	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0001	<0.001	<0.001	<0.001	-	-	<0.0001	0.016	<0.005
Sydney Metro - Central	CSM_BH08	CSM_BH08	19/08/2020	Normal	738860	6.7	290	6.7	-	<0.004	<10	120	-	-	-	9.4	-	12	-	<5	-	61	-	84	46	-	-	-	-	0.02	0.35	<0.001	<0.0002	<0.001	0.005	<0.001	-	0.31	<0.0001	0.004	0.015
Sydney Metro - Central	CSM_BH08	CSM_BH08	14/09/2020	Normal	744463	6.9	280	14	-	<0.004	<10	94	<20	94	71	8.3	-	12	-	<5	-	67	-	84	48	-	-	-	-	0.19	-	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.3	<0.0001	0.004	0.012
Sydney Metro - Central	QC01	CSM_BH08	14/09/2020	Interlab_D	ES2032425	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0001	<0.001	<0.001	<0.001	-	-	<0.0001	0.002	<0.005
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	17/04/2019	Normal	651825	-	-	-	-	<0.005	<10	38	-	-	-	13	-	11	-	7.1	-	120	-	79	270	-	-	-	-	0.2	0.59	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.83	<0.0001	0.009	0.042
Sydney Metro - Central	QC01	CSM_BH09S	17/04/2019	Interlab_D	ES1912362	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0001	<0.001	<0.001	<0.001	-	-	<0.0001	0.008	0.042
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	13/05/2019	Normal	656080	7.4	460	66	-	<0.005	<10	76	-	-	-	6.2	-	7.3	-	4.5	-	100	-	57	190	-	-	-	-	0.1	<0.02	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.54	<0.0001	0.004	0.019
Sydney Metro - Central	QC01	CSM_BH09S	13/05/2019	Interlab_D	ES1914810	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0001	<0.001	<0.001	<0.001	-	-	<0.0001	0.005	0.018
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	11/06/2019	Normal	660130	6.6	390	46	-	<0.005	<10	66	-	-	-	12	-	8.7	-	7.2	-	130	-	72	210	-	-	-	-	0.1	0.31	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.78	<0.0001	0.009	0.054
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	29/07/2019	Normal	669059	6.7	460	58	-	0.01	<10	59	-	-	-	7.8	-	8.5	-	4.7	-	120	-	88	210	-	-	-	-	0.08	<0.02	<0.001	<0.0002	<0.001	0.002	<0.001	-	0.64	<0.0001	0.006	0.036
Sydney Metro - Central	QC01	CSM_BH09S	29/07/2019	Interlab_D	ES1924197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0001	<0.001	0.005	<0.001	-	-	<0.0001	0.007	0.04
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	28/08/2019	Normal	674722	6.8	440	87	-	<0.005	<10	61	-	-	-	5.1	-	6.6	-	3.6	-	110	-	49	160	-	-	-	-	0.04	<0.02	<0.001	<0.0002	<0.001	0.001	<0.001	-	0.65	<0.0001	0.008	0.045
Sydney Metro - Central	QC01	CSM_BH09S	28/08/2019	Interlab_D	EM1914568	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0001	<0.001	<0.001	<0.001	-	-	<0.0001	0.009	0.041
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	25/09/2019	Normal	679636	6.6	390	49	-	<0.005	<10	49	-	-	-	6.4	-	7.9	-	3.4	-	120	-	56	220	-	-	-	-	0.03	0.32	<0.001	<0.0002	<0.001	0.002	<0.001	-	0.79	<0.0001	0.009	0.056
Sydney Metro - Central	QC01	CSM_BH09S	25/09/2019	Interlab_D	ES1931406	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0001	<0.001	0.001	<0.001	-	-	<0.0001	0.008	0.048
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	16/10/2019	Normal	683453	6.7	420	37	-	<0.005	<10	39	-	-	-	6.1	-	8	-	3.5	-	110	-	100	200	-	-	-	-	0.02	0.18	<0.001	<0.0002	<0.001	0.002	<0.001	-	0.87	<0.0001	0.009	0.04
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	14/11/2019	Normal	688512	7	400	55	-	<0.005	<10	55	-	-	-	5.5	-	8.4	-	3.4	-	110	-	65	180	-	-	-	-	0.03	<0.02	<0.001	<0.0002	<0.001	0.002	<0.001	-	0.88	<0.0001	0.008	0.041
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	16/12/2019	Normal	694466	6.7	380	48	-	<0.004	<10	75	-	-	-	4.1	-	6.7	-	2.7	-	88	-	48	150	-	-	-	-	<0.01	<0.02	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.73	<0.0001	0.006	0.031
Sydney Metro - Central	QC02	CSM_BH09S	16/12/2019	Interlab_D	ES1941823	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0001	<0.001	<0.001	<0.001	-	-	<0.0001	0.006	0.037
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	21/01/2020	Normal	698379	6.1	340	28	-	<0.004	<10	77	-	-	-	3.7	-	6.2	-	2.6	-	97	-	46	160	-	-	-	-	0.05	0.02	<0.001	<0.0002	<0.001	0.002	<0.001	-	0.71	<0.0001	0.004	0.023
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	24/02/2020	Normal	704673	7.1	370	21	-	<0.004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05	-	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.6	<0.0001	0.002	0.014
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	24/02/2020	Normal	706746	-	-	-	-	-	<10	76	-	-	-	3.3	-	6.4	-	<5	-	110	-	52	150	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	QC01	CSM_BH09S	24/02/2020	Interlab_D	ES2006512	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0001	<0.001	<0.001	<0.001	-	-	<0.0001	0.003	0.011
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	17/03/2020	Normal	708508	6.1	330	59	-	0.005	<10	60	-	-	-	3.3	-	6.9	-	3	-	100	-	46	120	-	-	-	-	0.05	<0.02	0.001	<0.0002	<0.001	0.009	<0.001	-	0.67	<0.0001	0.008	0.047
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	16/04/2020	Normal	714027	5.8	320	74	-	<0.004	<10	79	-	-	-	4	-	8	-	5.1	-	130	-	59	130	-	-	-	-	0.07	<0.02	<0.001	<0.0002	<0.001	0.001	<0.001	-	0.82	<0.0001	0.005	0.028

Appendix B
Table B2
Groundwater analytical results - September 2018 to September 2020

						Inorganics			Cyanide		Acidity & Alkalinity					Major Ions																Nutrients		Metals									
						pH (Lab)	Total Dissolved Solids	Total Suspended Solids	Cyanide (Free)	Cyanide (Total)	Alkalinity (Carbonate as CaCO3)	Alkalinity (Bicarbonate as CaCO3)	Alkalinity (Hydroxide as CaCO3)	Alkalinity (total as CaCO3)	Hardness as CaCO3	Calcium	Calcium (Filtered)	Magnesium	Magnesium (Filtered)	Potassium	Potassium (Filtered)	Sodium	Sodium (Filtered)	Chloride	Sulfate	Sulfate (Filtered)	Cations Total	Anions Total	Ionic Balance	Ammonia as N	Nitrate (as N)	Arsenic (Filtered)	Cadmium (Filtered)	Chromium (III+VI) (Filtered)	Copper (Filtered)	Lead (Filtered)	Manganese	Manganese (Filtered)	Mercury (Filtered)	Nickel (Filtered)	Zinc (Filtered)
						pH units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	meq/L	meq/L	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL						0.01	5	1	0.004	0.004	1	1	1	1	5	0.5	1	0.5	1	0.5	1	0.5	1	1	2	1	0.01	0.01	0.01	0.01	0.02	0.001	0.0001	0.001	0.001	0.001	0.005	0.001	0.0001	0.001	0.005
NEPM 2013 Table 1A(4) HSL D Comm/Ind GW for Vapour Intrusion, Sand																																								
2-4m																																								
4-8m																																								
>8m																																								
NEPM 2013 Table 1C GILs, Marine Waters										0.004																				0.91			0.0007[#3]	0.0044[#4]	0.0013[#4]	0.0044[#4]			0.0001[#5]	0.007[#4]	0.015[#6]
NHMRC Recreational Guidelines 2008 - Health										***0.8***														***5000***	***5000***					***0.1***	***0.02***		***20***	***0.1***	***5***	***5***	***0.01***	***0.2***	
Site_ID	**Field_ID**	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**	**Lab_Report_Number**																																			
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	20/05/2020	Normal	679636	6.6	150	140	-	<0.005	<10	25	-	-	-	3.9	-	5.4	-	2.3	-	34	-	20	56	-	-	-	-	0.01	1.8	<0.001	<0.0002	<0.001	0.001	<0.001	-	0.51	<0.0001	0.002	0.009
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	19/06/2020	Normal	726825	6.6	320	53	-	<0.004	<10	100	-	-	-	<5	-	6.1	-	<5	-	110	-	48	120	-	-	-	-	0.05	<0.02	<0.001	<0.0002	<0.001	0.01	<0.001	-	0.7	<0.0001	0.009	0.058
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	19/06/2020	Normal	ES2021404	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	16/07/2020	Normal	732590	6.4	420	190	-	0.014	<10	87	<20	87	-	3.6	-	7.6	-	3.5	-	110	-	49	130	-	-	-	-	<0.01	-	<0.001	<0.0002	<0.001	0.002	<0.001	-	0.8	<0.0001	0.007	0.025
Sydney Metro - Central	QC02	CSM_BH09S	16/07/2020	Field_D	732590	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0002	<0.001	<0.001	<0.001	-	-	<0.0001	0.007	0.025
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	18/08/2020	Normal	738860	6.4	360	57	-	<0.004	<10	59	-	-	-	<5	-	6.1	-	<5	-	83	-	52	140	-	-	-	-	0.03	<0.02	<0.001	<0.0002	<0.001	0.002	<0.001	-	1.2	<0.0001	0.011	0.051
Sydney Metro - Central	QC02	CSM_BH09S	18/08/2020	Field_D	738860	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0002	<0.001	0.001	<0.001	-	-	<0.0001	0.011	0.051
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	16/09/2020	Normal	744463	6.5	350	91	-	<0.004	<10	59	<20	59	35	<5	-	6.4	-	<5	-	89	-	51	130	-	-	-	-	0.05	-	<0.001	<0.0002	<0.001	0.015	<0.001	-	0.89	<0.0001	0.006	0.031
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	16/04/2019	Normal	651825	-	-	-	-	<0.005	<10	23	-	-	-	3.4	-	5.5	-	3.1	-	49	-	38	85	-	-	-	-	<0.01	1.6	<0.001	<0.0002	<0.001	0.002	<0.001	-	0.52	<0.0001	0.002	0.006
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	13/05/2019	Normal	656080	6.6	270	210	-	<0.005	<10	<20	-	-	-	4	-	5.6	-	3.3	-	45	-	130	350	-	-	-	-	<0.01	1.7	<0.001	<0.0002	<0.001	0.003	<0.001	-	0.43	<0.0001	0.002	0.011
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	11/06/2019	Normal	660130	5.9	140	210	-	<0.005	<10	<20	-	-	-	3.7	-	6.1	-	4.8	-	42	-	37	66	-	-	-	-	0.06	2.3	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.49	<0.0001	0.001	0.006
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	30/07/2019	Normal	669059	6.7	220	200	-	0.014	<10	35	-	-	-	6.9	-	6.4	-	3.6	-	38	-	36	61	-	-	-	-	<0.01	2.3	<0.001	<0.0002	<0.001	0.003	<0.001	-	0.41	<0.0001	0.002	0.011
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	29/08/2019	Normal	674722	6.1	240	170	-	<0.005	<10	20	-	-	-	3.9	-	5.5	-	2.9	-	39	-	19	57	-	-	-	-	<0.01	2	<0.001	<0.0002	<0.001	0.004	<0.001	-	0.48	<0.0001	0.002	0.014
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	25/09/2019	Normal	679636	6.6	150	140	-	<0.005	<10	25	-	-	-	3.9	-	5.4	-	2.3	-	34	-	20	56	-	-	-	-	<0.01	1.8	<0.001	<0.0002	<0.001	0.001	<0.001	-	0.51	<0.0001	0.002	0.009
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	16/10/2019	Normal	683453	6.5	190	210	-	<0.005	<10	20	-	-	-	3.5	-	5.3	-	2.5	-	34	-	70	55	-	-	-	-	<0.01	1.6	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.53	<0.0001	0.002	<0.005
Sydney Metro - Central	QC01	CSM_BH10S	16/10/2019	Interlab_D	ES1934142	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0001	<0.001	<0.001	<0.001	-	-	<0.0001	0.001	<0.005
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	14/11/2019	Normal	688512	6.2	170	69	-	<0.005	<10	<20	-	-	-	3.4	-	5.1	-	2.3	-	35	-	45	56	-	-	-	-	<0.01	1.1	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.47	<0.0001	0.002	<0.005
Sydney Metro - Central	QC02	CSM_BH10S	14/11/2019	Field_D	688512	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0002	<0.001	<0.001	<0.001	-	-	<0.0001	0.002	<0.005
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	17/12/2019	Normal	694466	6.1	200	260	-	<0.004	<10	21	-	-	-	3.2	-	4.6	-	2.3	-	18	-	16	54	-	-	-	-	<0.01	0.89	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.45	<0.0001	0.002	0.006
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	20/01/2020	Normal	698379	6	160	77	-	<0.004	<10	<20	-	-	-	2.9	-	4.6	-	2.1	-	27	-	16	55	-	-	-	-	0.02	0.93	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.49	<0.0001	0.001	<0.005
Sydney Metro - Central	QC01	CSM_BH10S	20/01/2020	Interlab_D	ES2001825	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0001	<0.001	<0.001	<0.001	-	-	<0.0001	<0.001	<0.005
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	25/02/2020	Normal	704673	6.7	200	97	-	<0.004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.01	-	<0.001	<0.0002	<0.001	0.003	<0.001	-	0.51	<0.0001	<0.001	<0.005
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	25/02/2020	Normal	706746	-	-	-	-	-	<10	22	-	-	-	<5	-	6.6	-	<5	-	34	-	24	55	-	-	-	-	-	1.5	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	17/03/2020	Normal	708508	5.7	170	53	-	0.005	<10	25	-	-	-	4.4	-	6	-	3	-	31	-	23	58	-	-	-	-	0.03	1.7	<0.001	<0.0002	<0.001	0.001	<0.001	-	0.54	<0.0001	0.002	<0.005
Sydney Metro - Central	QC02	CSM_BH10S	17/03/2020	Field_D	708508	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.001	<0.0002	<0.001	<0.001	<0.001	-	-	<0.0001	0.002	<0.005
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	15/04/2020	Normal	714027	7.4	180	44	-	<0.004	<10	67	-	-	-	18	-	7.5	-	6	-	40	-	33	47	-	-	-	-	0.02	1.8	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.46	<0.0001	<0.001	<0.005
Sydney Metro - Central	QC02	CSM_BH10S	15/04/2020	Field_D	714027	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0002	<0.001	<0.001	<0.001	-	-	<0.0001	<0.001	<0.005
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	18/05/2020	Normal	720682	6.3	150	160	-	<0.004	<10	57	-	-	-	13	-	6	-	3.1	-	30	-	19	51	-	-	-	-	0.01	2.1	<0.001	<0.0002	<0.001	0.003	<0.001	0.5	-	<0.0001	0.001	<0.005
Sydney Metro - Central	QC02	CSM_BH10S	20/05/2020	Field_D	720682	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.01	<0.002	<0.01	0.011	<0.01	-	-	<0.001	<0.01	<0.05
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	19/06/2020	Normal	726825	6.7	240	150	-	<0.004	<10	130	-	-	-	30	-	7.9	-	5.2	-	33	-	23	49	-	-	-	-	0.01	3.8	<0.001	<0.0002	<0.001	0.022	0.001	-	0.41	<0.0001	0.008	0.059
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	19/06/2020	Normal	ES2021404	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	15/07/2020	Normal	732590	5.9	210	360	-	0.007	<10	34	<20	34	-	12	-	14	-	9.9	-	32	-	22	56	-	-	-	-	0.06	-	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.43	<0.0001	0.014	0.006
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	17/08/2020	Normal	738860	6.1	180	920	-	<0.004	<10	40	-	-	-	6.5	-	5.5	-	<5	-	27	-	23	62	-	-	-	-	<0.01	2.1	<0.001	<0.0002	<0.001	0.011	<0.001	-	0.6	<0.0001	0.003	0.009
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	15/09/2020	Normal	744463	6.3	170	270	-	<0.004	<10	22	<20	22	32	<5	-	5.3	-	<5	-	35	-	23	62	-	-	-	-	0.08	-	<0.001	<0.0002	<0.001	0.088	0.003	-	0.51	<0.0001	0.01	0.086
Sydney Metro - Central	GASW_BH10	GASW_BH10	5/06/2019	Normal	659250	7.8	560	84	-	0.005	<10	310	<20	310	-	44	-	34	-	18	-	130	-	150	42	-	-	-	-	0.02	-	0.002	<0.0002	<0.001	<0.001	<0.001	-	0.049	<0.0001	0.007	<0.005
Sydney Metro - Central	GASW_BH10	GASW_BH10	30/07/2019	Normal	669059	7	610	150	-	<0.005	<10	330	-	-	-	48	-	43	-	9.7	-	130	-	160	<5	-	-	-	-	<0.01	<0.02	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.25	<0.0001	0.042	<0.005
Sydney Metro - Central	GASW_BH10	GASW_BH10	28/08/2019	Normal	674722	7.7	1100	260	-	<0.005	<10	440	-	-	-	41	-	40	-	29	-	150	-	170	<5	-	-	-	-	0.16	<0.02	0.002	<0.0002	<0.001	<0.001	<0.001	-	0.32	<0.0001	0.043	0.029
Sydney Metro - Central	GASW_BH10	GASW_BH10	26/09/2019	Normal	679636	7.4	920	290	-	<0.005	<10	450	-	-	-	71	-	52	-	15	-	150	-	180	<5	-	-	-	-	<0.01	<0.02	0.001	<0.0002	<0.001	<0.001	<0.001	-	0.48	<0.0001	0.026	0.015
Sydney Metro - Central	GASW_BH10	GASW_BH10	17/10/2019	Normal	683453	7.4	830	280	-	<0.005	<10	370	-	-	-	67	-	47	-	9.4	-	130	-	170	<5	-	-	-	-	<0.01	<0.02	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.38	<0.0001	0.031	0.01
Sydney Metro - Central	GASW_BH10	GASW_BH10	13/11/2019	Normal	688512	7.1	930	200	-	<0.005	<10	440	-	-	-	82	-	58	-	15	-	150	-	730	<5	-	-	-	-	<0.01	<0.02	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.49	0.0002	0.018	<0.005
Sydney Metro - Central	GASW_BH10	GASW_BH10	16/12/2019	Normal	694466	6.7	1200	64	-	<0.004	<10	520	-	-	-	88	-	67	-	14	-	140	-	110	<5	-	-	-	-	0.05	<0.02	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.67	<0.0001	0.03	0.026
Sydney Metro - Central	GASW_BH10	GASW_BH10	21/01/2020	Normal	698379	6.8	890	170	-	<0.004	<10	560	-	-	-	110	-	72	-	17	-	150	-	910	<5	-	-	-	-	0.01	<0.02	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.7	<0.0001	0.029	0.013
Sydney Metro - Central	GASW_BH10	GASW_BH10	24/02/2020	Normal	704673	7.8	1100	85	-	<0.004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02	-	0.001	<0.0002	<0.001	<0.001	<0.001	-	0.46	<0.0001	0.021	0.015
Sydney Metro - Central	GASW_BH10	GASW_BH10	24/02/2020	Normal	706746	-	-	-	-	-	<10	530	-	-	-	95	-	54	-	21	-	170	-	200	<5	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH10	GASW_BH10	18/03/2020	Normal	708508	6.5	1000	250	-	0.005	<10	460	-	-	-	98	-	56	-	15	-	140	-	190	<2	-	-	-	-	0.02	<0.02	0.002	<0.0002	<0.001	<0.001	<0.001	-	0.39	<0.0001	0.018	0.015
Sydney Metro - Central	GASW_BH10	GASW_BH10	14/04/2020	Normal	714027	6.4	950	240	-	<0.004	<10	490	-	-	-	110	-	66	-	17	-	180	-	360	<5	-	-	-	-	0.1	<0.02	<0.001	<0.0002	<0.001	0.001	<0.001	-	0.36	<0.0001	0.038	0.049
Sydney Metro - Central	GASW_BH10	GASW_BH10	19/05/2020	Normal	720682	7	760	980	-	<0.004	<10	580	-	-	-	100	-	65	-	14	-	160	-	160	<5	-	-	-	-	<0.01	<0.02	<0.01	<0.002	<0.01	<0.01	<0.01	0.5	-	<0.001	0.036	<0.05
Sydney Metro - Central	GASW_BH10	GASW_BH10	18/06/2020	Normal	726825	6.6	840	590	-	<0.004	<10	950	-	-	-	94	-	62	-	12	-	150	-	190	<5	-	-	-	-	<0.01	<0.02	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.29	<0.0001	0.026	0.03
Sydney Metro - Central	GASW_BH10	GASW_BH10	15/07/2020	Normal	732590	6.9	840	570	-	<0.004	<10	630	<20	630	-	110	-	69	-	14	-	150	-	190	5.4	-	-	-	-	<0.01	-	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.22	<0.0001	0.01	0.006
Sydney Metro - Central	GASW_BH10	GASW_BH10	17/08/2020	Normal	738860	7	880	430	-	<0.004	<10	650	-	-	-	78	-	51	-	9.1	-	110	-	180	<5	-	-	-	-	<0.01	<0.02	<0.001	<0.0002	<0.001	0.002	<0.001	-	0.25	0.0004	0.031	0.02
Sydney Metro - Central	GASW_BH10	GASW_BH10	14/09/2020	Normal	744463	7.2	760	390	-	<0.004	<10	530	<20	530	420	83	-	50	-	9	-	120	-	190	<5	-	-	-	-	0.05	-	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.21	0.0002	0.018	0.008
Sydney Metro - Central	GASW_BH11	GASW_BH11	5/06/2019	Normal	659250	6.1	210	300	-	0.013	<10	71	<20	71	-	5.1	-	8	-	2.7	-	57	-	43	42	-	-	-	-	<0.01	-	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.2	<0.0001	0.002	0.022
Sydney Metro - Central	QC02	GASW_BH11	5/06/2019	Field_D	659250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0002	<0.001	<0.001	<0.001	-	-	<0.0001	0.002	0.022
Sydney Metro - Central	GASW_BH11	GASW_BH11	30/07/2019	Normal	669059	6.3	210	44	-	<0.005	<10	70	-	-	-	4.4	-	8.4	-	2	-	56	-	100	59	-	-	-	-	0.03	<0.02	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.2	<0.0001	0.002	0.007
Sydney Metro - Central	GASW_BH11	GASW_BH11	28/08/2019	Normal	674722	6.6	250	22	-	<0.005	<10	55	-	-	-	5.3	-	7.1	-	1.7	-	52	-	39	48	-	-	-	-	0.01	<0.02	<0.001	<0.0002	<0.001	0.003	<0.001	-	0.23	<0.0001	0.002	0.016
Sydney Metro - Central	GASW_BH11	GASW_BH11	25/09/2019	Normal	679636	6.3	130	28	-	<0.005	<10	41	-	-	-	4.7	-	6.7	-	1.3	-	45	-	37	46	-	-	-	-	0.03	<0.02	<0.001	<0.0002	<0.001	0.003	<0.001	-	0.25	<0.0001	0.002	0.016
Sydney Metro - Central	GASW_BH11	GASW_BH11	16/10/2019	Normal	683453	6.5	200	11	-	<0.005	<10	37	-	-	-	4.5	-	6.3	-	1.4	-	46	-	74	50	-	-	-	-	0.04	<0.02	<0.001	<0.0002	<0.001	0.003	<0.001	-	0.23	<0.0001	0.003	0.011
Sydney Metro - Central	GASW_BH11	GASW_BH11	14/11/2019	Normal	688512	6.5	170	1600	-	<0.005	<10	53	-	-	-	5	-	7	-	1.9	-	50	-	97	51	-	-	-	-	0.02	<0.02	<0.001	<0.0002	<0.001	0.001	<0.001	-	0.2	<0.0001	0.002	0.012
Sydney Metro - Central	GASW_BH11	GASW_BH11	16/12/2019	Normal	694466	6.2	180	28	-	<0.004	<10	55	-	-	-	4.1	-	6	-	1.6	-	48	-	68	54	-	-	-	-	<0.01	<0.02	<0.001	<0.0002	<0.001	0.005	<0.001	-	0.16	<0.0001	0.003	0.024
Sydney Metro - Central	GASW_BH11	GASW_BH11	22/01/2020	Normal	698379	6.1	180	120	-	<0.004	<10	38	-	-	-	7.7	-	4.7	-	1.6	-	38	-	81	52	-	-	-	-	0.02	<0.02	<0.001	<0.0002	<0.001	0.002	<0.001	-	0.15	<0.0001	<0.001	0.021
Sydney Metro - Central	GASW_BH11	GASW_BH11	24/02/2020	Normal	704673	6.8	290	200	-	<0.004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.08	-	0.001	<0.0002	<0.001	0.003	<0.001	-	0.32	<0.0001	<0.001	0.036

Appendix B
Table B2
Groundwater analytical results - September 2018 to September 2020

	Inorganics			Cyanide		Acidity & Alkalinity					Major Ions														Nutrients		Metals									
	pH (Lab)	Total Dissolved Solids	Total Suspended Solids	Cyanide (Free)	Cyanide (Total)	Alkalinity (Carbonate as CaCO3)	Alkalinity (Bicarbonate as CaCO3)	Alkalinity (Hydroxide as CaCO3)	Alkalinity (total as CaCO3)	Hardness as CaCO3	Calcium	Calcium (Filtered)	Magnesium	Magnesium (Filtered)	Potassium	Potassium (Filtered)	Sodium	Sodium (Filtered)	Chloride	Sulfate	Sulfate (Filtered)	Cations Total	Anions Total	Ionic Balance	Ammonia as N	Nitrate (as N)	Arsenic (Filtered)	Cadmium (Filtered)	Chromium (III+VI) (Filtered)	Copper (Filtered)	Lead (Filtered)	Manganese	Manganese (Filtered)	Mercury (Filtered)	Nickel (Filtered)	Zinc (Filtered)
	pH units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	meq/L	meq/L	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL	0.01	5	1	0.004	0.004	1	1	1	1	5	0.5	1	0.5	1	0.5	1	0.5	1	1	2	1	0.01	0.01	0.01	0.01	0.02	0.001	0.0001	0.001	0.001	0.001	0.005	0.001	0.0001	0.001	0.005
NEPM 2013 Table 1A(4) HSL D Comm/Ind GW for Vapour Intrusion, Sand																																				
2-4m																																				
4-8m																																				
>8m																																				
NEPM 2013 Table 1C GILs, Marine Waters					0.004																				0.91			0.0007[#3]	0.0044[#4]	0.0013[#4]	0.0044[#4]			0.0001[#5]	0.007[#4]	0.015[#6]
NHMRC Recreational Guidelines 2008 - Health					***0.8***															***5000***	***5000***						***0.1***	***0.02***		***20***	***0.1***	***5***	***5***	***0.01***	***0.2***	

Site_ID	Field_ID	Location_Code	Sampled_Date_Time	Sample_Type	Lab_Report_Number																																
Sydney Metro - Central	GASW_BH11	GASW_BH11	24/02/2020	Normal	706746	-	-	-	-	-	<10	96	-	-	-	27	-	6.1	-	<5	-	34	-	44	48	-	-	-	-	-	0.02	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH11	GASW_BH11	17/03/2020	Normal	708508	6	190	300	-	0.005	<10	240	-	-	-	15	-	6.3	-	3.3	-	41	-	44	44	-	-	-	-	0.06	<0.02	0.002	<0.0002	<0.001	0.013	<0.001	-	0.16	<0.0001	0.007	0.062
Sydney Metro - Central	GASW_BH11	GASW_BH11	16/04/2020	Normal	714027	6.3	320	8000	-	<0.004	<10	270	-	-	-	26	-	6.7	-	4.9	-	49	-	77	39	-	-	-	-	0.26	<0.02	0.002	<0.0002	<0.001	0.012	<0.001	-	0.31	<0.0001	0.006	0.086
Sydney Metro - Central	GASW_BH11	GASW_BH11	20/05/2020	Normal	720682	6.8	270	1800	-	<0.004	<10	200	-	-	-	27	-	6.9	-	<5	-	47	-	35	46	-	-	-	-	0.32	<0.02	<0.01	<0.002	<0.01	0.015	<0.01	1.1	-	<0.001	0.017	0.12
Sydney Metro - Central	GASW_BH11	GASW_BH11	19/06/2020	Normal	726825	6.6	220	1200	-	<0.004	<10	96	-	-	-	7.4	-	5.5	-	<5	-	44	-	36	42	-	-	-	-	0.08	0.05	<0.001	<0.0002	<0.001	0.011	0.001	-	0.2	<0.0001	0.007	0.11
Sydney Metro - Central	GASW_BH11	GASW_BH11	16/07/2020	Normal	732590	6.3	650	2100	-	<0.004	<10	47	<20	47	-	18	-	13	-	6.2	-	45	-	39	51	-	-	-	-	0.02	-	0.002	<0.0002	<0.001	0.084	0.001	-	0.18	<0.0001	0.011	0.09
Sydney Metro - Central	GASW_BH11	GASW_BH11	17/08/2020	Normal	738860	6.9	220	3900	-	<0.004	<10	170	-	-	-	14	-	<5	-	<5	-	27	-	27	25	-	-	-	-	0.06	0.03	<0.001	<0.0002	<0.001	0.015	<0.001	-	0.21	<0.0001	0.005	0.059
Sydney Metro - Central	GASW_BH11	GASW_BH11	16/09/2020	Normal	744463	6.7	260	6100	-	<0.004	<10	120	<20	120	43	8.6	-	5.3	-	<5	-	37	-	37	45	-	-	-	-	0.12	-	<0.001	<0.0002	<0.001	0.01	<0.001	-	0.23	<0.0001	0.004	0.064
Sydney Metro - Central	BH23	GASW_BH23	23/08/2019	Normal	ES1926979	7.34	719	484	<0.004	0.081	<1	139	<1	139	-	-	139	-	8	-	30	-	56	19	-	389	10.8	11.4	2.77	0.86	-	0.006	<0.0001	<0.001	<0.001	<0.001	-	0.028	<0.0001	0.002	<0.005
Sydney Metro - Central	GW-BR1	GASW_BH23	23/08/2019	Field_D	ES1926979	7.68	678	1200	0.005	0.109	<1	129	<1	129	-	-	137	-	10	-	29	-	54	20	-	327	10.7	9.95	3.86	0.87	-	0.004	<0.0001	<0.001	<0.001	0.001	-	0.06	<0.0001	0.001	<0.005
Sydney Metro - Central	GASW_BH23	GASW_BH23	25/09/2019	Normal	679636	7.6	640	480	-	<0.005	<10	180	-	-	-	160	-	14	-	13	-	39	-	19	380	-	-	-	-	0.25	<0.02	0.004	<0.0002	<0.001	0.002	<0.001	-	0.49	<0.0001	0.004	0.55
Sydney Metro - Central	GASW_BH23	GASW_BH23	16/10/2019	Normal	683453	7.7	710	25	-	0.006	<10	190	-	-	-	150	-	12	-	11	-	31	-	45	330	-	-	-	-	0.52	<0.02	0.004	<0.0002	<0.001	<0.001	<0.001	-	0.41	<0.0001	0.001	0.007
Sydney Metro - Central	GASW_BH23	GASW_BH23	14/11/2019	Normal	688512	8.1	710	23	-	0.026	<10	210	-	-	-	170	-	14	-	19	-	48	-	33	320	-	-	-	-	0.66	<0.02	0.004	<0.0002	<0.001	<0.001	<0.001	-	0.33	<0.0001	<0.001	<0.005
Sydney Metro - Central	GASW_BH23	GASW_BH23	16/12/2019	Normal	694466	11	290	2.4	-	0.013	86	<20	-	-	-	37	-	<0.5	-	15	-	50	-	35	97	-	-	-	-	0.27	0.97	0.005	<0.0002	0.003	0.002	<0.001	-	<0.005	<0.0001	<0.001	0.005
Sydney Metro - Central	GASW_BH23	GASW_BH23	22/01/2020	Normal	698379	8.1	580	10	-	0.012	<10	3000	-	-	-	130	-	11	-	12	-	32	-	21	270	-	-	-	-	0.72	<0.02	0.005	<0.0002	<0.001	<0.001	0.001	-	0.28	<0.0001	<0.001	0.14
Sydney Metro - Central	GASW_BH23	GASW_BH23	24/02/2020	Normal	704673	8.1	420	780	-	0.11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.3	-	0.005	<0.0002	<0.001	<0.001	<0.001	-	0.12	<0.0001	<0.001	<0.005
Sydney Metro - Central	GASW_BH23	GASW_BH23	24/02/2020	Normal	706746	-	-	-	-	-	<10	320	-	-	-	120	-	12	-	25	-	61	-	70	120	-	-	-	-	-	0.03	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH23	GASW_BH23	17/03/2020	Normal	708508	7.1	360	28	-	0.009	<10	160	-	-	-	82	-	6.8	-	8.7	-	25	-	13	120	-	-	-	-	0.31	<0.02	0.005	<0.0002	<0.001	0.001	<0.001	-	0.2	<0.0001	0.001	0.037
Sydney Metro - Central	GASW_BH23	GASW_BH23	16/04/2020	Normal	714027	-	-	-	-	0.079	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.98	-	0.011	<0.0002	<0.001	<0.001	<0.001	-	0.053	<0.0001	<0.001	<0.005
Sydney Metro - Central	GASW_BH23	GASW_BH23	20/05/2020	Normal	720682	-	-	-	-	<0.004	-	-	-	-	-	80	-	<5	-	20	-	37	-	-	-	-	-	-	-	0.5	-	0.007	<0.0002	<0.001	0.008	<0.001	-	-	<0.0001	0.006	0.041
Sydney Metro - Central	GASW_BH23	GASW_BH23	17/06/2020	Normal	726825	7.6	380	1400	-	0.008	<10	410	-	-	-	82	-	5.5	-	14	-	30	-	18	54	-	-	-	-	<0.01	<0.02	0.003	<0.0002	<0.001	0.011	<0.001	-	0.22	<0.0001	0.004	0.042
Sydney Metro - Central	GASW_BH23	GASW_BH23	16/07/2020	Normal	732590	7.2	860	6100	-	<0.004	<10	540	<20	540	-	330	-	24	-	25	-	33	-	20	180	-	-	-	-	0.14	-	0.002	<0.0002	<0.001	0.008	<0.001	-	0.15	<0.0001	0.004	0.029
Sydney Metro - Central	GASW_BH23	GASW_BH23	17/08/2020	Normal	738860	7.4	390	1100	-	0.01	<10	340	-	-	-	80	-	6.2	-	12	-	23	-	15	79	-	-	-	-	0.07	<0.02	0.003	<0.0002	<0.001	0.005	<0.001	-	0.24	<0.0001	0.007	0.009
Sydney Metro - Central	GASW_BH23	GASW_BH23	15/09/2020	Normal	744463	-	-	-	-	0.006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.19	-	0.002	<0.0002	<0.001	0.07	<0.001	-	0.2	<0.0001	0.011	0.064
Sydney Metro - Central	GW-SR1	GASW_BH25A	23/08/2019	Interlab_D	673339	8	770	270	-	0.096	<10	120	-	-	-	180	-	11	-	6.5	-	31	-	15	420	-	-	-	-	0.48	0.11	0.002	<0.0002	<0.001	<0.001	<0.001	0.43	-	<0.0001	0.003	<0.005
Sydney Metro - Central	BH25a	GASW_BH25A	23/08/2019	Normal	ES1926979	7.28	686	245	0.015	0.163	<1	100	<1	100	-	-	169	-	9	-	6	-	28	18	-	392	10.5	10.7	0.58	0.48	-	0.002	<0.0001	<0.001	<0.001	<0.001	-	0.348	0.0002	0.002	<0.005
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	25/09/2019	Normal	679636	7.5	460	21	-	0.023	<10	97	-	-	-	97	-	6.1	-	6.6	-	47	-	26	260	-	-	-	-	0.39	<0.02	0.006	<0.0002	<0.001	0.003	<0.001	-	0.14	<0.0001	<0.001	<0.005
Sydney Metro - Central	GASW_BH25a	GASW_BH25A	16/10/2019	Normal	683453	8.1	360	37	-	0.009	<10	110	-	-	-	67	-	4.4	-	5.5	-	28	-	48	140	-	-	-	-	0.42	0.03	0.005	<0.0002	<0.001	<0.001	<0.001	-	0.094	<0.0001	<0.001	<0.005
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	14/11/2019	Normal	688512	8.3	410	53	-	0.032	<10	120	-	-	-	86	-	5.5	-	6.8	-	31	-	85	180	-	-	-	-	0.46	<0.02	0.006	<0.0002	<0.001	0.008	0.001	-	0.11	<0.0001	0.008	0.026
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	16/12/2019	Normal	694466	8.2	450	21	-	0.074	<10	110	-	-	-	100	-	5.6	-	7.9	-	30	-	25	230	-	-	-	-	0.74	<0.02	0.006	<0.0002	<0.001	<0.001	<0.001	-	0.086	<0.0001	<0.001	<0.005
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	22/01/2020	Normal	698379	6.6	430	130	-	0.16	<10	180	-	-	-	84	-	5.9	-	6.1	-	20	-	15	130	-	-	-	-	0.23	<0.02	0.012	<0.0002	<0.001	<0.001	<0.001	-	0.091	<0.0001	<0.001	<0.005
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	24/02/2020	Normal	704673	7.2	380	340	-	0.055	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.17	-	0.011	<0.0002	<0.001	<0.001	<0.001	-	0.096	<0.0001	<0.001	<0.005
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	24/02/2020	Normal	706746	-	-	-	-	-	<10	170	-	-	-	81	-	5.8	-	<5	-	20	-	63	97	-	-	-	-	-	<0.02	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH25a	GASW_BH25A	17/03/2020	Normal	708508	7.3	220	16	-	0.032	<10	99	-	-	-	41	-	3.1	-	4.2	-	20	-	11	47	-	-	-	-	0.27	0.13	0.008	<0.0002	<0.001	0.008	<0.001	-	0.029	<0.0001	0.008	0.047
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	16/04/2020	Normal	714027	6.3	250	120	-	0.14	<10	160	-	-	-	76	-	5.3	-	7.7	-	27	-	26	43	-	-	-	-	0.61	<0.02	0.01	<0.0002	<0.001	<0.001	<0.001	-	0.075	<0.0001	<0.001	<0.005
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	20/05/2020	Normal	720682	7.2	180	800	-	0.025	<10	190	-	-	-	64	-	<5	-	5.2	-	23	-	13	38	-	-	-	-	0.25	<0.02	0.012	<0.0002	<0.001	0.001	<0.001	0.37	-	0.0003	<0.001	<0.005
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	19/06/2020	Normal	726825	7.3	190	210	-	0.034	<10	190	-	-	-	53	-	<5	-	<5	-	19	-	10	46	-	-	-	-	0.01	<0.02	0.009	<0.0002	<0.001	<0.001	<0.001	-	0.038	0.0001	<0.001	<0.005
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	16/07/2020	Normal	732590	7.6	290	56	-	0.007	<10	150	<20	150	-	81	-	6.2	-	4.2	-	20	-	17	120	-	-	-	-	0.24	-	0.004	<0.0002	<0.001	0.02	<0.001	-	0.11	<0.0001	0.007	0.041
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	17/08/2020	Normal	738860	7.1	290	150	-	0.05	<10	170	-	-	-	56	-	<5	-	<5	-	15	-	12	71	-	-	-	-	<0.01	<0.02	0.006	<0.0002	<0.001	0.052	0.002	-	0.078	0.0002	0.012	0.094
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	16/09/2020	Normal	744463	7.9	340	520	-	0.082	<10	230	<20	230	210	75	-	<5	-	<5	-	20	-	14	41	-	-	-	-	0.41	-	0.009	<0.0002	<0.001	<0.001	<0.001	-	0.052	0.0003	<0.001	<0.005
Sydney Metro - Central	GASW_BH7	GASW_BH7	5/06/2019	Normal	659250	5.6	310	28	-	<0.005	<10	35	<20	35	-	27	-	5.1	-	1.2	-	61	-	38	140	-	-	-	-	<0.01	-	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.3	<0.0001	0.002	0.039
Sydney Metro - Central	QC01	GASW_BH7	5/06/2019	Interlab_D	ES1917381	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	0.0001	0.001	<0.001	<0.001	-	-	<0.0001	0.002	0.04
Sydney Metro - Central	GASW_BH7	GASW_BH7	30/07/2019	Normal	669059	3.9	280	20	-	0.006	<10	<20	-	-	-	5.4	-	4.8	-	0.8	-	63	-	41	150	-	-	-	-	0.03	<0.02	<0.001	<0.0002	<0.001	0.007	0.001	-	0.12	<0.0001	0.003	0.059
Sydney Metro - Central	GASW_BH7	GASW_BH7	28/08/2019	Normal	674722	3.5	330	14	-	<0.005	<10	<20	-	-	-	3.7	-	4.8	-	0.7	-	64	-	29	150	-	-	-	-	0.03	<0.02	<0.001	<0.0002	<0.001	0.019	0.002	-	0.13	<0.0001	0.006	0.078
Sydney Metro - Central	GASW_BH7	GASW_BH7	25/09/2019	Normal	679636	3.5	260	27	-	<0.005	<10	<20	-	-	-	4.3	-	4.2	-	0.5	-	69	-	35	160	-	-	-	-	0.02	0.05	<0.001	<0.0002	<0.001	0.007	0.003	-	0.11	<0.0001	0.002	0.064
Sydney Metro - Central	GASW_BH7	GASW_BH7	16/10/2019	Normal	683453	3.6	310	19	-	<0.005	<10	<20	-	-	-	2.7	-	4.3	-	0.5	-	63	-	49	160	-	-	-	-	0.03	<0.02	<0.001	<0.0002	<0.001	0.004	0.003	-	0.11	<0.0001	0.002	0.033
Sydney Metro - Central	GASW_BH7	GASW_BH7	14/11/2019	Normal	688512	4	280	8.3	-	<0.005	<10	<20	-	-	-	2.7	-	4.2	-	0.6	-	65	-	28	150	-	-	-	-	0.02	0.04	<0.001	<0.0002	<0.001	0.003	0.002	-	0.098	<0.0001	0.002	0.036
Sydney Metro - Central	GASW_BH7	GASW_BH7	16/12/2019	Normal	694466	3.5	260	18	-	<0.004	<10	<20	-	-	-	3.1	-	3.4	-	0.6	-	47	-	68	150	-	-	-	-	0.04	<0.02	<0.001	<0.0002	<0.001	0.008	0.002	-	0.081	<0.0001	0.004	0.063
Sydney Metro - Central	GASW_BH7	GASW_BH7	22/01/2020	Normal	698379	3.7	550	33	-	<0.004	<10	<20	-	-	-	3.8	-	3.9	-	0.6	-	57	-	100	150	-	-	-	-	0.04	<0.02	<0.001	<0.0002	<0.001	0.009	0.003	-	0.1	<0.0001	0.001	0.041
Sydney Metro - Central	GASW_BH7	GASW_BH7	24/02/2020	Normal	704673	3.8	340	28	-	<0.004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.05	-	<0.001	<0.0002	<0.001	0.002	<0.001	-	0.14	<0.0001	<0.001	0.018
Sydney Metro - Central	GASW_BH7	GASW_BH7	24/02/2020	Normal	706746	-	-	-	-	-	<10	<20	-	-	-	<5	-	5.1	-	<5	-	60	-	40	140	-	-	-	-	-	0.02	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH7	GASW_BH7	17/03/2020	Normal	708508	3.9	180	67	-	0.005	<10	<20	-	-	-	1.8	-	5.1	-	1	-	54	-	25	110	-	-	-	-	0.09	<0.02	<0.001	<0.0002	<0.001	0.012	0.004	-	0.13	<0.0001	0.003	0.018
Sydney Metro - Central	SRT-BH039	SRT_BH039	7/09/2018	Normal	616629	-	-	-	-	0.007	80	<20	-	-	-	460	-	<0.5	-	160	-	140	-	28	940	-	-	-	-	0.7	1.3	<0.001	<0.0002	0.003	0.03	0.003	-	-	<0.0001	0.004	0.047
Sydney Metro - Central	QA02	SRT_BH039	7/09/2018	Interlab_D	ES1826658	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0001	0.003	0.014	<0.001	-	-	<0.0001	0.002	0.013
Sydney Metro - Central	SRT-BH039	SRT_BH039	25/10/2018	Normal	624838	-	-	-	-	<0.005	70	<20	-	-	-	460	-	<0.5	-	110	-	98	-	45	720	-	-	-	-	1	0.05	<0.001	<0.0002	0.001	0.008	<0.001	-	<0.005	<0.0001	0.006	0.027
Sydney Metro - Central	QA02	SRT_BH039	26/10/2018	Interlab_D	ES1832040	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0001	0.001	0.002	<0.001	-	-	<0.0001	0.002	<0.005
Sydney Metro - Central	SRT-BH047	SRT_BH047	6/09/2018	Normal	616629	-	-	-	-	<0.005	<10	140	-	-	-	64	-	8.1	-	1	-	34	-	27	7.6	-	-	-	-	<0.01	21	<0.001	<0.0002	<0.001	0.018	<0.001	-	-	<0.0001	0.003	0.021
Sydney Metro - Central	SRT-BH047	SRT_BH047	25/10/2018	Normal	624838	-	-	-	-	<0.005	<10	160	-	-	-	58	-	6.1	-	0.9	-	32	-	25	14	-	-	-	-	<0.01	18	<0.001	<0.0002	<0.001	0.004	<0.001	-	<0.005	<0.0001	<0.001	0.005
Sydney Metro - Central	SRT_BH047	SRT_BH047	26/11/2018	Normal	629922	-	-	-	-	<0.005	<10	170	-	-	-	53	-	6.9	-	0.9	-	31	-	39	12	-	-	-	-	<0.01	17	<0.001	<0.0002	<0.001	0.022	0.002	-	-	<0.0001	0.005	0.039
Sydney Metro - Central	SRT_BH047	SRT_BH047	18/12/2018	Normal	634274	-	-	-	-	<0.005	<10	63	-	-	-	35	-	8	-	1.6	-	31	-	33	16	-	-	-	-	<0.01	22	<0.001	<0.0002	<0.001	0.021	0.002	-	0.009	<0.0001	0.004	0.031
Sydney Metro - Central	SRT_BH047	SRT_BH047	17/01/2019	Normal	636542	-	-	-	-	0.02	<10	190	-	-	-	61	-	6.8	-	0.9	-	29	-	23	11	-	-	-	-	<0.01	19	<0.001	<0.0002	<0.001	0.016	0.001	-	<0.005	<0.0001	0.005	0.053

	Inorganics			Cyanide		Acidity & Alkalinity					Major Ions														Nutrients		Metals									
	pH (Lab)	Total Dissolved Solids	Total Suspended Solids	Cyanide (Free)	Cyanide (Total)	Alkalinity (Carbonate as CaCO3)	Alkalinity (Bicarbonate as CaCO3)	Alkalinity (Hydroxide as CaCO3)	Alkalinity (total as CaCO3)	Hardness as CaCO3	Calcium	Calcium (Filtered)	Magnesium	Magnesium (Filtered)	Potassium	Potassium (Filtered)	Sodium	Sodium (Filtered)	Chloride	Sulfate	Sulfate (Filtered)	Cations Total	Anions Total	Ionic Balance	Ammonia as N	Nitrate (as N)	Arsenic (Filtered)	Cadmium (Filtered)	Chromium (III+VI) (Filtered)	Copper (Filtered)	Lead (Filtered)	Manganese	Manganese (Filtered)	Mercury (Filtered)	Nickel (Filtered)	Zinc (Filtered)
	pH units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	meq/L	meq/L	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL	0.01	5	1	0.004	0.004	1	1	1	1	5	0.5	1	0.5	1	0.5	1	0.5	1	1	2	1	0.01	0.01	0.01	0.01	0.02	0.001	0.0001	0.001	0.001	0.001	0.005	0.001	0.0001	0.001	0.005
NEPM 2013 Table 1A(4) HSL D Comm/Ind GW for Vapour Intrusion, Sand																																				
2-4m																																				
4-8m																																				
>8m																																				
NEPM 2013 Table 1C GILs, Marine Waters					0.004																				0.91			0.0007[#3]	0.0044[#4]	0.0013[#4]	0.0044[#4]			0.0001[#5]	0.007[#4]	0.015[#6]
NHMRC Recreational Guidelines 2008 - Health					***0.8***															***5000***	***5000***						***0.1***	***0.02***		***20***	***0.1***	***5***	***5***	***0.01***	***0.2***	

Site_ID	Field_ID	Location_Code	Sampled_Date_Time	Sample_Type	Lab_Report_Number																																
Sydney Metro - Central	SRT_BH047	SRT_BH047	20/02/2019	Normal	641720	-	-	-	-	<0.005	<10	100	-	-	-	26	-	6.6	-	1.3	-	53	-	26	12	-	-	-	-	<0.01	19	<0.001	<0.0002	<0.001	0.018	0.002	-	0.008	<0.0001	0.002	0.013
Sydney Metro - Central	SRT_BH047	SRT_BH047	16/04/2019	Normal	651825	-	-	-	-	<0.005	<10	62	-	-	-	24	-	9.6	-	1.8	-	37	-	33	15	-	-	-	-	<0.01	25	<0.001	<0.0002	<0.001	0.002	<0.001	-	0.023	<0.0001	0.001	0.013
Sydney Metro - Central	SRT_BH047	SRT_BH047	14/05/2019	Normal	656080	8.1	360	40	-	<0.005	<10	120	-	-	-	51	-	9.7	-	1.2	-	34	-	43	11	-	-	-	-	<0.01	23	<0.001	<0.0002	<0.001	0.002	<0.001	-	<0.005	<0.0001	<0.001	<0.005
Sydney Metro - Central	SRT_BH047	SRT_BH047	7/06/2019	Normal	660130	8	230	48	-	<0.005	<10	98	-	-	-	37	-	10	-	1.1	-	35	-	26	11	-	-	-	-	<0.01	23	<0.001	<0.0002	<0.001	<0.001	<0.001	-	<0.005	<0.0001	<0.001	<0.005
Sydney Metro - Central	SRT-BH047	SRT_BH047	31/07/2019	Normal	669059	7.6	270	65	-	0.008	<10	88	-	-	-	43	-	11	-	1.6	-	35	-	50	13	-	-	-	-	<0.01	22	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.018	<0.0001	0.001	0.009
Sydney Metro - Central	SRT_BH047	SRT_BH047	30/08/2019	Normal	674722	8.1	360	51	-	<0.005	<10	120	-	-	-	50	-	8.6	-	0.9	-	33	-	22	10	-	-	-	-	<0.01	22	<0.001	<0.0002	<0.001	0.003	<0.001	-	<0.005	<0.0001	<0.001	0.008
Sydney Metro - Central	SRT_BH047	SRT_BH047	27/09/2019	Normal	679636	7.7	270	22	-	<0.005	<10	140	-	-	-	51	-	8	-	0.8	-	31	-	25	11	-	-	-	-	<0.01	21	<0.001	<0.0002	<0.001	<0.001	<0.001	-	<0.005	<0.0001	<0.001	<0.005
Sydney Metro - Central	SRT_BH047	SRT_BH047	18/10/2019	Normal	683453	7.8	340	68	-	<0.005	<10	92	-	-	-	50	-	7.4	-	0.8	-	30	-	34	11	-	-	-	-	<0.01	15	<0.001	<0.0002	<0.001	0.002	<0.001	-	<0.005	<0.0001	0.002	<0.005
Sydney Metro - Central	SRT_BH047	SRT_BH047	15/11/2019	Normal	688512	8.3	330	89	-	<0.005	<10	120	-	-	-	54	-	8.8	-	1	-	32	-	52	9.5	-	-	-	-	<0.01	21	<0.001	<0.0002	<0.001	0.002	<0.001	-	<0.005	<0.0001	0.001	<0.005
Sydney Metro - Central	SRT_BH047	SRT_BH047	18/12/2019	Normal	694466	8.3	290	100	-	<0.004	<10	130	-	-	-	49	-	9.2	-	0.9	-	16	-	46	12	-	-	-	-	0.02	19	<0.001	<0.0002	<0.001	0.001	<0.001	-	<0.005	<0.0001	<0.001	<0.005
Sydney Metro - Central	SRT_BH047	SRT_BH047	20/01/2020	Normal	698379	7.7	340	1700	-	<0.004	<10	240	-	-	-	49	-	9.7	-	0.8	-	26	-	60	11	-	-	-	-	0.03	22	<0.001	<0.0002	<0.001	0.004	<0.001	-	<0.005	<0.0001	<0.001	<0.005
Sydney Metro - Central	SRT_BH047	SRT_BH047	26/02/2020	Normal	704673	7.7	170	<1	-	<0.004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.01	-	<0.001	<0.0002	<0.001	0.004	<0.001	-	0.024	<0.0001	0.002	0.022
Sydney Metro - Central	SRT_BH047	SRT_BH047	26/02/2020	Normal	706746	-	-	-	-	-	<10	49	-	-	-	19	-	9.5	-	<5	-	26	-	83	27	-	-	-	-	-	23	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH047	SRT_BH047	16/03/2020	Normal	708508	7	230	14	-	<0.004	<10	60	-	-	-	29	-	9.6	-	1.4	-	29	-	25	15	-	-	-	-	0.11	22	<0.001	<0.0002	<0.001	0.003	<0.001	-	0.009	<0.0001	0.004	0.02
Sydney Metro - Central	SRT_BH047	SRT_BH047	15/04/2020	Normal	714027	6.5	320	9.2	-	<0.004	<10	130	-	-	-	46	-	11	-	1	-	38	-	64	11	-	-	-	-	0.03	20	<0.001	<0.0002	<0.001	0.011	<0.001	-	0.006	<0.0001	0.007	0.036
Sydney Metro - Central	SRT_BH047	SRT_BH047	18/05/2020	Normal	720682	6.9	210	13	-	<0.004	<10	110	-	-	-	36	-	12	-	<5	-	30	-	22	13	-	-	-	-	0.02	21	<0.01	<0.002	<0.01	<0.01	<0.01	<0.05	-	<0.001	<0.01	<0.05
Sydney Metro - Central	SRT_BH047	SRT_BH047	17/06/2020	Normal	726825	6.9	230	9.2	-	<0.004	<10	85	-	-	-	34	-	10	-	<5	-	28	-	24	13	-	-	-	-	<0.01	20	<0.001	<0.0002	<0.001	0.002	<0.001	-	0.009	<0.0001	0.003	0.015
Sydney Metro - Central	SRT_BH047	SRT_BH047	17/06/2020	Normal	ES2021404	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH047	SRT_BH047	17/07/2020	Normal	732590	7.5	320	6.2	-	<0.004	<10	120	<20	120	-	44	-	10	-	0.9	-	29	-	25	16	-	-	-	-	0.24	-	<0.001	<0.0002	<0.001	0.009	<0.001	-	<0.005	<0.0001	0.009	0.049
Sydney Metro - Central	SRT_BH047	SRT_BH047	19/08/2020	Normal	738860	7.6	290	33	-	<0.004	<10	120	-	-	-	35	-	8	-	<5	-	22	-	22	11	-	-	-	-	<0.01	18	<0.001	<0.0002	<0.001	0.001	<0.001	-	<0.005	<0.0001	0.004	0.02
Sydney Metro - Central	SRT_BH047	SRT_BH047	15/09/2020	Normal	744463	7.9	290	49	-	<0.004	<10	95	<20	95	150	43	-	9.7	-	<5	-	27	-	22	10	-	-	-	-	<0.01	-	<0.001	<0.0002	<0.001	0.008	<0.001	-	<0.005	<0.0001	0.002	0.02
Sydney Metro - Central	SRT-BH048	SRT_BH048	6/09/2018	Normal	616629	-	-	-	-	<0.005	<10	130	-	-	-	19	-	6.2	-	2.7	-	56	-	34	47	-	-	-	-	<0.01	0.09	<0.001	<0.0002	<0.001	0.045	0.004	-	-	<0.0001	0.011	0.066
Sydney Metro - Central	SRT-BH048	SRT_BH048	25/10/2018	Normal	624838	-	-	-	-	<0.005	<10	<20	-	-	-	3.7	-	1.8	-	1.6	-	39	-	34	48	-	-	-	-	<0.01	0.12	<0.001	<0.0002	<0.001	0.13	0.006	-	0.55	<0.0001	0.017	0.18
Sydney Metro - Central	SRT_BH048	SRT_BH048	26/11/2018	Normal	629922	-	-	-	-	<0.005	<10	27	-	-	-	5.2	-	2.5	-	1.6	-	36	-	51	49	-	-	-	-	<0.01	0.1	<0.001	<0.0002	<0.001	0.045	0.005	-	-	<0.0001	0.011	0.086
Sydney Metro - Central	SRT_BH050	SRT_BH050	16/03/2020	Normal	708508	5.6	270	210	-	0.006	<10	<20	-	-	-	17	-	3.1	-	6.1	-	13	-	10	48	-	-	-	-	0.08	7.1	0.001	<0.0002	<0.001	0.003	<0.001	-	0.022	<0.0001	0.002	0.01
Sydney Metro - Central	SRT_BH050	SRT_BH050	15/04/2020	Normal	714027	3.9	130	480	-	<0.004	<10	<20	-	-	-	18	-	2.5	-	7.2	-	17	-	52	45	-	-	-	-	0.04	0.26	<0.001	<0.0002	<0.001	0.002	<0.001	-	0.024	<0.0001	0.001	0.012
Sydney Metro - Central	SRT_BH050	SRT_BH050	17/06/2020	Normal	726825	4.2	140	370	-	<0.004	<10	<20	-	-	-	14	-	<5	-	5.1	-	13	-	11	44	-	-	-	-	0.02	7.2	<0.001	<0.0002	<0.001	0.011	<0.001	-	0.023	<0.0001	0.007	0.052
Sydney Metro - Central	SRT_BH050	SRT_BH050	17/07/2020	Normal	732590	-	-	-	-	<0.004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02	-	<0.001	<0.0002	<0.001	0.091	0.002	-	0.021	<0.0001	0.01	0.078
Sydney Metro - Central	SRT_BH050	SRT_BH050	19/08/2020	Normal	738860	-	-	-	-	<0.004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0002	<0.001	0.009	<0.001	-	0.025	<0.0001	0.002	0.013
Sydney Metro - Central	SRT-BH052	SRT_BH052	25/10/2018	Normal	624838	-	-	-	-	<0.005	<10	38	-	-	-	14	-	3.7	-	1	-	41	-	22	20	-	-	-	-	<0.01	10	<0.001	<0.0002	<0.001	0.063	0.005	-	0.036	<0.0001	0.008	0.086
Sydney Metro - Central	SRT_BH052	SRT_BH052	26/11/2018	Normal	629922	-	-	-	-	<0.005	<10	73	-	-	-	18	-	3.7	-	1	-	40	-	41	27	-	-	-	-	<0.01	9.2	<0.001	<0.0002	<0.001	0.022	0.003	-	-	<0.0001	0.006	0.085
Sydney Metro - Central	SRT_BH052	SRT_BH052	18/12/2018	Normal	634274	-	-	-	-	<0.005	<10	35	-	-	-	17	-	4.1	-	1.1	-	38	-	43	18	-	-	-	-	<0.01	10	<0.001	<0.0002	<0.001	0.018	0.001	-	0.02	<0.0001	0.004	0.023
Sydney Metro - Central	SRT_BH052	SRT_BH052	17/01/2019	Normal	636542	-	-	-	-	0.02	<10	47	-	-	-	18	-	4.5	-	1	-	39	-	42	27	-	-	-	-	<0.01	9.1	<0.001	<0.0002	<0.001	0.32	0.019	-	0.029	<0.0001	0.013	0.44
Sydney Metro - Central	SRT_BH052	SRT_BH052	20/02/2019	Normal	641720	-	-	-	-	<0.005	61	130	-	-	-	14	-	3.6	-	1.6	-	60	-	42	28	-	-	-	-	<0.01	6.2	<0.001	<0.0002	<0.001	0.006	<0.001	-	0.006	<0.0001	<0.001	0.006
Sydney Metro - Central	SRT_BH052	SRT_BH052	16/04/2019	Normal	651825	-	-	-	-	<0.005	90	140	-	-	-	3	-	1.5	-	1.7	-	130	-	45	21	-	-	-	-	<0.01	5.2	<0.001	<0.0002	<0.001	0.002	<0.001	-	0.005	<0.0001	<0.001	<0.005
Sydney Metro - Central	SRT_BH052	SRT_BH052	14/05/2019	Normal	656080	7.7	230	110	-	<0.005	<10	90	-	-	-	23	-	5.2	-	1.5	-	47	-	56	26	-	-	-	-	<0.01	8.3	<0.001	<0.0002	<0.001	0.002	<0.001	-	<0.005	<0.0001	<0.001	<0.005
Sydney Metro - Central	SRT_BH052	SRT_BH052	7/06/2019	Normal	660130	8.1	250	550	-	<0.005	<10	140	-	-	-	37	-	6.9	-	1.3	-	48	-	39	29	-	-	-	-	<0.01	6.4	<0.001	<0.0002	<0.001	<0.001	<0.001	-	<0.005	<0.0001	<0.001	<0.005
Sydney Metro - Central	SRT-BH052	SRT_BH052	31/07/2019	Normal	669059	7.6	270	100	-	0.006	<10	110	-	-	-	30	-	6.3	-	1.6	-	47	-	42	29	-	-	-	-	<0.01	6.9	<0.001	<0.0002	<0.001	0.001	<0.001	-	<0.005	<0.0001	0.001	0.015
Sydney Metro - Central	SRT_BH052	SRT_BH052	30/08/2019	Normal	674722	7.8	330	160	-	<0.005	<10	110	-	-	-	36	-	6.8	-	1.8	-	45	-	38	30	-	-	-	-	<0.01	6.7	<0.001	<0.0002	0.002	0.003	<0.001	-	<0.005	<0.0001	<0.001	0.01
Sydney Metro - Central	SRT_BH052	SRT_BH052	27/09/2019	Normal	679636	7.8	250	58	-	<0.005	<10	140	-	-	-	26	-	5.7	-	1.2	-	41	-	38	33	-	-	-	-	<0.01	6.8	<0.001	<0.0002	<0.001	0.002	<0.001	-	<0.005	<0.0001	<0.001	0.007
Sydney Metro - Central	SRT_BH052	SRT_BH052	18/10/2019	Normal	683453	7.6	280	65	-	<0.005	<10	78	-	-	-	37	-	3	-	1.3	-	40	-	39	26	-	-	-	-	<0.01	5.9	0.002	<0.0002	<0.001	0.002	<0.001	-	<0.005	<0.0001	0.002	<0.005
Sydney Metro - Central	SRT_BH052	SRT_BH052	15/11/2019	Normal	688512	7.6	240	64	-	<0.005	<10	78	-	-	-	23	-	4.5	-	1.5	-	43	-	49	31	-	-	-	-	<0.01	6.9	<0.001	<0.0002	<0.001	0.018	0.002	-	<0.005	<0.0001	0.006	0.035
Sydney Metro - Central	SRT_BH052	SRT_BH052	18/12/2019	Normal	694466	8.3	280	85	-	<0.004	<10	140	-	-	-	30	-	4.8	-	1.7	-	27	-	83	36	-	-	-	-	0.01	4.4	<0.001	<0.0002	<0.001	0.002	<0.001	-	<0.005	<0.0001	<0.001	<0.005
Sydney Metro - Central	SRT_BH052	SRT_BH052	20/01/2020	Normal	698379	6.9	270	54	-	<0.004	<10	81	-	-	-	49	-	5.1	-	1.5	-	37	-	78	35	-	-	-	-	0.02	5.6	0.003	<0.0002	<0.001	0.001	<0.001	-	<0.005	<0.0001	<0.001	<0.005
Sydney Metro - Central	SRT_BH052	SRT_BH052	26/02/2020	Normal	704673	7.5	170	110	-	<0.004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.01	-	<0.001	<0.0002	<0.001	0.004	<0.001	-	0.014	<0.0001	<0.001	0.007
Sydney Metro - Central	SRT_BH052	SRT_BH052	26/02/2020	Normal	706746	-	-	-	-	-	<10	28	-	-	-	9.3	-	<5	-	<5	-	37	-	96	17	-	-	-	-	-	11	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH052	SRT_BH052	16/03/2020	Normal	708508	6.2	100	210	-	0.005	<10	28	-	-	-	8.7	-	4.1	-	2	-	38	-	35	15	-	-	-	-	0.07	11	<0.001	<0.0002	<0.001	0.002	<0.001	-	0.012	<0.0001	0.002	0.005
Sydney Metro - Central	SRT_BH052	SRT_BH052	15/04/2020	Normal	714027	7.8	210	120	-	<0.004	<10	61	-	-	-	13	-	3.3	-	0.9	-	49	-	52	15	-	-	-	-	0.03	<0.1	<0.001	<0.0002	<0.001	0.012	<0.001	-	0.008	<0.0001	0.003	0.037
Sydney Metro - Central	SRT_BH052	SRT_BH052	18/05/2020	Normal	720682	6.5	260	210	-	<0.004	<10	75	-	-	-	29	-	<5	-	<5	-	50	-	40	30	-	-	-	-	<0.01	8.4	<0.01	<0.002	<0.01	<0.01	<0.01	0.14	-	<0.001	<0.01	<0.05
Sydney Metro - Central	SRT_BH052	SRT_BH052	17/06/2020	Normal	726825	7.8	220	2000	-	<0.004	<10	260	-	-	-	25	-	5.7	-	<5	-	45	-	41	29	-	-	-	-	<0.01	8.7	<0.001	<0.0002	<0.001	0.017	0.001	-	0.008	<0.0001	0.015	0.084
Sydney Metro - Central	SRT_BH052	SRT_BH052	17/06/2020	Normal	ES2021404	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH052	SRT_BH052	17/07/2020	Normal	732590	6.7	270	110	-	<0.004	<10	74	<20	74	-	19	-	4.9	-	2.3	-	50	-	45	34	-	-	-	-	0.16	-	<0.001	<0.0002	0.001	0.002	<0.001	-	<0.005	<0.0001	<0.001	<0.005
Sydney Metro - Central	SRT_BH052	SRT_BH052	19/08/2020	Normal	738860	6.4	200	99	-	<0.004	<10	37	-	-	-	9.7	-	<5	-	<5	-	32	-	38	18	-	-	-	-	<0.01	10	<0.001	<0.0002	<0.001	0.12	0.002	-	0.012	<0.0001	0.011	0.1
Sydney Metro - Central	SRT_BH052	SRT_BH052	15/09/2020	Normal	744463	7.6	270	1100	-	<0.004	<10	86	<20	86	74	24	-	<5	-	<5	-	44	-	45	35	-	-	-	-	0.01	-	<0.001	<0.0002	<0.001	0.007	<0.001	-	<0.005	<0.0001	<0.001	0.008
Sydney Metro - Central	SRT-BH053	SRT_BH053	6/09/2018	Normal	616629	-	-	-	-	<0.005	<10	72	-	-	-	6.3	-	6.1	-	2.6	-	37	-	32	28	-	-	-	-	<0.01	<0.02	<0.001	<0.0002	<0.001	0.23	0.014	-	-	<0.0001	0.029	0.32
Sydney Metro - Central	SRT-BH053	SRT_BH053	25/10/2018	Normal	624838	-	-	-	-	<0.005	<10	52	-	-	-	5.1	-	4.9	-	2.5	-	33	-	26	27	-	-	-	-	<0.01	0.39	<0.001	<0.0002	<0.001	0.004	<0.001	-	1	<0.0001	0.046	0.022
Sydney Metro - Central	SRT-BH059	SRT_BH059	25/10/2018	Normal	624838	-	-	-	-	<0.005	<10	180	-	-	-	63	-	7.9	-	6.6	-	12	-	13	17	-	-	-	-	<0.01	3.5	<0.001	<0.0002	0.001	0.018	0.002	-	<0.005	<0.0001	0.004	0.027
Sydney Metro - Central	SRT_BH059	SRT_BH059	26/11/2018	Normal	629922	-	-	-	-	<0.005	<10	210	-	-	-	58	-	7.4	-	5.5	-	9	-	34	13	-	-	-	-	<0.01	2.3	<0.001	<0.0002	0.001	0.042	0.003	-	-	<0.0001	0.008	0.077
Sydney Metro - Central	SRT_BH059	SRT_BH059	17/12/2018	Normal	634274	-	-	-	-	<0.005	<10	170	-	-	-	70	-	5.7	-	7.6	-	11	-	10	24	-	-	-	-	<0.01	7.9	<0.001	<0.0002	<0.001	0.056	0.003	-	<0.005	<0.0001	0.007	0.053
Sydney Metro - Central	SRT_BH059	SRT_BH059	18/01/2019	Normal	636542	-	-	-	-	0.017	<10	170	-	-	-	64	-	6.1	-	5.9	-	9.5	-	8.1	13	-	-	-	-	<0.01	2.8	<0.001	<0.0002	<0.001	0.04	0.002	-	<0.005	<0.0001	0.007	0.054
Sydney Metro - Central	SRT_BH059	SRT_BH059	20/02/2019	Normal	641720	-	-	-	-	<0.005	<10	170	-	-	-	69	-	7.7	-	6.7	-	14	-	11	12	-	-	-	-	<0.01	2.5	<0.001	<0.0002	<0.001	<0.001	<0.001	-	<0.005	<0.0001	<0.001	<0.005

	Inorganics			Cyanide		Acidity & Alkalinity					Major Ions														Nutrients		Metals									
	pH (Lab)	Total Dissolved Solids	Total Suspended Solids	Cyanide (Free)	Cyanide (Total)	Alkalinity (Carbonate as CaCO3)	Alkalinity (Bicarbonate as CaCO3)	Alkalinity (Hydroxide as CaCO3)	Alkalinity (total as CaCO3)	Hardness as CaCO3	Calcium	Calcium (Filtered)	Magnesium	Magnesium (Filtered)	Potassium	Potassium (Filtered)	Sodium	Sodium (Filtered)	Chloride	Sulfate	Sulfate (Filtered)	Cations Total	Anions Total	Ionic Balance	Ammonia as N	Nitrate (as N)	Arsenic (Filtered)	Cadmium (Filtered)	Chromium (III+VI) (Filtered)	Copper (Filtered)	Lead (Filtered)	Manganese	Manganese (Filtered)	Mercury (Filtered)	Nickel (Filtered)	Zinc (Filtered)
	pH units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	meq/L	meq/L	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL	0.01	5	1	0.004	0.004	1	1	1	1	5	0.5	1	0.5	1	0.5	1	0.5	1	1	2	1	0.01	0.01	0.01	0.01	0.02	0.001	0.0001	0.001	0.001	0.001	0.005	0.001	0.0001	0.001	0.005
NEPM 2013 Table 1A(4) HSL D Comm/Ind GW for Vapour Intrusion, Sand																																				
2-4m																																				
4-8m																																				
>8m																																				
NEPM 2013 Table 1C GILs, Marine Waters					0.004																				0.91			0.0007[#3]	0.0044[#4]	0.0013[#4]	0.0044[#4]			0.0001[#5]	0.007[#4]	0.015[#6]
NHMRC Recreational Guidelines 2008 - Health					***0.8***															***5000***	***5000***						***0.1***	***0.02***		***20***	***0.1***	***5***	***5***	***0.01***	***0.2***	

Site_ID	Field_ID	Location_Code	Sampled_Date_Time	Sample_Type	Lab_Report_Number																																
Sydney Metro - Central	SRT_BH059	SRT_BH059	17/04/2019	Normal	651825	-	-	-	-	<0.005	<10	200	-	-	-	49	-	6	-	5.8	-	8.2	-	9.7	15	-	-	-	-	<0.01	2.5	<0.001	<0.0002	<0.001	0.001	<0.001	-	<0.005	<0.0001	<0.001	<0.005
Sydney Metro - Central	SRT_BH059	SRT_BH059	15/05/2019	Normal	656080	8.1	270	21	-	<0.005	<10	210	-	-	-	65	-	6.9	-	7.1	-	11	-	22	27	-	-	-	-	<0.01	3.2	<0.001	<0.0002	<0.001	0.006	<0.001	-	<0.005	<0.0001	<0.001	<0.005
Sydney Metro - Central	SRT_BH059	SRT_BH059	7/06/2019	Normal	660130	7.7	230	8.9	-	<0.005	<10	210	-	-	-	72	-	7.4	-	9	-	13	-	18	18	-	-	-	-	<0.01	5.2	<0.001	<0.0002	<0.001	<0.001	<0.001	-	<0.005	<0.0001	<0.001	<0.005
Sydney Metro - Central	SRT-BH059	SRT_BH059	31/07/2019	Normal	669059	7.8	270	8.3	-	<0.005	<10	200	-	-	-	62	-	9.4	-	6.6	-	13	-	26	17	-	-	-	-	<0.01	3.1	<0.001	<0.0002	0.001	<0.001	<0.001	-	<0.005	<0.0001	<0.001	<0.005
Sydney Metro - Central	SRT_BH059	SRT_BH059	30/08/2019	Normal	674722	7.9	290	13	-	<0.005	<10	170	-	-	-	60	-	6.4	-	6.7	-	11	-	8	15	-	-	-	-	<0.01	3.5	<0.001	<0.0002	0.001	0.028	0.001	-	<0.005	<0.0001	0.012	0.12
Sydney Metro - Central	SRT_BH059	SRT_BH059	27/09/2019	Normal	679636	8	200	120	-	<0.005	<10	190	-	-	-	60	-	6.6	-	5.7	-	11	-	10	13	-	-	-	-	<0.01	3.2	<0.001	<0.0002	<0.001	0.007	<0.001	-	<0.005	<0.0001	<0.001	0.008
Sydney Metro - Central	SRT_BH059	SRT_BH059	18/10/2019	Normal	683453	8.1	250	4.9	-	<0.005	<10	170	-	-	-	59	-	6	-	5.9	-	10	-	22	11	-	-	-	-	<0.01	2.4	<0.001	<0.0002	<0.001	0.003	<0.001	-	<0.005	<0.0001	<0.001	<0.005
Sydney Metro - Central	SRT_BH059	SRT_BH059	15/11/2019	Normal	688512	8	270	3.6	-	<0.005	<10	180	-	-	-	61	-	8.2	-	6.1	-	11	-	43	14	-	-	-	-	<0.01	2.1	<0.001	<0.0002	<0.001	<0.001	<0.001	-	<0.005	<0.0001	<0.001	<0.005
Sydney Metro - Central	SRT_BH059	SRT_BH059	18/12/2019	Normal	694466	7.9	260	15	-	<0.004	<10	210	-	-	-	56	-	8	-	6.6	-	15	-	12	13	-	-	-	-	0.02	1.9	<0.001	<0.0002	<0.001	0.001	<0.001	-	<0.005	<0.0001	<0.001	0.005
Sydney Metro - Central	SRT_BH059	SRT_BH059	20/01/2020	Normal	698379	6.4	220	7.5	-	<0.004	<10	180	-	-	-	63	-	6.3	-	7.6	-	7.8	-	59	20	-	-	-	-	<0.01	6.1	<0.001	<0.0002	<0.001	0.002	<0.001	-	<0.005	<0.0001	<0.001	<0.005
Sydney Metro - Central	SRT_BH059	SRT_BH059	26/02/2020	Normal	704673	8.2	170	1.8	-	<0.004	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.01	-	<0.001	<0.0002	<0.001	0.027	<0.001	-	<0.005	<0.0001	0.005	0.054
Sydney Metro - Central	SRT_BH059	SRT_BH059	26/02/2020	Normal	706746	-	-	-	-	-	<10	170	-	-	-	57	-	5.4	-	7.4	-	10	-	22	27	-	-	-	-	-	4.4	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH059	SRT_BH059	16/03/2020	Normal	708508	7	180	20	-	0.005	<10	150	-	-	-	52	-	5.2	-	7.3	-	9.7	-	9.5	12	-	-	-	-	0.02	2.3	0.001	<0.0002	<0.001	0.009	<0.001	-	<0.005	<0.0001	0.006	0.042
Sydney Metro - Central	SRT_BH059	SRT_BH059	15/04/2020	Normal	714027	6.7	210	31	-	<0.004	<10	180	-	-	-	69	-	6.5	-	8.5	-	12	-	57	5.9	-	-	-	-	0.05	1.4	<0.001	<0.0002	<0.001	0.002	<0.001	-	<0.005	<0.0001	<0.001	<0.005
Sydney Metro - Central	SRT_BH059	SRT_BH059	18/05/2020	Normal	720682	7.2	140	34	-	<0.004	<10	320	-	-	-	59	-	9.8	-	7.3	-	15	-	7	14	-	-	-	-	<0.01	1.9	<0.01	<0.002	<0.01	0.012	<0.01	0.54	-	<0.001	<0.01	<0.05
Sydney Metro - Central	SRT_BH059	SRT_BH059	17/06/2020	Normal	726825	7.6	270	210	-	0.004	<10	290	-	-	-	55	-	9.4	-	7	-	16	-	8.7	16	-	-	-	-	<0.01	1.8	<0.001	<0.0002	0.001	0.014	<0.001	-	<0.005	<0.0001	0.006	0.057
Sydney Metro - Central	SRT_BH059	SRT_BH059	17/06/2020	Normal	ES2021404	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH059	SRT_BH059	17/07/2020	Normal	732590	7.3	330	41	-	<0.004	-	-	-	-	-	57	-	10	-	7.5	-	19	-	11	23	-	-	-	-	<0.01	-	<0.001	<0.0002	0.002	0.007	<0.001	-	<0.005	<0.0001	<0.001	<0.005
Sydney Metro - Central	SRT_BH059	SRT_BH059	18/08/2020	Normal	738860	7.3	240	350	-	<0.004	<10	210	-	-	-	44	-	8.1	-	5.6	-	13	-	9.2	22	-	-	-	-	<0.01	1.4	<0.001	<0.0002	0.002	0.01	<0.001	-	<0.005	<0.0001	<0.001	<0.005
Sydney Metro - Central	SRT_BH059	SRT_BH059	15/09/2020	Normal	744463	7.8	250	970	-	<0.004	<10	180	<20	180	160	50	-	8.7	-	5.7	-	17	-	7.5	21	-	-	-	-	0.01	-	<0.001	<0.0002	<0.001	0.13	0.002	-	0.008	<0.0001	0.011	0.13
Sydney Metro - Central	SRT_BH060	SRT_BH060	16/03/2020	Normal	708508	7.4	270	370	-	0.007	<10	32	-	-	-	41	-	2.7	-	5.9	-	12	-	31	30	-	-	-	-	0.05	4.1	0.001	<0.0002	<0.001	0.024	<0.001	-	0.01	<0.0001	0.008	0.055
Sydney Metro - Central	SRT_BH060	SRT_BH060	15/04/2020	Normal	714027	8	280	34,000	-	<0.004	-	-	-	-	-	38	-	2.3	-	9.6	-	18	-	73	39	-	-	-	-	0.04	7	<0.001	<0.0002	<0.001	0.008	<0.001	-	0.009	<0.0001	0.006	0.025
Sydney Metro - Central	SRT-BH063	SRT_BH063	6/09/2018	Normal	616629	-	-	-	-	<0.005	<10	330	-	-	-	66	-	38	-	5.8	-	82	-	72	45	-	-	-	-	<0.01	0.15	<0.001	<0.0002	<0.001	0.014	<0.001	-	-	<0.0001	0.02	0.22
Sydney Metro - Central	SRT-BH063	SRT_BH063	25/10/2018	Normal	624838	-	-	-	-	<0.005	<10	270	-	-	-	50	-	30	-	5.5	-	68	-	53	53	-	-	-	-	<0.01	0.09	<0.001	<0.0002	<0.001	0.12	0.005	-	0.049	<0.0001	0.083	0.21
Sydney Metro - Central	SRT_BH063	SRT_BH063	26/11/2018	Normal	629922	-	-	-	-	<0.005	<10	320	-	-	-	48	-	31	-	5	-	63	-	68	52	-	-	-	-	<0.01	0.1	<0.001	<0.0002	<0.001	0.027	0.003	-	-	<0.0001	0.014	0.067
Sydney Metro - Central	QA02	SRT_BH063	27/11/2018	Interlab_D	ES1835581	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0001	<0.001	0.002	<0.001	-	-	<0.0001	0.008	0.016
Sydney Metro - Central	QA01	SRT_BH063	17/12/2018	Field_D	634274	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0002	<0.001	0.002	0.003	-	-	<0.0001	0.004	0.015
Sydney Metro - Central	SRT_BH063	SRT_BH063	17/12/2018	Normal	634274	-	-	-	-	<0.005	<10	290	-	-	-	58	-	33	-	6.4	-	75	-	76	56	-	-	-	-	<0.01	0.24	<0.001	<0.0002	<0.001	0.003	0.005	-	<0.005	<0.0001	0.005	0.019
Sydney Metro - Central	QA01	SRT_BH063	17/01/2019	Field_D	636542	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0002	<0.001	0.004	<0.001	-	-	<0.0001	0.004	0.023
Sydney Metro - Central	SRT_BH063	SRT_BH063	17/01/2019	Normal	636542	-	-	-	-	0.018	<10	290	-	-	-	57	-	32	-	5.4	-	70	-	68	52	-	-	-	-	<0.01	0.13	<0.001	<0.0002	<0.001	0.047	0.003	-	0.011	<0.0001	0.013	0.11
Sydney Metro - Central	SRT_BH063	SRT_BH063	21/02/2019	Normal	641720	-	-	-	-	<0.005	<10	250	-	-	-	51	-	33	-	5.8	-	73	-	71	61	-	-	-	-	<0.01	0.13	<0.001	<0.0002	<0.001	0.029	0.002	-	0.009	<0.0001	0.01	0.034
Sydney Metro - Central	QA02	SRT_BH063	21/02/2019	Interlab_D	ES1905610	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.001	<0.0001	0.001	0.004	<0.001	-	-	<0.0001	0.007	0.005
Sydney Metro - Central	SRT_BH063	SRT_BH063	18/04/2019	Normal	651825	-	-	-	-	<0.005	<10	310	-	-	-	54	-	36	-	6.1	-	70	-	74	58	-	-	-	-	<0.01	0.1	<0.001	<0.0002	<0.001	0.055	0.003	-	0.006	<0.0001	0.018	0.085
Sydney Metro - Central	SRT_BH063	SRT_BH063	15/05/2019	Normal	656080	8.2	460	20	-	<0.005	<10	340	-	-	-	50	-	33	-	5.7	-	62	-	89	49	-	-	-	-	<0.01	<0.02	<0.001	<0.0002	<0.001	0.005	<0.001	-	<0.005	<0.0001	0.005	0.014
Sydney Metro - Central	SRT_BH063	SRT_BH063	7/06/2019	Normal	660130	7.4	360	41	-	<0.005	<10	310	-	-	-	55	-	30	-	6.8	-	71	-	77	48	-	-	-	-	<0.01	0.4	<0.001	<0.0002	<0.001	0.002	<0.001	-	<0.005	<0.0001	0.006	0.036
Sydney Metro - Central	SRT-BH063	SRT_BH063	29/07/2019	Normal	669059	7	460	33	-	<0.005	<10	300	-	-	-	54	-	35	-	5.7	-	68	-	66	51	-	-	-	-	<0.01	0.07	<0.001	<0.0002	<0.001	0.003	<0.001	-	<0.005	<0.0001	0.009	0.018
Sydney Metro - Central	SRT_BH063	SRT_BH063	28/08/2019	Normal	674722	7.8	470	56	-	<0.005	<10	310	-	-	-	55	-	35	-	5.8	-	68	-	66	50	-	-	-	-	<0.01	0.34	<0.001	<0.0002	<0.001	0.01	<0.001	-	0.017	<0.0001	0.007	0.032
Sydney Metro - Central	SRT-BH064	SRT_BH064	6/09/2018	Normal	616629	-	-	-	-	0.028	34	46	-	-	-	5.7	-	0.7	-	18	-	63	-	23	58	-	-	-	-	<0.01	2.3	0.005	<0.0002	<0.001	0.024	0.002	-	-	<0.0001	0.006	0.032
Sydney Metro - Central	QA01	SRT_BH082	25/10/2018	Field_D	624838	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0002	<0.001	<0.001	<0.001	-	-	<0.0001	0.001	0.009
Sydney Metro - Central	SRT-BH082	SRT_BH082	25/10/2018	Normal	624838	-	-	-	-	<0.005	<10	<20	-	-	-	2.9	-	4	-	1.3	-	27	-	16	36	-	-	-	-	<0.01	0.34	<0.001	<0.0002	<0.001	<0.001	<0.001	-	0.054	<0.0001	0.001	0.009
Sydney Metro - Central	QA01	SRT_BH082	26/11/2018	Field_D	629922	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0002	<0.001	0.073	0.013	-	-	<0.0001	0.01	0.17
Sydney Metro - Central	SRT_BH082	SRT_BH082	26/11/2018	Normal	629922	-	-	-	-	<0.005	<10	<20	-	-	-	2.3	-	3.6	-	1.1	-	25	-	38	31	-	-	-	-	<0.01	0.36	<0.001	<0.0002	<0.001	0.007	0.002	-	-	<0.0001	0.002	0.021
Sydney Metro - Central	QA01	SRT_CBH001	6/09/2018	Field_D	616629	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0002	<0.001	0.041	0.003	-	-	<0.0001	0.012	0.058
Sydney Metro - Central	SRT-CBH001	SRT_CBH001	6/09/2018	Normal	616629	-	-	-	-	<0.005	<10	22	-	-	-	8.7	-	6.8	-	1.8	-	24	-	17	34	-	-	-	-	<0.01	9.2	<0.001	<0.0002	<0.001	0.003	<0.001	-	-	<0.0001	0.004	0.012
Sydney Metro - Central	SRT-CBH001	SRT_CBH001	25/10/2018	Normal	624838	-	-	-	-	<0.005	<10	<20	-	-	-	5.9	-	4.4	-	1.6	-	24	-	17	32	-	-	-	-	<0.01	7.1	<0.001	<0.0002	<0.001	0.13	0.004	-	0.62	<0.0001	0.014	0.22
Sydney Metro - Central	SRT_CBH001	SRT_CBH001	26/11/2018	Normal	629922	-	-	-	-	<0.005	<10	<20	-	-	-	6.6	-	4.9	-	1.6	-	21	-	35	32	-	-	-	-	<0.01	7.8	<0.001	<0.0002	<0.001	0.042	0.003	-	-	<0.0001	0.012	0.094
Sydney Metro - Central	SRT-CBH007	SRT_CBH007	6/09/2018	Normal	616629	-	-	-	-	0.012	<10	<20	-	-	-	1.4	-	3	-	1.7	-	25	-	9.7	46	-	-	-	-	<0.01	1.9	<0.001	<0.0002	<0.001	0.36	0.023	-	-	<0.0001	0.02	0.48
Sydney Metro - Central	SRT-CBH015	SRT_CBH015	7/09/2018	Normal	616629	-	-	-	-	<0.005	<10	32	-	-	-	4	-	5.7	-	3.8	-	27	-	11	79	-	-	-	-	<0.01	4.3	<0.001	<0.0002	<0.001	0.038	0.004	-	-	<0.0001	0.013	0.072
Sydney Metro - Central	SRT-CBH015	SRT_CBH015	25/10/2018	Normal	624838	-	-	-	-	<0.005	<10	49	-	-	-	3.1	-	4.8	-	3.2	-	35	-	9.8	49	-	-	-	-	<0.01	2.7	<0.001	<0.0002	<0.001	0.034	0.004	-	***5.2***	<0.0001	0.016	0.073
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	26/11/2018	Normal	629922	-	-	-	-	<0.005	<10	30	-	-	-	2.9	-	5.3	-	3.8	-	24	-	11	45	-	-	-	-	<0.01	3.5	<0.001	<0.0002	<0.001	<0.001	<0.001	-	-	<0.0001	0.009	0.02
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	17/12/2018	Normal	634274	-	-	-	-	<0.005	<10	33	-	-	-	3.4	-	5	-	3.6	-	28	-	12	52	-	-	-	-	<0.01	3.7	<0.001	<0.0002	<0.001	0.019	0.002	-	***5.4***	<0.0001	0.011	0.04
Sydney Metro - Central	QA02	SRT_CBH015	17/12/2018	Interlab_D	ES1838345	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	0.0001	<0.001	<0.001	<0.001	-	-	<0.0001	0.01	0.024
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	18/01/2019	Normal	636542	-	-	-	-	0.019	<10	30	-	-	-	3.2	-	5.4	-	3.4	-	24	-	12	47	-	-	-	-	<0.01	3.1	<0.001	<0.0002	<0.001	0.002	<0.001	-	***6***	<0.0001	0.009	0.022
Sydney Metro - Central	QA02	SRT_CBH015	18/01/2019	Interlab_D	ES1901871	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	0.0002	<0.001	0.037	0.004	-	-	<0.0001	0.012	0.077
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	20/02/2019	Normal	641720	-	-	-	-	<0.005	<10	30	-	-	-	2.5	-	4.4	-	3.1	-	23	-	13	49	-	-	-	-	<0.01	3	<0.001	<0.0002	<0.001	0.001	<0.001	-	***6.6***	<0.0001	0.01	0.023
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	17/04/2019	Normal	651825	-	-	-	-	<0.005	<10	39	-	-	-	4	-	5.8	-	3.9	-	30	-	16	52	-	-	-	-	<0.01	3.5	<0.001	<0.0002	<0.001	0.001	<0.001	-	***5.8***	<0.0001	0.01	0.024
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	15/05/2019	Normal	656080	6.5	140	1.7	-	<0.005	<10	34	-	-	-	2.7	-	5.3	-	3.5	-	29	-	13	48	-	-	-	-	0.03	3	<0.001	<0.0002	<0.001	0.007	<0.001	-	***5.1***	<0.0001	0.009	0.024
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	7/06/2019	Normal	660130	6.1	96	1.6	-	<0.005	<10	26	-	-	-	2.2	-	4.8	-	3.3	-	27	-	29	47	-	-	-	-	0.03	3.3	<0.001	<0.0002	<0.001	<0.001	<0.001	-	***7.5***	<0.0001	0.01	0.027
Sydney Metro - Central	QC02	SRT_CBH015	31/07/2019	Field_D	669059	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0002	<0.001	<0.001	<0.001	-	-	<0.0001	0.009	0.022
Sydney Metro - Central	SRT-CBH015	SRT_CBH015	31/07/2019	Normal	669059	6	130	5.1	-	<0.005	<10	22	-	-	-	2.6	-	5.7	-	3.8	-	22	-	37	42	-	-	-	-	<0.01	3.2	<0.001	<0.0002	<0.001	<0.001	<0.001	-	***6.1***	<0.0001	0.009	0.021
Sydney Metro - Central	QC02	SRT_CBH015	30/08/2019	Field_D	674722	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0002	<0.001	0.002	<0.001	-	-	<0.0001	0.009	0.026

	Inorganics			Cyanide		Acidity & Alkalinity					Major Ions													Nutrients		Metals										
	pH (Lab)	Total Dissolved Solids	Total Suspended Solids	Cyanide (Free)	Cyanide (Total)	Alkalinity (Carbonate as CaCO3)	Alkalinity (Bicarbonate as CaCO3)	Alkalinity (Hydroxide as CaCO3)	Alkalinity (total as CaCO3)	Hardness as CaCO3	Calcium	Calcium (Filtered)	Magnesium	Magnesium (Filtered)	Potassium	Potassium (Filtered)	Sodium	Sodium (Filtered)	Chloride	Sulfate	Sulfate (Filtered)	Cations Total	Anions Total	Ionic Balance	Ammonia as N	Nitrate (as N)	Arsenic (Filtered)	Cadmium (Filtered)	Chromium (III+VI) (Filtered)	Copper (Filtered)	Lead (Filtered)	Manganese	Manganese (Filtered)	Mercury (Filtered)	Nickel (Filtered)	Zinc (Filtered)
	pH units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	meq/L	meq/L	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL	0.01	5	1	0.004	0.004	1	1	1	1	5	0.5	1	0.5	1	0.5	1	0.5	1	1	2	1	0.01	0.01	0.01	0.01	0.02	0.001	0.0001	0.001	0.001	0.001	0.005	0.001	0.0001	0.001	0.005
NEPM 2013 Table 1A(4) HSL D Comm/Ind GW for Vapour Intrusion, Sand																																				
2-4m																																				
4-8m																																				
>8m																																				
NEPM 2013 Table 1C GILs, Marine Waters					0.004																				0.91			0.0007[#3]	0.0044[#4]	0.0013[#4]	0.0044[#4]			0.0001[#5]	0.007[#4]	0.015[#6]
NHMRC Recreational Guidelines 2008 - Health					***0.8***															***5000***	***5000***						***0.1***	***0.02***		***20***	***0.1***	***5***	***5***	***0.01***	***0.2***	

Site_ID	Field_ID	Location_Code	Sampled_Date_Time	Sample_Type	Lab_Report_Number																																
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	30/08/2019	Normal	674722	6.3	180	10	-	<0.005	<10	25	-	-	-	2.7	-	5.7	-	4	-	23	-	9.5	49	-	-	-	-	<0.01	2.3	<0.001	<0.0002	<0.001	0.002	<0.001	-	***6.5***	<0.0001	0.009	0.025
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	27/09/2019	Normal	679636	6.3	120	5.1	-	<0.005	<10	28	-	-	-	2.7	-	5.1	-	3.2	-	24	-	10	47	-	-	-	-	<0.01	2.7	<0.001	<0.0002	<0.001	0.005	<0.001	-	***6.8***	<0.0001	0.01	0.034
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	18/10/2019	Normal	683453	6.3	150	10	-	<0.005	<10	23	-	-	-	2.8	-	5.3	-	3.5	-	19	-	15	39	-	-	-	-	<0.01	3	<0.001	<0.0002	<0.001	0.001	<0.001	-	***6.8***	<0.0001	0.012	0.023
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	15/11/2019	Normal	688512	6.3	140	2.9	-	<0.005	<10	22	-	-	-	3.1	-	5.6	-	3.5	-	19	-	64	41	-	-	-	-	0.02	2.8	<0.001	<0.0002	<0.001	0.001	<0.001	-	***6.3***	<0.0001	0.01	0.022
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	18/12/2019	Normal	694466	6.1	120	39	-	<0.004	<10	25	-	-	-	3	-	5.3	-	3.4	-	18	-	14	45	-	-	-	-	0.06	2.4	<0.001	<0.0002	<0.001	<0.001	<0.001	-	***5.5***	<0.0001	0.011	0.024
Sydney Metro - Central	SRT-CBH017	SRT_CBH017	7/09/2018	Normal	616629	-	-	-	-	<0.005	<10	78	-	-	-	16	-	8.1	-	3.5	-	19	-	9.7	21	-	-	-	-	<0.01	0.2	<0.001	<0.0002	<0.001	0.038	0.004	-	-	<0.0001	0.006	0.069
Sydney Metro - Central	SRT-CBH017	SRT_CBH017	25/10/2018	Normal	624838	-	-	-	-	<0.005	<10	65	-	-	-	13	-	6	-	2.9	-	14	-	8.8	19	-	-	-	-	<0.01	0.62	<0.001	<0.0002	<0.001	0.081	0.004	-	0.85	<0.0001	0.01	0.12
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	26/11/2018	Normal	629922	-	-	-	-	<0.005	<10	84	-	-	-	15	-	6.7	-	2.7	-	13	-	16	18	-	-	-	-	<0.01	0.38	<0.001	<0.0002	<0.001	0.12	0.006	-	-	<0.0001	0.016	0.21
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	17/12/2018	Normal	634274	-	-	-	-	<0.005	<10	42	-	-	-	19	-	9	-	3.2	-	17	-	11	17	-	-	-	-	<0.01	2.5	<0.001	<0.0002	<0.001	0.003	<0.001	-	1.8	<0.0001	0.008	0.017
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	18/01/2019	Normal	636542	-	-	-	-	0.017	<10	44	-	-	-	13	-	6.7	-	2.7	-	12	-	7.9	12	-	-	-	-	<0.01	1.9	<0.001	<0.0002	<0.001	0.002	<0.001	-	1.8	<0.0001	0.005	0.01
Sydney Metro - Central	QA01	SRT_CBH017	20/02/2019	Field_D	641720	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0002	0.002	<0.001	<0.001	-	-	<0.0001	0.01	0.023
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	20/02/2019	Normal	641720	-	-	-	-	<0.005	<10	32	-	-	-	8.7	-	5	-	2.7	-	9.6	-	15	16	-	-	-	-	<0.01	3.1	<0.001	<0.0002	<0.001	0.032	0.002	-	1	<0.0001	0.01	0.033
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	17/04/2019	Normal	651825	-	-	-	-	<0.005	<10	44	-	-	-	9.6	-	4.9	-	3.2	-	9.2	-	8.8	15	-	-	-	-	<0.01	3.1	<0.001	<0.0002	<0.001	0.001	<0.001	-	0.65	<0.0001	0.004	0.008
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	15/05/2019	Normal	656080	6.7	88	16	-	<0.005	<10	30	-	-	-	10	-	6.8	-	3	-	11	-	19	17	-	-	-	-	<0.01	4.4	<0.001	<0.0002	<0.001	0.003	<0.001	-	0.7	<0.0001	0.004	0.008
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	7/06/2019	Normal	660130	6.8	81	8.8	-	<0.005	<10	52	-	-	-	7.1	-	6.5	-	3.1	-	15	-	12	19	-	-	-	-	0.03	1.9	<0.001	<0.0002	<0.001	<0.001	<0.001	-	***5.1***	<0.0001	0.006	0.017
Sydney Metro - Central	SRT-CBH017	SRT_CBH017	31/07/2019	Normal	669059	6.8	130	79	-	<0.005	<10	59	-	-	-	11	-	9.8	-	3.4	-	20	-	50	23	-	-	-	-	<0.01	0.48	<0.001	<0.0002	<0.001	0.002	<0.001	-	2.1	<0.0001	0.005	0.015
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	30/08/2019	Normal	674722	7	180	3.8	-	<0.005	<10	67	-	-	-	12	-	9.6	-	3.4	-	19	-	13	26	-	-	-	-	<0.01	0.32	<0.001	<0.0002	<0.001	0.005	<0.001	-	0.38	<0.0001	0.004	0.014
Sydney Metro - Central	QC02	SRT_CBH017	27/09/2019	Field_D	679636	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.001	<0.0002	<0.001	0.001	<0.001	-	-	<0.0001	0.002	0.006
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	27/09/2019	Normal	679636	7.1	120	2	-	<0.005	<10	66	-	-	-	12	-	9.6	-	3.1	-	20	-	16	30	-	-	-	-	<0.01	0.38	<0.001	<0.0002	<0.001	0.001	<0.001	-	0.45	<0.0001	0.002	0.006
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	18/10/2019	Normal	683453	7.1	150	2.3	-	<0.005	<10	63	-	-	-	11	-	9.1	-	3.2	-	21	-	15	32	-	-	-	-	<0.01	0.33	<0.001	<0.0002	<0.001	0.017	0.001	-	0.6	<0.0001	0.016	0.069
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	15/11/2019	Normal	688512	7.2	150	5.1	-	<0.005	<10	77	-	-	-	14	-	11	-	3.6	-	24	-	50	30	-	-	-	-	<0.01	0.19	<0.001	<0.0002	<0.001	<0.001	<0.001	-	1.3	<0.0001	0.005	0.008
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	18/12/2019	Normal	694466	7	150	9.6	-	<0.004	<10	78	-	-	-	13	-	10	-	3.5	-	21	-	13	31	-	-	-	-	0.02	0.31	<0.001	<0.0002	<0.001	<0.001	<0.001	-	2.3	<0.0001	0.006	0.01
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	20/01/2020	Normal	698379	6.2	200	49	-	<0.004	<10	110	-	-	-	12	-	10	-	2.8	-	20	-	85	34	-	-	-	-	0.01	0.03	<0.001	<0.0002	<0.001	0.014	<0.001	-	3.6	<0.0001	0.011	0.074

Statistical Summary

Number of Results	250	250	250	3	316	309	309	30	30	12	309	3	309	3	309	3	309	3	311	308	3	3	3	3	315	280	366	366	366	366	366	13	283	366	366	366
Number of Detects	250	250	249	2	68	9	284	0	30	12	299	3	291	3	267	3	309	3	311	294	3	3	3	3	161	180	76	4	21	237	65	12	233	9	310	294
Minimum Concentration	3.5	81	<1	<0.004	<0.004	<1	<20	<1	22	32	1.4	137	<0.5	8	0.5	6	6.6	28	7	<2	327	10.5	9.95	0.58	<0.01	<0.02	<0.001	<0.0001	<0.001	<0.001	<0.001	<0.05	<0.005	<0.0001	<0.001	<0.005
Minimum Detect	3.5	81	1.6	0.005	0.004	11	20	ND	22	32	1.4	137	0.7	8	0.5	6	6.6	28	7	5.4	327	10.5	9.95	0.58	0.01	0.02	0.001	0.0001	0.001	0.001	0.001	0.14	0.005	0.0001	0.001	0.005
Maximum Concentration	11	1200	42000	0.015	0.163	150	3000	<20	630	420	460	169	190	10	170	30	230	56	910	940	392	10.8	11.4	3.86	1.3	25	0.012	<0.002	<0.01	0.36	0.023	1.7	7.5	<0.001	0.085	0.55
Maximum Detect	11	1200	42000	0.015	0.163	150	3000	ND	630	420	460	169	190	10	170	30	230	56	910	940	392	10.8	11.4	3.86	1.3	25	0.012	0.0002	0.007	0.36	0.023	1.7	7.5	0.0004	0.085	0.55
Average Concentration	6.9	364	834	0.0073	0.0081	6.7	154	9.1	165	134	36	148	14	9	6.2	22	59	46	77	60	369	11	11	2.4	0.072	3	0.0012	0.00011	0.00066	0.012	0.0011	0.57	0.57	0.000063	0.0091	0.038
Median Concentration	7	290	100	0.005	0.0025	5	110	10	115	107	23	139	7.7	9	3.4	29	45	54	46	38	389	10.7	10.7	2.77	0.01	0.13	0.0005	0.0001	0.0005	0.002	0.0005	0.5	0.25	0.00005	0.006	0.022
Standard Deviation	1	209	3557	0.0068	0.021	12	209	2.9	153	110	50	18	17	1	15	14	42	16	103	89	37	0.15	0.73	1.7	0.17	5.7	0.0018	0.00012	0.00076	0.034	0.0021	0.44	1.3	0.000068	0.011	0.059
Number of Guideline Exceedances	0	0	0	0	210	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	7	8	212	17	0	14	16	177	228
Number of Guideline Exceedances(Detects Only)	0	0	0	0	68	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	208	10	0	14	9	173	222

Env Stds Comments

#1:Not limiting: Derived water HSL exceeds water solubility limit
#2:To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
#3:Values calculated using hardness of 30 mg/L CaCO3. Chemical for which possible bioaccumulation and secondary poisoning effects should be considered.
#4:Values calculated using hardness of 30 mg/L CaCO3. Refer ANZECC & ARMCANZ (2000) for site specific hardness guidance
#5:Chemical for which possible bioaccumulation and secondary poisoning effects should be considered, refer to ANZECC & ARMCANZ (2000) for further guidance.
#6:Values calculated using hardness of 30 mg/L CaCO3. Figure may not protect key species from chronic toxicity. Refer ANZECC & ARMCANZ (2000) for guidance
#7:Figure may not protect key species from chronic toxicity, refer to ANZECC & ARMCANZ (2000) for further guidance.

Appendix B
Table B2
Groundwater analytical results - September 2018 to September 2020

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Table B2
Groundwater analytical results - September 2018 to September 2020

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Groundwater analytical results - September 2018 to September 2020

									Iron speciation	BTEXN								TRH - NEPM 2013							NEPM 2013 - SG Cle			TRH - NEPM 1999					RH - NEPM 1999 - SG Cleanu				PAHs								
									Ferrous Iron	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	BTEX (Sum of Total) - Lab Calc	Naphthalene (BTEXN suite)	F1 (C6-C10 minus BTEX)	C6-C10 Fraction	F2 (>C10-C16 minus Naphthalene)	>C10-C16 Fraction	F3 (>C16-C34 Fraction)	F4 (>C34-C40 Fraction)	>C10-C40 (Sum of Total)	>C10-C16 SG Cleanup	>C16-C34 SG Cleanup	>C34-C40 SG Cleanup	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 (Sum of Total)	C10-C14 SG Cleanup	C15-C28 SG Cleanup	C29-C36 SG Cleanup	C10-C36 (sum) SG Cleanup	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo[b+j]fluoranthene	Benzo(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene
									mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL									0.05	1	1	1	1	2	2	1	5	20	20	50	50	100	100	100	50	100	100	20	50	100	50	50	50	100	100	100	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
NEPM 2013 Table 1A(4) HSL D Comm/Ind GW for Vapour Intrusion, Sand																																										
2-4m										5000	NL	NL			NL		NL	6000[#2]		NL																							
4-8m										5000	NL	NL			NL		NL	6000[#2]		NL																							
>8m										5000	NL	NL			NL		NL	7000[#2]		NL																							
NEPM 2013 Table 1C GILs, Marine Waters										500[#7]							50[#7]																									
NHMRC Recreational Guidelines 2008 - Health										***10***	***8000***	***3000***			***6000***																												
Site_ID	**Field_ID**	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**	**Lab_Report_Number**																																					
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	20/05/2020	Normal	720682	8.2	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	19/06/2020	Normal	726825	8.1	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	19/06/2020	Normal	ES2021404	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	16/07/2020	Normal	732590	6.2	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	-	-	-	<20	<50	<100	<100	<100	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	QC02	CSM_BH09S	16/07/2020	Field_D	732590	-	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	-	-	-	<20	<50	<100	<100	<100	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	18/08/2020	Normal	738860	6.6	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	QC02	CSM_BH09S	18/08/2020	Field_D	738860	-	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	-	-	-	<20	<50	<100	<100	<100	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	16/09/2020	Normal	744463	7.3	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	16/04/2019	Normal	651825	<0.5	<1	1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	-	-	-	<20	<50	<100	<100	<100	-	-	-	-	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	13/05/2019	Normal	656080	0.13	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	11/06/2019	Normal	660130	<0.5	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	-	-	-	<20	<50	<100	<100	<100	-	-	-	-	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	30/07/2019	Normal	669059	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	29/08/2019	Normal	674722	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	25/09/2019	Normal	679636	<0.05	<1	1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	16/10/2019	Normal	683453	0.11	<1	1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	QC01	CSM_BH10S	16/10/2019	Interlab_D	ES1934142	-	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	-	-	-	<20	<50	<100	<50	<50	-	-	-	-	<1	<1	<1	<1	***<0.5***	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	14/11/2019	Normal	688512	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	400	400	<100	<100	400	<50	<100	<100	<20	350	<100	<100	350	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	QC02	CSM_BH10S	14/11/2019	Field_D	688512	-	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	-	-	-	<20	<50	<100	<100	<100	-	-	-	-	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	17/12/2019	Normal	694466	0.16	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	20/01/2020	Normal	698379	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	QC01	CSM_BH10S	20/01/2020	Interlab_D	ES2001825	-	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	-	-	-	<20	<50	<100	<50	<50	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.1	<0.1
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	25/02/2020	Normal	704673	0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	25/02/2020	Normal	706746	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	17/03/2020	Normal	708508	<0.5	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	-	-	-	<20	<50	<100	<100	<100	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	QC02	CSM_BH10S	17/03/2020	Field_D	708508	-	<1	1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	-	-	-	<20	<50	<100	<100	<100	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	15/04/2020	Normal	714027	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	QC02	CSM_BH10S	15/04/2020	Field_D	714027	-	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	-	-	-	<20	<50	<100	<100	<100	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	18/05/2020	Normal	720682	0.12	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	QC02	CSM_BH10S	20/05/2020	Field_D	720682	-	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	-	-	-	<20	<50	<100	<100	<100	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	19/06/2020	Normal	726825	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	19/06/2020	Normal	ES2021404	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	15/07/2020	Normal	732590	<0.5	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	100	<100	100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	17/08/2020	Normal	738860	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	15/09/2020	Normal	744463	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	GASW_BH10	GASW_BH10	5/06/2019	Normal	659250	<0.5	2	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	GASW_BH10	GASW_BH10	30/07/2019	Normal	669059	3.7	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	50	50	<100	<100	<100	<50	<100	<100	<20	50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	GASW_BH10	GASW_BH10	28/08/2019	Normal	674722	4.2	<4	<4	<4	<4	<8	<12	-	<40	<80	<80	310	310	100	<100	410	<50	<100	<100	<80	260	100	<100	360	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	GASW_BH10	GASW_BH10	26/09/2019	Normal	679636	11	<1	2	<1	<1	<2	<3	-	<10	<20	<20	300	300	<100	<100	300	<50	<100	<100	<20	270	200	<100	470	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	GASW_BH10	GASW_BH10	17/10/2019	Normal	683453	9	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	GASW_BH10	GASW_BH10	13/11/2019	Normal	688512	11	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	GASW_BH10	GASW_BH10	16/12/2019	Normal	694466	18	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	50	50	<100	<100	<100	<50	<100	<100	<20	60	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	GASW_BH10	GASW_BH10	21/01/2020	Normal	698379	19	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	GASW_BH10	GASW_BH10	24/02/2020	Normal	704673	15	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	GASW_BH10	GASW_BH10	24/02/2020	Normal	706746	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH10	GASW_BH10	18/03/2020	Normal	708508	8.6	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	100	100	<100	<100	100	<50	200	<100	<20	100	<100	<100	100	<50	100	<100	100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	GASW_BH10	GASW_BH10	14/04/2020	Normal	714027	7.6	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	GASW_BH10	GASW_BH10	19/05/2020	Normal	720682	12	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	GASW_BH10	GASW_BH10	18/06/2020	Normal	726825	13	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	GASW_BH10	GASW_BH10	15/07/2020	Normal	732590	8.3	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	100	<100	100	<50	<100	<100	<20	<50	200	<100	200	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	GASW_BH10	GASW_BH10	17/08/2020	Normal	738860	7.6	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	GASW_BH10	GASW_BH10	14/09/2020	Normal	744463	3.6	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	GASW_BH11	GASW_BH11	5/06/2019	Normal	659250	2.5	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	160	160	<100	<100	160	<50	<100	<100	<20	110	100	<100	210	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	QC02	GASW_BH11	5/06/2019	Field_D	659250	-	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	220	220	<100	<100	220	-	-	-	<20	120	200	<100	320	-	-	-	-	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	GASW_BH11	GASW_BH11	30/07/2019	Normal	669059	3.1	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	100	100	<100	<100	100	<50	<100	<100	<20	60	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	GASW_BH11	GASW_BH11	28/08/2019	Normal	674722	1.2	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	270	270	<100	<100	270	140	<100	<100	<20	270	<100	<100	270	180	<100	<100	180	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	GASW_BH11	GASW_BH11	25/09/2019	Normal	679636	1.1	<1	1	<1	<1	<2	<3	-	<10	<20	<20	640	640	200	<100	840	<50	<100	<100	<20	360	500	<100	860	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	GASW_BH11	GASW_BH11	16/10/2019	Normal	683453	1.2	***20***	2	<1	<1	<2	<3	-	<10	<20	40	210	210	<100	<100	210	<50	<100	<100	30	120	<100	<100	120	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	GASW_BH11	GASW_BH11	14/11/2019	Normal	688512	1.9	8	<1	<1	<1	<2	<3	-	<10	<20	<20	210	210	<100	<100	210	<50	<100	<100	<20	180	<100	<100	180	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	GASW_BH11	GASW_BH11	16/12/2019	Normal	694466	3.8	***10***	<1	<1	<1	<2	<3	-	<10	<20	<20	170	170	<100	<100	170	<50	<100	<100	<20	110	<100	<100	110	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	GASW_BH11	GASW_BH11	22/01/2020	Normal	698379	1.6	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	220	220	<100	<100	220	<50	<100	<100	<20	100	100	<100	200	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	GASW_BH11	GASW_BH11	24/02/2020	Normal	704673	1.8	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	480	480	<100	<100	480	<50	<100	<100	<20	230	200	<100	430	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

		Iron speciation	BTEXN								TRH - NEPM 2013							NEPM 2013 - SG Cle			TRH - NEPM 1999					RH - NEPM 1999 - SG Cleanu				PAHs					
		Ferrous Iron	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	BTEX (Sum of Total) - Lab Calc	Naphthalene (BTEXN suite)	F1 (C6-C10 minus BTEX)	C6-C10 Fraction	F2 (>C10-C16 minus Naphthalene)	>C10-C16 Fraction	F3 (>C16-C34 Fraction)	F4 (>C34-C40 Fraction)	>C10-C40 (Sum of Total)	>C10-C16 SG Cleanup	>C16-C34 SG Cleanup	>C34-C40 SG Cleanup	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 (Sum of Total)	C10-C14 SG Cleanup	C15-C28 SG Cleanup	C29-C36 SG Cleanup	C10-C36 (sum) SG Cleanup	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo[b+j]fluoranthene	Benzo(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene
		mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL		0.05	1	1	1	1	2	2	1	5	20	20	50	50	100	100	100	50	100	100	20	50	100	50	50	50	100	100	100	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
NEPM 2013 Table 1A(4) HSL D Comm/Ind GW for Vapour Intrusion, Sand																																						
2-4m			5000	NL	NL			NL		NL	6000[#2]		NL																									
4-8m			5000	NL	NL			NL		NL	6000[#2]		NL																									
>8m			5000	NL	NL			NL		NL	7000[#2]		NL																									
NEPM 2013 Table 1C GILs, Marine Waters			500[#7]							50[#7]																											
NHMRC Recreational Guidelines 2008 - Health			***10***	***8000***	***3000***			***6000***																										***0.1***				
Site_ID	**Field_ID**	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**	**Lab_Report_Number**																																	
Sydney Metro - Central	GASW_BH11	GASW_BH11	24/02/2020	Normal	706746	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH11	GASW_BH11	17/03/2020	Normal	708508	2.1	2	<1	<1	<1	<2	<3	-	<10	<20	<20	510	510	<100	<100	510	<50	200	<100	<20	360	400	<100	760	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	GASW_BH11	GASW_BH11	16/04/2020	Normal	714027	1.7	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	360	360	100	<100	460	<50	<100	<100	<20	180	300	<100	480	<50	<100	<100	<100	0.06	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	GASW_BH11	GASW_BH11	20/05/2020	Normal	720682	2.1	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	580	580	300	<100	880	230	100	<100	<20	350	500	<100	850	120	200	<100	320	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	GASW_BH11	GASW_BH11	19/06/2020	Normal	726825	0.59	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	340	340	<100	<100	340	70	<100	<100	<20	170	300	<100	470	50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	GASW_BH11	GASW_BH11	16/07/2020	Normal	732590	1.9	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	340	340	200	<100	540	<50	<100	<100	<20	280	500	<100	780	<50	<100	<100	<100	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	GASW_BH11	GASW_BH11	17/08/2020	Normal	738860	0.61	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	GASW_BH11	GASW_BH11	16/09/2020	Normal	744463	0.47	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	350	350	100	<100	450	<50	<100	<100	<20	130	300	<100	430	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	BH23	GASW_BH23	23/08/2019	Normal	ES1926979	<0.05	***1490***	264	21	21	41	62	1840	26	<200	1970	330	360	190	<100	550	-	-	-	2010	320	230	<50	550	-	-	-	-	<1	<1	<1	<1	***<0.5***	<1	<1	<1	<1
Sydney Metro - Central	GW-BR1	GASW_BH23	23/08/2019	Field_D	ES1926979	<0.05	***1900***	319	25	24	48	72	2320	15	<200	2440	300	310	270	<100	580	-	-	-	2500	270	280	50	600	-	-	-	-	<1	<1	<1	<1	***<0.5***	<1	<1	<1	<1
Sydney Metro - Central	GASW_BH23	GASW_BH23	25/09/2019	Normal	679636	10	***1900***	230	30	25	44	68	-	<10	2800	5000	400	400	300	<100	700	240	200	<100	5300	300	300	<100	600	180	200	<100	380	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	GASW_BH23	GASW_BH23	16/10/2019	Normal	683453	9.8	***2400***	290	40	29	44	73	-	<200	4000	6800	<50	<50	<100	<100	<100	<50	<100	<100	6800	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	GASW_BH23	GASW_BH23	14/11/2019	Normal	688512	7.8	***3200***	260	<50	<50	<100	<150	-	<500	3200	6700	<500	320	<100	<100	320	<50	<100	<100	5600	310	<100	<100	310	<50	<100	<100	<100	1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	GASW_BH23	GASW_BH23	16/12/2019	Normal	694466	0.16	***560***	53	<8	<8	<16	<24	-	<80	260	870	<50	<50	<100	<100	<100	<50	<100	<100	870	<50	<100	<100	<100	<50	<100	<100	<100	0.25	0.03	0.11	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	GASW_BH23	GASW_BH23	22/01/2020	Normal	698379	3	***1500***	53	<50	<50	<100	<150	-	<500	-	1500	<500	110	<100	<100	110	50	<100	<100	1500	200	<100	<100	200	90	<100	<100	<100	0.15	0.01	0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	GASW_BH23	GASW_BH23	24/02/2020	Normal	704673	4.6	***5500***	340	<100	<100	<200	<300	-	<1000	3200	9000	<1000	880	200	<100	1080	70	<100	<100	8400	810	400	<100	1210	100	<100	<100	100	1.3	0.1	0.48	0.06	<0.01	<0.01	<0.01	<0.01	0.05
Sydney Metro - Central	GASW_BH23	GASW_BH23	24/02/2020	Normal	706746	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH23	GASW_BH23	17/03/2020	Normal	708508	1.3	***640***	45	<10	<10	<20	<30	-	<100	420	1100	150	150	<100	<100	150	<50	<100	<100	1300	140	<100	<100	140	<50	<100	<100	<100	0.26	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	GASW_BH23	GASW_BH23	16/04/2020	Normal	714027	0.23	***1400***	360	64	68	140	210	-	<500	670	2700	<500	120	1200	<100	1320	<50	700	<100	2500	70	1000	300	1370	<50	500	200	700	0.82	0.07	0.3	0.1	0.09	0.06	0.05	0.04	0.14
Sydney Metro - Central	GASW_BH23	GASW_BH23	20/05/2020	Normal	720682	-	***470***	17	8	7	10	17	-	<40	240	750	370	370	300	<100	670	<50	<100	<100	750	310	400	<100	710	<50	<100	<100	<100	0.21	0.04	0.3	0.15	***0.17***	0.16	0.13	<0.01	0.15
Sydney Metro - Central	GASW_BH23	GASW_BH23	17/06/2020	Normal	726825	2.1	***220***	8	2	2	5	7	-	<20	260	500	70	70	100	<100	170	<50	<100	<100	500	50	100	<100	150	<50	<100	<100	<100	0.13	0.02	0.11	0.09	0.06	0.05	0.05	0.04	0.08
Sydney Metro - Central	GASW_BH23	GASW_BH23	16/07/2020	Normal	732590	<0.5	***84***	2	1	1	<2	<3	-	<10	30	120	<50	<50	100	<100	100	<50	<100	<100	110	<50	300	<100	300	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	GASW_BH23	GASW_BH23	17/08/2020	Normal	738860	4.6	***130***	7	4	2	4	7	-	<10	90	240	<50	<50	<100	<100	<100	<50	<100	<100	240	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	GASW_BH23	GASW_BH23	15/09/2020	Normal	744463	2.3	***440***	7	6	<5	<10	<15	-	<50	220	670	240	240	300	<100	540	110	200	<100	670	220	300	<100	520	130	200	100	430	0.28	0.15	0.5	0.47	***0.72***	0.49	0.53	0.47	0.42
Sydney Metro - Central	GW-SR1	GASW_BH25A	23/08/2019	Interlab_D	673339	0.47	***15,000***	7100	460	<400	930	930	-	<4000	500	24,000	<4000	920	500	<100	1420	-	-	-	23,000	760	800	<100	1560	-	-	-	-	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	BH25a	GASW_BH25A	23/08/2019	Normal	ES1926979	0.46	***15,300***	5660	280	283	612	895	22,100	89	2360	24,500	430	520	490	<100	1010	-	-	-	25,300	480	570	<50	1050	-	-	-	-	1.2	<1	1.5	<1	***<0.5***	<1	<1	<1	<1
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	25/09/2019	Normal	679636	0.31	***3600***	1200	53	77	140	220	-	<40	4900	10,000	260	260	200	<100	460	<50	<100	<100	12,000	220	300	<100	520	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	GASW_BH25a	GASW_BH25A	16/10/2019	Normal	683453	0.15	***2700***	990	40	50	95	140	-	<200	5000	8900	<200	90	<100	<100	<100	<50	<100	<100	8900	80	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	14/11/2019	Normal	688512	0.35	***2200***	870	<50	<50	<100	<150	-	<500	3000	6100	<500	310	<100	<100	310	140	<100	<100	5100	250	<100	<100	250	150	<100	<100	150	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	16/12/2019	Normal	694466	0.26	***9700***	3500	110	120	250	370	-	<500	6300	20,000	<500	280	300	<100	580	<50	<100	<100	20,000	250	300	<100	550	<50	<100	<100	<100	0.62	0.36	0.83	0.35	***0.36***	0.21	0.27	0.2	0.35
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	22/01/2020	Normal	698379	0.95	***30,000***	***11,000***	<400	<400	<800	<1200	-	<4000	11,000	52,000	<4000	520	<100	<100	520	150	<100	<100	52,000	530	200	<100	730	220	<100	<100	220	1.1	0.5	0.87	0.19	0.07	0.06	0.06	0.02	0.18
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	24/02/2020	Normal	704673	8.3	***16,000***	7200	460	420	1100	1600	-	<1000	1800	27,000	<1000	430	<100	<100	430	140	<100	<100	27,000	450	200	<100	650	190	<100	<100	190	0.7	0.28	0.94	0.24	***0.32***	0.15	0.14	0.12	0.32
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	24/02/2020	Normal	706746	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH25a	GASW_BH25A	17/03/2020	Normal	708508	<0.5	***9800***	4900	300	340	700	1000	-	<2000	7000	23,000	<2000	240	<100	<100	240	70	<100	<100	22,000	270	100	<100	370	100	<100	<100	100	0.33	0.15	<0.01	0.09	0.08	0.07	0.06	0.03	0.1
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	16/04/2020	Normal	714027	0.55	***29,000***	***12,000***	1200	1200	2500	3800	-	<4000	100	46,000	<4000	2300	23,000	1300	26,600	470	200	<100	46,000	2500	20,000	6400	28,900	1600	300	<100	1900	0.93	0.56	0.73	0.16	***0.21***	0.14	0.14	0.09	0.28
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	20/05/2020	Normal	720682	0.72	***26,000***	***12,000***	560	720	1300	2000	-	<2000	20,000	61,000	<2000	1100	800	<100	1900	330	200	<100	61,000	1200	1000	<100	2200	470	200	<100	670	1.2	0.48	1.5	0.46	***0.52***	0.37	0.26	0.05	0.52
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	19/06/2020	Normal	726825	0.36	***9400***	6500	270	400	790	1200	-	<1000	18,000	35,000	<1000	800	600	<100	1400	340	200	<100	35,000	840	800	<100	1640	420	200	<100	620	0.6	0.38	0.56	0.22	***0.21***	0.14	0.15	0.11	0.22
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	16/07/2020	Normal	732590	0.9	***5000***	2000	120	160	270	430	-	<1000	350	7900	<1000	360	300	<100	660	110	<100	<100	7800	480	400	<100	880	<50	<100	<100	<100	0.08	0.02	0.1	0.09	<0.01	<0.01	<0.01	<0.01	0.08
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	17/08/2020	Normal	738860	0.48	***7100***	4500	220	300	590	890	-	<1000	4300	17,000	<1000	220	100	<100	320	<50	<100	<100	17,000	250	100	<100	350	<50	<100	<100	<100	0.3	0.31	0.44	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	16/09/2020	Normal	744463	0.2	***23,000***	***11,000***	510	700	1400	2100	-	<4000	16,000	53,000	<4000	1800	900	<100	2700	500	<100	<100	53,000	1800	1200	<100	3000	630	<100	<100	630	0.79	0.27	0.58	0.17	***0.23***	0.13	0.14	0.12	0.12
Sydney Metro - Central	GASW_BH7	GASW_BH7	5/06/2019	Normal	659250	5.4	1	<1	<1	<1	<2	<3	-	<10	<20	<20	630	630	400	<100	1030	<50	<100	<100	<20	400	700	<100	1100	<50	<100	<100	<100	<1	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	QC01	GASW_BH7	5/06/2019	Interlab_D	ES1917381	-	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	380	380	210	<100	590	-	-	-	<20	200	390	<50	590	-	-	-	-	<1	<1	<1	<1	***<0.5***	<1	<1	<1	<1
Sydney Metro - Central	GASW_BH7	GASW_BH7	30/07/2019	Normal	669059	17	9	<1	<1	<1	<2	<3	-	<10	20	30	140	140	<100	<100	140	<50	<100	<100	30	80	200	<100	280	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	GASW_BH7	GASW_BH7	28/08/2019	Normal	674722	19	***27***	<1	<1	<1	<2	<3	-	<10	20	50	450	450	200	<100	650	<50	<100	<100	50	290	400	<100	690	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	GASW_BH7	GASW_BH7	25/09/2019	Normal	679636	12	***70***	6	<1	1	<2	<3	-	<10	30	110	840	840	400	<100	1240	240	<100	<100	100	420	700	<100	1120	150	100	<100	250	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	GASW_BH7	GASW_BH7	16/10/2019	Normal	683453	14	***91***	8	<1	1	<2	<3	-	<10	80	180	810	810	400	<100	1210	190	<100	<100	150	470	800	<100	1270	130	<100	<100	130	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	GASW_BH7	GASW_BH7	14/11/2019	Normal	688512	16	***130***	8	1	2	3	4	-	<10	120	260	300	300	<100	<100	300	<50	<100	<100	210	250	<100	<100	250	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	GASW_BH7	GASW_BH7	16/12/2019	Normal	694466	14	***120***	3	1	2	3	5	-	<10	20	150	180	180	<100	<100	180	<50	<100	<100	140	110	<100	<100	110	<50	<100	<100	<100	0.07	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	GASW_BH7	GASW_BH7	22/01/2020	Normal	698379	12	***42***	<1	<1	1	<2	<3	-	<10	50	90	220	220	<100	<100	220	<50	<100	<100	80	50	100	<100	150	<50	<100	<100	<100	0.06	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	GASW_BH7	GASW_BH7	24/02/2020	Normal	704673	18	***62***	1	<1	<1	<2	<3	-	<10	30	90	300	300	<100	<100	300	<50	<100	<100	90	120	200	<100	320	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	GASW_BH7	GASW_BH7	24/02/2020	Normal	706746	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH7	GASW_BH7	17/03/2020	Normal	708508	1.3	3	<1	<1	<1	<2	<3	-	<10	<20	<20	440	440	100	<100	540	<50	100	<100	<20	310	600	<100	910	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	SRT-BH039	SRT_BH039	7/09/2018	Normal	616629	-	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	200	<100	200	<50	<100	<100	<20	<50	200	<100	200	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	QA02	SRT_BH039	7/09/2018	Interlab_D	ES1826658	-	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	230	<100	230	-	-	-	<20	<50	240	<50	240	-	-	-	-	<1	<1	<1	<1	***<0.5***	<1	<1	<1	<1
Sydney Metro - Central	SRT-BH039	SRT_BH039	25/10/2018	Normal	624838	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	QA02	SRT_BH039	26/10/2018	Interlab_D	ES1832040	-	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	220	<100	220	-	-	-	<20	<50	210	<50	210	-	-	-	-	<1	<1	<1	<1	***<0.5***	<1	<1	<1	<1
Sydney Metro - Central	SRT-BH047	SRT_BH047	6/09/2018	Normal	616629	-	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT-BH047	SRT_BH047	25/10/2018	Normal	624838	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH047	SRT_BH047	26/11/2018	Normal	629922	-	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH047	SRT_BH047	18/12/2018	Normal	634274	0.06	<1	2	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH047	SRT_BH047	17/01/2019	Normal	636542	0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1

	Iron speciation	BTEXN								TRH - NEPM 2013							NEPM 2013 - SG Cle			TRH - NEPM 1999					RH - NEPM 1999 - SG Cleanu				PAHs								
	Ferrous Iron	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	BTEX (Sum of Total) - Lab Calc	Naphthalene (BTEXN suite)	F1 (C6-C10 minus BTEX)	C6-C10 Fraction	F2 (>C10-C16 minus Naphthalene)	>C10-C16 Fraction	F3 (>C16-C34 Fraction)	F4 (>C34-C40 Fraction)	>C10-C40 (Sum of Total)	>C10-C16 SG Cleanup	>C16-C34 SG Cleanup	>C34-C40 SG Cleanup	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 (Sum of Total)	C10-C14 SG Cleanup	C15-C28 SG Cleanup	C29-C36 SG Cleanup	C10-C36 (sum) SG Cleanup	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo[b+j]fluoranthene	Benzo(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene
	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	0.05	1	1	1	1	2	2	1	5	20	20	50	50	100	100	100	50	100	100	20	50	100	50	50	50	100	100	100	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
NEPM 2013 Table 1A(4) HSL D Comm/Ind GW for Vapour Intrusion, Sand																																					
2-4m		5000	NL	NL			NL		NL	6000[#2]		NL																									
4-8m		5000	NL	NL			NL		NL	6000[#2]		NL																									
>8m		5000	NL	NL			NL		NL	7000[#2]		NL																									
NEPM 2013 Table 1C GILs, Marine Waters		500[#7]							50[#7]																												
NHMRC Recreational Guidelines 2008 - Health		***10***	***8000***	***3000***			***6000***																									***0.1***				

Site_ID	Field_ID	Location_Code	Sampled_Date_Time	Sample_Type	Lab_Report_Number																																	
Sydney Metro - Central	SRT_BH047	SRT_BH047	20/02/2019	Normal	641720	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	430	430	1400	300	2130	<50	<100	<100	<20	140	1100	700	1940	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH047	SRT_BH047	16/04/2019	Normal	651825	<0.5	<1	7	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	-	-	-	<20	<50	<100	<100	<100	-	-	-	-	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH047	SRT_BH047	14/05/2019	Normal	656080	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH047	SRT_BH047	7/06/2019	Normal	660130	<0.5	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	-	-	-	<20	<50	<100	<100	<100	-	-	-	-	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT-BH047	SRT_BH047	31/07/2019	Normal	669059	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH047	SRT_BH047	30/08/2019	Normal	674722	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	100	<100	100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH047	SRT_BH047	27/09/2019	Normal	679636	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH047	SRT_BH047	18/10/2019	Normal	683453	0.06	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH047	SRT_BH047	15/11/2019	Normal	688512	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH047	SRT_BH047	18/12/2019	Normal	694466	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	SRT_BH047	SRT_BH047	20/01/2020	Normal	698379	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	SRT_BH047	SRT_BH047	26/02/2020	Normal	704673	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	SRT_BH047	SRT_BH047	26/02/2020	Normal	706746	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH047	SRT_BH047	16/03/2020	Normal	708508	<0.5	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	-	-	-	<20	<50	<100	<100	<100	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	SRT_BH047	SRT_BH047	15/04/2020	Normal	714027	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	SRT_BH047	SRT_BH047	18/05/2020	Normal	720682	0.16	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	SRT_BH047	SRT_BH047	17/06/2020	Normal	726825	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	SRT_BH047	SRT_BH047	17/06/2020	Normal	ES2021404	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH047	SRT_BH047	17/07/2020	Normal	732590	<0.5	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	-	-	-	<20	<50	<100	<100	<100	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	SRT_BH047	SRT_BH047	19/08/2020	Normal	738860	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	SRT_BH047	SRT_BH047	15/09/2020	Normal	744463	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	SRT-BH048	SRT_BH048	6/09/2018	Normal	616629	-	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT-BH048	SRT_BH048	25/10/2018	Normal	624838	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH048	SRT_BH048	26/11/2018	Normal	629922	-	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH050	SRT_BH050	16/03/2020	Normal	708508	<0.5	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	-	-	-	<20	<50	<100	<100	<100	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	SRT_BH050	SRT_BH050	15/04/2020	Normal	714027	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	SRT_BH050	SRT_BH050	17/06/2020	Normal	726825	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	230	230	100	<100	330	200	100	<100	<20	300	100	<100	400	270	<100	<100	270	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	SRT_BH050	SRT_BH050	17/07/2020	Normal	732590	<0.5	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	-	-	-	<20	<50	<100	<100	<100	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	SRT_BH050	SRT_BH050	19/08/2020	Normal	738860	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	SRT-BH052	SRT_BH052	25/10/2018	Normal	624838	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH052	SRT_BH052	26/11/2018	Normal	629922	-	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH052	SRT_BH052	18/12/2018	Normal	634274	<0.05	<1	2	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH052	SRT_BH052	17/01/2019	Normal	636542	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH052	SRT_BH052	20/02/2019	Normal	641720	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH052	SRT_BH052	16/04/2019	Normal	651825	<0.5	<1	14	<1	<1	<2	<3	-	<10	<20	30	<50	<50	200	<100	200	<50	<100	<100	30	<50	200	<100	200	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH052	SRT_BH052	14/05/2019	Normal	656080	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH052	SRT_BH052	7/06/2019	Normal	660130	<0.5	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	-	-	-	<20	<50	<100	<100	<100	-	-	-	-	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT-BH052	SRT_BH052	31/07/2019	Normal	669059	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH052	SRT_BH052	30/08/2019	Normal	674722	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	100	<100	100	<50	<100	<100	<20	<50	100	<100	100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH052	SRT_BH052	27/09/2019	Normal	679636	<0.05	<1	1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH052	SRT_BH052	18/10/2019	Normal	683453	0.07	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH052	SRT_BH052	15/11/2019	Normal	688512	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH052	SRT_BH052	18/12/2019	Normal	694466	0.06	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	SRT_BH052	SRT_BH052	20/01/2020	Normal	698379	0.16	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	SRT_BH052	SRT_BH052	26/02/2020	Normal	704673	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	SRT_BH052	SRT_BH052	26/02/2020	Normal	706746	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH052	SRT_BH052	16/03/2020	Normal	708508	<0.5	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	-	-	-	<20	<50	<100	<100	<100	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	SRT_BH052	SRT_BH052	15/04/2020	Normal	714027	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	SRT_BH052	SRT_BH052	18/05/2020	Normal	720682	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	SRT_BH052	SRT_BH052	17/06/2020	Normal	726825	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	SRT_BH052	SRT_BH052	17/06/2020	Normal	ES2021404	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH052	SRT_BH052	17/07/2020	Normal	732590	<0.5	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	-	-	-	<20	<50	<100	<100	<100	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	SRT_BH052	SRT_BH052	19/08/2020	Normal	738860	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	SRT_BH052	SRT_BH052	15/09/2020	Normal	744463	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	SRT-BH053	SRT_BH053	6/09/2018	Normal	616629	-	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT-BH053	SRT_BH053	25/10/2018	Normal	624838	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT-BH059	SRT_BH059	25/10/2018	Normal	624838	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH059	SRT_BH059	26/11/2018	Normal	629922	-	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	3100	3100	2900	800	6800	<50	100	<100	<20	2900	2600	900	6400	<50	100	<100	100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH059	SRT_BH059	17/12/2018	Normal	634274	0.8	<1	2	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH059	SRT_BH059	18/01/2019	Normal	636542	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH059	SRT_BH059	20/02/2019	Normal	641720	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1

Appendix B
Table B2
Groundwater analytical results - September 2018 to September 2020

	Iron speciation	BTEXN								TRH - NEPM 2013							NEPM 2013 - SG Cle			TRH - NEPM 1999					RH - NEPM 1999 - SG Cleanu				PAHs								
	Ferrous Iron	Benzene	Toluene	Ethylbenzene	Xylene (o)	Xylene (m & p)	Xylene Total	BTEX (Sum of Total) - Lab Calc	Naphthalene (BTEXN suite)	F1 (C6-C10 minus BTEX)	C6-C10 Fraction	F2 (>C10-C16 minus Naphthalene)	>C10-C16 Fraction	F3 (>C16-C34 Fraction)	F4 (>C34-C40 Fraction)	>C10-C40 (Sum of Total)	>C10-C16 SG Cleanup	>C16-C34 SG Cleanup	>C34-C40 SG Cleanup	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 (Sum of Total)	C10-C14 SG Cleanup	C15-C28 SG Cleanup	C29-C36 SG Cleanup	C10-C36 (sum) SG Cleanup	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo[b+j]fluoranthene	Benzo(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene
	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	0.05	1	1	1	1	2	2	1	5	20	20	50	50	100	100	100	50	100	100	20	50	100	50	50	50	100	100	100	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
NEPM 2013 Table 1A(4) HSL D Comm/Ind GW for Vapour Intrusion, Sand																																					
2-4m		5000	NL	NL			NL		NL	6000[#2]		NL																									
4-8m		5000	NL	NL			NL		NL	6000[#2]		NL																									
>8m		5000	NL	NL			NL		NL	7000[#2]		NL																									
NEPM 2013 Table 1C GILs, Marine Waters		500[#7]							50[#7]																												
NHMRC Recreational Guidelines 2008 - Health		***10***	***8000***	***3000***			***6000***																									***0.1***				

Site_ID	Field_ID	Location_Code	Sampled_Date_Time	Sample_Type	Lab_Report_Number																																	
Sydney Metro - Central	SRT_BH059	SRT_BH059	17/04/2019	Normal	651825	<0.5	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	-	-	-	<20	<50	<100	<100	<100	-	-	-	-	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH059	SRT_BH059	15/05/2019	Normal	656080	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH059	SRT_BH059	7/06/2019	Normal	660130	<0.5	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	-	-	-	<20	<50	<100	<100	<100	-	-	-	-	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT-BH059	SRT_BH059	31/07/2019	Normal	669059	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH059	SRT_BH059	30/08/2019	Normal	674722	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH059	SRT_BH059	27/09/2019	Normal	679636	<0.05	<1	1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	120	<100	<100	<20	<50	<100	<100	<100	100	<100	<100	100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH059	SRT_BH059	18/10/2019	Normal	683453	0.06	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH059	SRT_BH059	15/11/2019	Normal	688512	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH059	SRT_BH059	18/12/2019	Normal	694466	0.08	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	SRT_BH059	SRT_BH059	20/01/2020	Normal	698379	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	SRT_BH059	SRT_BH059	26/02/2020	Normal	704673	0.09	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	SRT_BH059	SRT_BH059	26/02/2020	Normal	706746	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH059	SRT_BH059	16/03/2020	Normal	708508	<0.5	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	-	-	-	<20	<50	<100	<100	<100	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	SRT_BH059	SRT_BH059	15/04/2020	Normal	714027	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	SRT_BH059	SRT_BH059	18/05/2020	Normal	720682	0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	SRT_BH059	SRT_BH059	17/06/2020	Normal	726825	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	SRT_BH059	SRT_BH059	17/06/2020	Normal	ES2021404	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH059	SRT_BH059	17/07/2020	Normal	732590	<0.5	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	-	-	-	<20	<50	<100	<100	<100	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	SRT_BH059	SRT_BH059	18/08/2020	Normal	738860	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	SRT_BH059	SRT_BH059	15/09/2020	Normal	744463	0.06	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	0.03	0.04	<0.01	<0.01	<0.01	<0.01	0.04
Sydney Metro - Central	SRT_BH060	SRT_BH060	16/03/2020	Normal	708508	<0.5	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	-	-	-	<20	<50	<100	<100	<100	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	SRT_BH060	SRT_BH060	15/04/2020	Normal	714027	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sydney Metro - Central	SRT-BH063	SRT_BH063	6/09/2018	Normal	616629	-	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT-BH063	SRT_BH063	25/10/2018	Normal	624838	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH063	SRT_BH063	26/11/2018	Normal	629922	-	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	730	730	1100	200	2030	<50	<100	<100	<20	620	1000	300	1920	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	QA02	SRT_BH063	27/11/2018	Interlab_D	ES1835581	-	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	-	-	-	<20	<50	<100	<50	<50	-	-	-	-	<1	<1	<1	<1	***<0.5***	<1	<1	<1	<1
Sydney Metro - Central	QA01	SRT_BH063	17/12/2018	Field_D	634274	-	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	-	-	-	<20	<50	<100	<100	<100	-	-	-	-	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH063	SRT_BH063	17/12/2018	Normal	634274	0.39	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	QA01	SRT_BH063	17/01/2019	Field_D	636542	-	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	-	-	-	<20	<50	<100	<100	<100	-	-	-	-	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH063	SRT_BH063	17/01/2019	Normal	636542	0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH063	SRT_BH063	21/02/2019	Normal	641720	0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	QA02	SRT_BH063	21/02/2019	Interlab_D	ES1905610	-	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	-	-	-	<20	<50	<100	<50	<50	-	-	-	-	<1	<1	<1	<1	***<0.5***	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH063	SRT_BH063	18/04/2019	Normal	651825	<0.5	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	200	<100	200	<50	200	<100	<20	<50	200	<100	200	<50	100	<100	100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH063	SRT_BH063	15/05/2019	Normal	656080	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH063	SRT_BH063	7/06/2019	Normal	660130	<0.5	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	-	-	-	<20	<50	<100	<100	<100	-	-	-	-	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT-BH063	SRT_BH063	29/07/2019	Normal	669059	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH063	SRT_BH063	28/08/2019	Normal	674722	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT-BH064	SRT_BH064	6/09/2018	Normal	616629	-	3	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	QA01	SRT_BH082	25/10/2018	Field_D	624838	-	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	-	-	-	<20	<50	<100	<100	<100	-	-	-	-	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT-BH082	SRT_BH082	25/10/2018	Normal	624838	0.16	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	QA01	SRT_BH082	26/11/2018	Field_D	629922	-	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	-	-	-	<20	<50	<100	<100	<100	-	-	-	-	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH082	SRT_BH082	26/11/2018	Normal	629922	-	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	QA01	SRT_CBH001	6/09/2018	Field_D	616629	-	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	-	-	-	<20	<50	<100	<100	<100	-	-	-	-	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT-CBH001	SRT_CBH001	6/09/2018	Normal	616629	-	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT-CBH001	SRT_CBH001	25/10/2018	Normal	624838	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_CBH001	SRT_CBH001	26/11/2018	Normal	629922	-	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	510	510	1000	300	1810	<50	<100	<100	<20	140	800	400	1340	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT-CBH007	SRT_CBH007	6/09/2018	Normal	616629	-	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT-CBH015	SRT_CBH015	7/09/2018	Normal	616629	-	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT-CBH015	SRT_CBH015	25/10/2018	Normal	624838	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	26/11/2018	Normal	629922	-	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	17/12/2018	Normal	634274	<0.05	<1	2	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	QA02	SRT_CBH015	17/12/2018	Interlab_D	ES1838345	-	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	-	-	-	<20	<50	<100	<50	<50	-	-	-	-	<1	<1	<1	<1	***<0.5***	<1	<1	<1	<1
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	18/01/2019	Normal	636542	0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	QA02	SRT_CBH015	18/01/2019	Interlab_D	ES1901871	-	<1	<2	<2	<2	<2	<2	<1	<5	<20	<20	<100	<100	<100	<100	<100	-	-	-	<20	<50	<100	<50	<50	-	-	-	-	<1	<1	<1	<1	***<0.5***	<1	<1	<1	<1
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	20/02/2019	Normal	641720	0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	17/04/2019	Normal	651825	<0.5	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	-	-	-	<20	<50	<100	<100	<100	-	-	-	-	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	15/05/2019	Normal	656080	<0.05	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	7/06/2019	Normal	660130	<0.5	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	-	-	-	<20	<50	<100	<100	<100	-	-	-	-	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	QC02	SRT_CBH015	31/07/2019	Field_D	669059	-	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	-	-	-	<20	<50	<100	<100	<100	-	-	-	-	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	SRT-CBH015	SRT_CBH015	31/07/2019	Normal	669059	<0.05	<1	1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	<50	<100	<100	<20	<50	<100	<100	<100	<50	<100	<100	<100	<1	<1	<1	<1	***<1***	<1	<1	<1	<1
Sydney Metro - Central	QC02	SRT_CBH015	30/08/2019	Field_D	674722	-	<1	<1	<1	<1	<2	<3	-	<10	<20	<20	<50	<50	<100	<100	<100	-	-	-	<20	<50	<100	<100	<100	-	-	-	-	<1	<1	<1	<1	***<1***	<1	<1	<1	<1

| | | |

	- standard 16										Phenols - Halogenated									Phenols - Non-Halogenated																								
	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene-PAH	Phenanthrene	Pyrene	Sum of standard 16 PAHs	PAHs (Sum of total) - Lab calc	Total 8 PAHs (as BaP TEQ)(zero LOR) - Lab Calc	2-Chlorophenol	2,4-Dichlorophenol	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,6-Dichlorophenol	4-Chloro-3-methylphenol	Pentachlorophenol	tetrachlorophenols	Phenols (Total Halogenated)	Phenol	2-Nitrophenol	2-Methylphenol (o-Cresol)	3,4-Methylphenol (m,p-cresol)	2,4-Dimethylphenol	2,4-Dinitrophenol	4,6-Dinitro-2-methylphenol	4,6-Dinitro-o-cyclohexyl phenol	4-Nitrophenol	Phenols (Total Non Halogenated)	Organochlorine pesticides EPAVic	Other organochlorine pesticides EPAVic	4,4'-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC	Chlordane	Chlordane (cis)	Chlordane (trans)	d-BHC
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.5	0.01	0.5	1	1	1	1	1	1	2	30	10	1	1	1	2	1	30	30	100	30	100	1	1	0.002	0.002	0.001	0.002	0.002	0.001	0.001	0.001	0.002
NEPM 2013 Table 1A(4) HSL D Comm/Ind GW for Vapour Intrusion, Sand																																									
2-4m					NL																																				
4-8m					NL																																				
>8m					NL																																				
NEPM 2013 Table 1C GILs, Marine Waters					50[#7]												11[#5]			400																					
NHMRC Recreational Guidelines 2008 - Health											***3000***	***2000***		***200***			***100***																		***3***						
Site_ID	**Field_ID**	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**	**Lab_Report_Number**																																					
Sydney Metro - Central	CSM_BH02	CSM_BH02	16/04/2019	Normal	651825	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	CSM_BH02	CSM_BH02	14/05/2019	Normal	656080	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	CSM_BH02	CSM_BH02	6/06/2019	Normal	660130	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	CSM_BH02	CSM_BH02	30/07/2019	Normal	669059	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	CSM_BH02	CSM_BH02	29/08/2019	Normal	674722	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	CSM_BH02	CSM_BH02	26/09/2019	Normal	679636	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	CSM_BH02	CSM_BH02	17/10/2019	Normal	683453	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	CSM_BH02	CSM_BH02	13/11/2019	Normal	688512	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	CSM_BH02	CSM_BH02	17/12/2019	Normal	694466	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	CSM_BH02	CSM_BH02	21/01/2020	Normal	698379	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	CSM_BH02	CSM_BH02	25/02/2020	Normal	704673	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	CSM_BH02	CSM_BH02	25/02/2020	Normal	706746	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH02	CSM_BH02	18/03/2020	Normal	708508	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	CSM_BH02	CSM_BH02	14/04/2020	Normal	714027	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	CSM_BH02	CSM_BH02	19/05/2020	Normal	720682	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH02	CSM_BH02	18/06/2020	Normal	726825	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	QC02	CSM_BH02	18/06/2020	Field_D	726825	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH02	CSM_BH02	18/06/2020	Normal	ES2021404	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.002	<0.002	<0.001	<0.002	<0.002	<0.001	<0.001	<0.001	<0.002
Sydney Metro - Central	CSM_BH02	CSM_BH02	15/07/2020	Normal	732590	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH02	CSM_BH02	18/08/2020	Normal	738860	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH02	CSM_BH02	14/09/2020	Normal	744463	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	QC02	CSM_BH02	14/09/2020	Field_D	744463	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH04	CSM_BH04	16/04/2019	Normal	651825	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	CSM_BH04	CSM_BH04	13/05/2019	Normal	656080	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	CSM_BH04	CSM_BH04	11/06/2019	Normal	660130	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	CSM_BH04	CSM_BH04	30/07/2019	Normal	669059	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	CSM_BH04	CSM_BH04	29/08/2019	Normal	674722	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	CSM_BH04	CSM_BH04	26/09/2019	Normal	679636	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	CSM_BH04	CSM_BH04	17/10/2019	Normal	683453	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	QC02	CSM_BH04	17/10/2019	Field_D	683453	<1	<1	<1	<1	<1	<1	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH04	CSM_BH04	13/11/2019	Normal	688512	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	QC01	CSM_BH04	13/11/2019	Interlab_D	ES1937682	<1	<1	<1	<1	<1	<1	<1	<0.5	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH04	CSM_BH04	17/12/2019	Normal	694466	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	CSM_BH04	CSM_BH04	21/01/2020	Normal	698379	<0.01	<0.01	<0.01	<0.01	0.06	<0.01	<0.01	-	0.06	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	QC02	CSM_BH04	21/01/2020	Field_D	698379	<0.01	<0.01	<0.01	<0.01	1	0.17	0.08	-	1.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH04	CSM_BH04	25/02/2020	Normal	704673	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	CSM_BH04	CSM_BH04	25/02/2020	Normal	706746	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	QC02	CSM_BH04	25/02/2020	Field_D	704673	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH04	CSM_BH04	18/03/2020	Normal	708508	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	-	<0.2
Sydney Metro - Central	CSM_BH04	CSM_BH04	14/04/2020	Normal	714027	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	CSM_BH04	CSM_BH04	20/05/2020	Normal	720682	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH04	CSM_BH04	18/06/2020	Normal	726825	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH04	CSM_BH04	18/06/2020	Normal	ES2021404	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.002	<0.002	<0.001	<0.002	<0.002	<0.001	<0.001	<0.001	<0.002
Sydney Metro - Central	CSM_BH04	CSM_BH04	15/07/2020	Normal	732590	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH04	CSM_BH04	17/08/2020	Normal	738860	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	QC01	CSM_BH04	17/08/2020	Interlab_D	ES2028968	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH04	CSM_BH04	14/09/2020	Normal	744463	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH05	CSM_BH05	17/04/2019	Normal	651825	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	CSM_BH05	CSM_BH05	13/05/2019	Normal	656080	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	CSM_BH05	CSM_BH05	11/06/2019	Normal	660130	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	CSM_BH05	CSM_BH05	29/07/2019	Normal	669059	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	CSM_BH06	CSM_BH06	18/04/2019	Normal	651825	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	CSM_BH06	CSM_BH06	14/05/2019	Normal	656080	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	QC02	CSM_BH06	14/05/2019	Field_D	656080	<1	<1	<1	<1	<1	<1	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH06	CSM_BH06	6/06/2019	Normal	660130	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	QC04	CSM_BH06	8/06/2019	Field_D	660130	<1	<1	<1	<1	<1	1	<1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH06	CSM_BH06	30/07/2019	Normal	669059	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	CSM_BH06	CSM_BH06	28/08/2019	Normal	674722	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	CSM_BH06	CSM_BH06	26/09/2019	Normal	679636	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	CSM_BH06	CSM_BH06	17/10/2019	Normal	683453	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	CSM_BH06	CSM_BH06	13/11/2019	Normal	688512	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1

| | - standard 16 | | | | | | | | | | Phenols - Halogenated | | | | | | | | | Phenols - Non-Halogenated | | | | | | | | | |

Appendix B
Table B2
Groundwater analytical results - September 2018 to September 2020

	- standard 16										Phenols - Halogenated									Phenols - Non-Halogenated																			
	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene-PAH	Phenanthrene	Pyrene	Sum of standard 16 PAHs	PAHs (Sum of total) - Lab calc	Total 8 PAHs (as BaP TEQ)(zero LOR) - Lab Calc	2-Chlorophenol	2,4-Dichlorophenol	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,6-Dichlorophenol	4-Chloro-3-methylphenol	Pentachlorophenol	tetrachlorophenols	Phenols (Total Halogenated)	Phenol	2-Nitrophenol	2-Methylphenol (o-Cresol)	3,4-Methylphenol (m,p-cresol)	2,4-Dimethylphenol	2,4-Dinitrophenol	4,6-Dinitro-2-methylphenol	4,6-Dinitro-o-cyclohexyl phenol	4-Nitrophenol	Phenols (Total Non Halogenated)	Organochlorine pesticides EPAVic	Other organochlorine pesticides EPAVic	4,4'-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC	Chlordane	Chlordane (cis)	Chlordane (trans)	d-BHC
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.5	0.01	0.5	1	1	1	1	1	1	2	30	10	1	1	1	2	1	30	30	100	30	100	1	1	0.002	0.002	0.001	0.002	0.002	0.001	0.001	0.001	0.002
NEPM 2013 Table 1A(4) HSL D Comm/Ind GW for Vapour Intrusion, Sand																																							
2-4m					NL																																		
4-8m					NL																																		
>8m					NL																																		
NEPM 2013 Table 1C GILs, Marine Waters					50[#7]												11[#5]			400																			
NHMRC Recreational Guidelines 2008 - Health											***3000***	***2000***		***200***			***100***																		***3***				

Site_ID	Field_ID	Location_Code	Sampled_Date_Time	Sample_Type	Lab_Report_Number																																			
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	20/05/2020	Normal	720682	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	19/06/2020	Normal	726825	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	19/06/2020	Normal	ES2021404	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.002	<0.002	<0.001	<0.002	<0.002	<0.001	<0.001	<0.001	<0.002
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	16/07/2020	Normal	732590	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	QC02	CSM_BH09S	16/07/2020	Field_D	732590	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	18/08/2020	Normal	738860	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	QC02	CSM_BH09S	18/08/2020	Field_D	738860	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	16/09/2020	Normal	744463	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	16/04/2019	Normal	651825	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	13/05/2019	Normal	656080	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	11/06/2019	Normal	660130	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	30/07/2019	Normal	669059	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	29/08/2019	Normal	674722	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	25/09/2019	Normal	679636	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	16/10/2019	Normal	683453	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	QC01	CSM_BH10S	16/10/2019	Interlab_D	ES1934142	<1	<1	<1	<1	<1	<1	<1	<0.5	-	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	14/11/2019	Normal	688512	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	QC02	CSM_BH10S	14/11/2019	Field_D	688512	<1	<1	<1	<1	<1	<1	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	17/12/2019	Normal	694466	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	20/01/2020	Normal	698379	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	QC01	CSM_BH10S	20/01/2020	Interlab_D	ES2001825	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	25/02/2020	Normal	704673	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	25/02/2020	Normal	706746	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	17/03/2020	Normal	708508	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	QC02	CSM_BH10S	17/03/2020	Field_D	708508	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	15/04/2020	Normal	714027	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	QC02	CSM_BH10S	15/04/2020	Field_D	714027	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	18/05/2020	Normal	720682	<0.01	<0.01	<0.01	<0.01	0.1	<0.01	<0.01	-	0.1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	QC02	CSM_BH10S	20/05/2020	Field_D	720682	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	19/06/2020	Normal	726825	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	19/06/2020	Normal	ES2021404	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.002	<0.002	<0.001	<0.002	<0.002	<0.001	<0.001	<0.001	<0.002
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	15/07/2020	Normal	732590	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	17/08/2020	Normal	738860	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	15/09/2020	Normal	744463	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH10	GASW_BH10	5/06/2019	Normal	659250	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	GASW_BH10	GASW_BH10	30/07/2019	Normal	669059	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	GASW_BH10	GASW_BH10	28/08/2019	Normal	674722	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	GASW_BH10	GASW_BH10	26/09/2019	Normal	679636	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	GASW_BH10	GASW_BH10	17/10/2019	Normal	683453	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH10	GASW_BH10	13/11/2019	Normal	688512	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH10	GASW_BH10	16/12/2019	Normal	694466	<0.01	<0.01	<0.01	<0.01	0.04	<0.01	<0.01	-	0.04	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH10	GASW_BH10	21/01/2020	Normal	698379	<0.01	<0.01	<0.01	<0.01	0.05	<0.01	<0.01	-	0.05	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	11	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH10	GASW_BH10	24/02/2020	Normal	704673	<0.01	<0.01	<0.01	<0.01	0.09	<0.01	<0.01	-	0.09	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	15	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	GASW_BH10	GASW_BH10	24/02/2020	Normal	706746	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH10	GASW_BH10	18/03/2020	Normal	708508	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	33	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH10	GASW_BH10	14/04/2020	Normal	714027	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	60	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH10	GASW_BH10	19/05/2020	Normal	720682	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	45	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH10	GASW_BH10	18/06/2020	Normal	726825	<0.01	<0.01	<0.01	<0.01	0.04	0.01	0.02	-	0.07	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	33	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH10	GASW_BH10	15/07/2020	Normal	732590	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	68	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH10	GASW_BH10	17/08/2020	Normal	738860	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH10	GASW_BH10	14/09/2020	Normal	744463	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	26	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH11	GASW_BH11	5/06/2019	Normal	659250	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	QC02	GASW_BH11	5/06/2019	Field_D	659250	<1	<1	<1	<1	<1	<1	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH11	GASW_BH11	30/07/2019	Normal	669059	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	GASW_BH11	GASW_BH11	28/08/2019	Normal	674722	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	GASW_BH11	GASW_BH11	25/09/2019	Normal	679636	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	GASW_BH11	GASW_BH11	16/10/2019	Normal	683453	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH11	GASW_BH11	14/11/2019	Normal	688512	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH11	GASW_BH11	16/12/2019	Normal	694466	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	-	0.02	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH11	GASW_BH11	22/01/2020	Normal	698379	<0.01	<0.01	<0.01	<0.01	0.04	<0.01	<0.01	-	0.04	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH11	GASW_BH11	24/02/2020	Normal	704673	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1

Appendix B
Table B2
Groundwater analytical results - September 2018 to September 2020

	- standard 16										Phenols - Halogenated									Phenols - Non-Halogenated																			
	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene-PAH	Phenanthrene	Pyrene	Sum of standard 16 PAHs	PAHs (Sum of total) - Lab calc	Total 8 PAHs (as BaP TEQ)(zero LOR) - Lab Calc	2-Chlorophenol	2,4-Dichlorophenol	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,6-Dichlorophenol	4-Chloro-3-methylphenol	Pentachlorophenol	tetrachlorophenols	Phenols (Total Halogenated)	Phenol	2-Nitrophenol	2-Methylphenol (o-Cresol)	3,4-Methylphenol (m,p-cresol)	2,4-Dimethylphenol	2,4-Dinitrophenol	4,6-Dinitro-2-methylphenol	4,6-Dinitro-o-cyclohexyl phenol	4-Nitrophenol	Phenols (Total Non Halogenated)	Organochlorine pesticides EPAVic	Other organochlorine pesticides EPAVic	4,4'-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC	Chlordane	Chlordane (cis)	Chlordane (trans)	d-BHC
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.5	0.01	0.5	1	1	1	1	1	1	2	30	10	1	1	1	2	1	30	30	100	30	100	1	1	0.002	0.002	0.001	0.002	0.002	0.001	0.001	0.001	0.002
NEPM 2013 Table 1A(4) HSL D Comm/Ind GW for Vapour Intrusion, Sand																																							
2-4m					NL																																		
4-8m					NL																																		
>8m					NL																																		
NEPM 2013 Table 1C GILs, Marine Waters					50[#7]												11[#5]			400																			
NHMRC Recreational Guidelines 2008 - Health											***3000***	***2000***		***200***			***100***																		***3***					

Site_ID	Field_ID	Location_Code	Sampled_Date_Time	Sample_Type	Lab_Report_Number																																				
Sydney Metro - Central	GASW_BH11	GASW_BH11	24/02/2020	Normal	706746	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH11	GASW_BH11	17/03/2020	Normal	708508	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH11	GASW_BH11	16/04/2020	Normal	714027	<0.01	0.06	<0.01	<0.01	<0.01	0.04	0.04	-	0.2	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH11	GASW_BH11	20/05/2020	Normal	720682	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH11	GASW_BH11	19/06/2020	Normal	726825	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH11	GASW_BH11	16/07/2020	Normal	732590	<0.01	0.04	0.02	<0.01	0.08	0.07	0.04	-	0.28	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH11	GASW_BH11	17/08/2020	Normal	738860	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	58	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH11	GASW_BH11	16/09/2020	Normal	744463	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	BH23	GASW_BH23	23/08/2019	Normal	ES1926979	<1	<1	1.3	<1	4	1.7	<1	7	-	<0.5	<1	<1	<1	<1	<1	<1	<2	-	-	16.4	<1	8	4.7	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GW-BR1	GASW_BH23	23/08/2019	Field_D	ES1926979	<1	<1	<1	<1	2.9	1.6	<1	4.5	-	<0.5	<1	<1	<1	<1	<1	<1	<2	-	-	10.2	<1	6.2	4.3	1.6	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH23	GASW_BH23	25/09/2019	Normal	679636	<1	<1	<1	<1	2	<1	<1	-	2	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	17	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	GASW_BH23	GASW_BH23	16/10/2019	Normal	683453	<1	<1	<1	<1	4	<1	<1	-	4	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	22	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH23	GASW_BH23	14/11/2019	Normal	688512	<1	<1	2	<1	7	1	<1	-	11	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	67	<10	6	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH23	GASW_BH23	16/12/2019	Normal	694466	<0.01	0.29	0.3	<0.01	0.28	0.1	0.38	-	1.74	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH23	GASW_BH23	22/01/2020	Normal	698379	<0.01	0.08	0.18	<0.01	0.49	0.08	0.09	-	1.13	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	37	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH23	GASW_BH23	24/02/2020	Normal	704673	<0.01	0.39	1.4	<0.01	9.1	1.6	0.4	-	14.88	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	21	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	GASW_BH23	GASW_BH23	24/02/2020	Normal	706746	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH23	GASW_BH23	17/03/2020	Normal	708508	<0.01	0.12	0.16	<0.01	0.43	0.07	0.17	-	1.21	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	6	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH23	GASW_BH23	16/04/2020	Normal	714027	<0.01	0.54	1	0.04	1.7	0.78	0.67	-	6.4	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	15	<10	5	<6	7	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH23	GASW_BH23	20/05/2020	Normal	720682	<0.01	0.6	0.42	<0.01	0.61	1	0.78	-	4.72	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH23	GASW_BH23	17/06/2020	Normal	726825	<0.01	0.25	0.19	0.03	0.25	0.21	0.31	-	1.87	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH23	GASW_BH23	16/07/2020	Normal	732590	<0.01	0.05	<0.01	<0.01	<0.01	<0.01	0.1	-	0.15	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH23	GASW_BH23	17/08/2020	Normal	738860	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH23	GASW_BH23	15/09/2020	Normal	744463	0.14	1.2	0.87	0.36	1.7	0.81	1.9	-	11.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	20	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GW-SR1	GASW_BH25A	23/08/2019	Interlab_D	673339	<1	<1	<1	<1	7	1	<1	-	8	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	6	<10	5	7	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	BH25a	GASW_BH25A	23/08/2019	Normal	ES1926979	<1	2.4	2.1	<1	9.6	3.7	2.8	23.3	-	<0.5	<1	<1	<1	<1	<1	<1	<2	-	-	7.7	<1	4.2	12	2.3	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	25/09/2019	Normal	679636	<1	<1	<1	<1	1	<1	<1	-	1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	GASW_BH25a	GASW_BH25A	16/10/2019	Normal	683453	<1	<1	<1	<1	2	<1	<1	-	2	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	11	<10	5	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	14/11/2019	Normal	688512	<1	<1	1	<1	3	<1	<1	-	4	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	53	<10	42	7	4	<30	<30	<100	<30	106	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	16/12/2019	Normal	694466	0.05	1.5	1.1	0.15	4.9	1.6	2	-	14.85	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	88	<10	46	55	6	<30	<30	<100	<30	195	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	22/01/2020	Normal	698379	<0.01	0.79	1.9	0.02	20	2.6	0.98	-	29.34	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	11	<10	7	11	8	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	24/02/2020	Normal	704673	0.02	1.2	1.6	0.09	13	1.8	1.5	-	22.42	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	31	<10	7	10	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	24/02/2020	Normal	706746	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH25a	GASW_BH25A	17/03/2020	Normal	708508	<0.01	0.51	0.68	0.02	6.4	0.75	0.62	-	9.89	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	89	<10	21	26	<3	<30	<30	<100	<30	136	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	16/04/2020	Normal	714027	0.03	0.91	2	0.07	26	3.6	1.5	-	37.35	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	35	<10	10	7	5	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	20/05/2020	Normal	720682	<0.01	1.7	2	0.05	28	4.6	2.4	-	44.11	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	37	<10	16	14	6	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	19/06/2020	Normal	726825	0.05	0.86	1.4	0.11	17	2.1	1.1	-	25.21	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	36	<10	27	19	16	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	16/07/2020	Normal	732590	<0.01	0.39	0.11	<0.01	0.17	0.28	0.45	-	1.77	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	11	<10	7	6	3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	17/08/2020	Normal	738860	<0.01	0.41	0.95	<0.01	15	1.3	0.6	-	19.31	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	35	<10	25	16	25	<30	<30	<100	<30	101	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	16/09/2020	Normal	744463	0.03	1.1	1.8	0.08	21	2.2	1.5	-	30.26	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	38	<10	26	14	6	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH7	GASW_BH7	5/06/2019	Normal	659250	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	QC01	GASW_BH7	5/06/2019	Interlab_D	ES1917381	<1	<1	<1	<1	<1	<1	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH7	GASW_BH7	30/07/2019	Normal	669059	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	GASW_BH7	GASW_BH7	28/08/2019	Normal	674722	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	GASW_BH7	GASW_BH7	25/09/2019	Normal	679636	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	GASW_BH7	GASW_BH7	16/10/2019	Normal	683453	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	5	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH7	GASW_BH7	14/11/2019	Normal	688512	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH7	GASW_BH7	16/12/2019	Normal	694466	<0.01	0.01	0.05	<0.01	0.3	0.01	0.02	-	0.46	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	4	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH7	GASW_BH7	22/01/2020	Normal	698379	<0.01	<0.01	<0.01	<0.01	0.17	<0.01	<0.01	-	0.23	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH7	GASW_BH7	24/02/2020	Normal	704673	<0.01	<0.01	<0.01	<0.01	0.17	<0.01	<0.01	-	0.17	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	GASW_BH7	GASW_BH7	24/02/2020	Normal	706746	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH7	GASW_BH7	17/03/2020	Normal	708508	<0.01	<0.01	<0.01	<0.01	0.1	<0.01	<0.01	-	0.1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT-BH039	SRT_BH039	7/09/2018	Normal	616629	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	QA02	SRT_BH039	7/09/2018	Interlab_D	ES1826658	<1	<1	<1	<1	<1	<1	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT-BH039	SRT_BH039	25/10/2018	Normal	624838	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	QA02	SRT_BH039	26/10/2018	Interlab_D	ES1832040	<1	<1	<1	<1	<1	<1	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT-BH047	SRT_BH047	6/09/2018	Normal	616629	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT-BH047	SRT_BH047	25/10/2018	Normal	624838	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT_BH047	SRT_BH047	26/11/2018	Normal	629922	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT_BH047	SRT_BH047	18/12/2018	Normal	634274	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT_BH047	SRT_BH047	17/01/2019	Normal	636542	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1

| | - standard 16 | | | | | | | | | | Phenols - Halogenated | | | | | | | | | Phenols - Non-Halogenated | | | | | | | | | |

	- standard 16										Phenols - Halogenated									Phenols - Non-Halogenated																				
	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene-PAH	Phenanthrene	Pyrene	Sum of standard 16 PAHs	PAHs (Sum of total) - Lab calc	Total 8 PAHs (as BaP TEQ)(zero LOR) - Lab Calc	2-Chlorophenol	2,4-Dichlorophenol	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,6-Dichlorophenol	4-Chloro-3-methylphenol	Pentachlorophenol	tetrachlorophenols	Phenols (Total Halogenated)	Phenol	2-Nitrophenol	2-Methylphenol (o-Cresol)	3,4-Methylphenol (m,p-cresol)	2,4-Dimethylphenol	2,4-Dinitrophenol	4,6-Dinitro-2-methylphenol	4,6-Dinitro-o-cyclohexyl phenol	4-Nitrophenol	Phenols (Total Non Halogenated)	Organochlorine pesticides EPAVic	Other organochlorine pesticides EPAVic	4,4'-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC	Chlordane	Chlordane (cis)	Chlordane (trans)	d-BHC
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.5	0.01	0.5	1	1	1	1	1	1	2	30	10	1	1	1	2	1	30	30	100	30	100	1	1	0.002	0.002	0.001	0.002	0.002	0.001	0.001	0.001	0.002
NEPM 2013 Table 1A(4) HSL D Comm/Ind GW for Vapour Intrusion, Sand																																							
2-4m					NL																																		
4-8m					NL																																		
>8m					NL																																		
NEPM 2013 Table 1C GILs, Marine Waters					50[#7]												11[#5]			400																			
NHMRC Recreational Guidelines 2008 - Health											***3000***	***2000***		***200***			***100***																		***3***					

Site_ID	Field_ID	Location_Code	Sampled_Date_Time	Sample_Type	Lab_Report_Number																																				
Sydney Metro - Central	SRT_BH059	SRT_BH059	17/04/2019	Normal	651825	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT_BH059	SRT_BH059	15/05/2019	Normal	656080	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT_BH059	SRT_BH059	7/06/2019	Normal	660130	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT-BH059	SRT_BH059	31/07/2019	Normal	669059	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT_BH059	SRT_BH059	30/08/2019	Normal	674722	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT_BH059	SRT_BH059	27/09/2019	Normal	679636	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT_BH059	SRT_BH059	18/10/2019	Normal	683453	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT_BH059	SRT_BH059	15/11/2019	Normal	688512	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT_BH059	SRT_BH059	18/12/2019	Normal	694466	<0.01	<0.01	<0.01	<0.01	0.03	<0.01	<0.01	-	0.03	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT_BH059	SRT_BH059	20/01/2020	Normal	698379	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT_BH059	SRT_BH059	26/02/2020	Normal	704673	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT_BH059	SRT_BH059	26/02/2020	Normal	706746	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH059	SRT_BH059	16/03/2020	Normal	708508	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT_BH059	SRT_BH059	15/04/2020	Normal	714027	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT_BH059	SRT_BH059	18/05/2020	Normal	720682	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH059	SRT_BH059	17/06/2020	Normal	726825	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH059	SRT_BH059	17/07/2020	Normal	732590	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH059	SRT_BH059	18/08/2020	Normal	738860	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH059	SRT_BH059	15/09/2020	Normal	744463	<0.01	0.09	<0.01	<0.01	<0.01	0.08	0.11	-	0.39	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH060	SRT_BH060	16/03/2020	Normal	708508	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT_BH060	SRT_BH060	15/04/2020	Normal	714027	<0.01	0.07	<0.01	<0.01	<0.01	0.04	0.09	-	0.22	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT-BH063	SRT_BH063	6/09/2018	Normal	616629	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT-BH063	SRT_BH063	25/10/2018	Normal	624838	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT_BH063	SRT_BH063	26/11/2018	Normal	629922	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	QA02	SRT_BH063	27/11/2018	Interlab_D	ES1835581	<1	<1	<1	<1	<1	<1	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	QA01	SRT_BH063	17/12/2018	Field_D	634274	<1	<1	<1	<1	<1	<1	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH063	SRT_BH063	17/12/2018	Normal	634274	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	QA01	SRT_BH063	17/01/2019	Field_D	636542	<1	<1	<1	<1	<1	<1	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH063	SRT_BH063	17/01/2019	Normal	636542	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT_BH063	SRT_BH063	21/02/2019	Normal	641720	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	QA02	SRT_BH063	21/02/2019	Interlab_D	ES1905610	<1	<1	<1	<1	<1	<1	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH063	SRT_BH063	18/04/2019	Normal	651825	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT_BH063	SRT_BH063	15/05/2019	Normal	656080	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT_BH063	SRT_BH063	7/06/2019	Normal	660130	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT-BH063	SRT_BH063	29/07/2019	Normal	669059	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT_BH063	SRT_BH063	28/08/2019	Normal	674722	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT-BH064	SRT_BH064	6/09/2018	Normal	616629	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	QA01	SRT_BH082	25/10/2018	Field_D	624838	<1	<1	<1	<1	<1	<1	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT-BH082	SRT_BH082	25/10/2018	Normal	624838	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	QA01	SRT_BH082	26/11/2018	Field_D	629922	<1	<1	<1	<1	<1	<1	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH082	SRT_BH082	26/11/2018	Normal	629922	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	QA01	SRT_CBH001	6/09/2018	Field_D	616629	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT-CBH001	SRT_CBH001	6/09/2018	Normal	616629	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT-CBH001	SRT_CBH001	25/10/2018	Normal	624838	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT_CBH001	SRT_CBH001	26/11/2018	Normal	629922	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT-CBH007	SRT_CBH007	6/09/2018	Normal	616629	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT-CBH015	SRT_CBH015	7/09/2018	Normal	616629	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT-CBH015	SRT_CBH015	25/10/2018	Normal	624838	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	26/11/2018	Normal	629922	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	17/12/2018	Normal	634274	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	QA02	SRT_CBH015	17/12/2018	Interlab_D	ES1838345	<1	<1	<1	<1	<1	<1	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	18/01/2019	Normal	636542	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	QA02	SRT_CBH015	18/01/2019	Interlab_D	ES1901871	<1	<1	<1	<1	<1	<1	<1	-	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	20/02/2019	Normal	641720	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	17/04/2019	Normal	651825	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	15/05/2019	Normal	656080	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	7/06/2019	Normal	660130	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	QC02	SRT_CBH015	31/07/2019	Field_D	669059	<1	<1	<1	<1	<1	<1	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT-CBH015	SRT_CBH015	31/07/2019	Normal	669059	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	QC02	SRT_CBH015	30/08/2019	Field_D	674722	<1	<1	<1	<1	<1	<1	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

	- standard 16										Phenols - Halogenated									Phenols - Non-Halogenated																					
	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene-PAH	Phenanthrene	Pyrene	Sum of standard 16 PAHs	PAHs (Sum of total) - Lab calc	Total 8 PAHs (as BaP TEQ)(zero LOR) - Lab Calc	2-Chlorophenol	2,4-Dichlorophenol	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,6-Dichlorophenol	4-Chloro-3-methylphenol	Pentachlorophenol	tetrachlorophenols	Phenols (Total Halogenated)	Phenol	2-Nitrophenol	2-Methylphenol (o-Cresol)	3,4-Methylphenol (m,p-cresol)	2,4-Dimethylphenol	2,4-Dinitrophenol	4,6-Dinitro-2-methylphenol	4,6-Dinitro-o-cyclohexyl phenol	4-Nitrophenol	Phenols (Total Non Halogenated)	Organochlorine pesticides EPAVic	Other organochlorine pesticides EPAVic	4,4'-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC	Chlordane	Chlordane (cis)	Chlordane (trans)	d-BHC
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.5	0.01	0.5	1	1	1	1	1	1	2	30	10	1	1	1	2	1	30	30	100	30	100	1	1	0.002	0.002	0.001	0.002	0.002	0.001	0.001	0.001	0.002
NEPM 2013 Table 1A(4) HSL D Comm/Ind GW for Vapour Intrusion, Sand																																							
2-4m					NL																																		
4-8m					NL																																		
>8m					NL																																		
NEPM 2013 Table 1C GILs, Marine Waters					50[#7]												11[#5]			400																			
NHMRC Recreational Guidelines 2008 - Health											***3000***	***2000***		***200***			***100***																		***3***					

Site_ID	Field_ID	Location_Code	Sampled_Date_Time	Sample_Type	Lab_Report_Number																																					
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	30/08/2019	Normal	674722	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	27/09/2019	Normal	679636	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	18/10/2019	Normal	683453	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	15/11/2019	Normal	688512	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	18/12/2019	Normal	694466	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT-CBH017	SRT_CBH017	7/09/2018	Normal	616629	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT-CBH017	SRT_CBH017	25/10/2018	Normal	624838	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	26/11/2018	Normal	629922	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	17/12/2018	Normal	634274	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	18/01/2019	Normal	636542	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	QA01	SRT_CBH017	20/02/2019	Field_D	641720	<1	<1	<1	<1	<1	<1	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	20/02/2019	Normal	641720	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	17/04/2019	Normal	651825	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	15/05/2019	Normal	656080	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	7/06/2019	Normal	660130	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT-CBH017	SRT_CBH017	31/07/2019	Normal	669059	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	30/08/2019	Normal	674722	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	QC02	SRT_CBH017	27/09/2019	Field_D	679636	<1	<1	<1	<1	<1	<1	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	27/09/2019	Normal	679636	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	18/10/2019	Normal	683453	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	15/11/2019	Normal	688512	<1	<1	<1	<1	<1	<1	<1	-	<1	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	18/12/2019	Normal	694466	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	-	0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	20/01/2020	Normal	698379	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	-	<3	<3	<10	<10	<3	<10	<10	<30	<10	<3	<10	<3	<6	<3	<30	<30	<100	<30	<100	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	-	-	<0.1

Statistical Summary

Number of Results	366	366	366	366	366	366	366	8	358	28	317	317	317	317	317	317	317	314	314	317	317	317	317	317	314	314	314	314	314	215	215	224	224	224	224	224	224	9	9	224
Number of Detects	6	28	24	11	49	32	31	3	53	0	0	0	0	0	0	0	0	0	0	27	0	18	24	13	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.5	<0.01	<0.05	<1	<1	<1	<1	<1	<1	<2	<30	<10	<3	<1	<3	4.3	1.6	<30	<30	<100	<30	<100	<1	<1	<0.002	<0.002	<0.001	<0.002	<0.002	<0.001	<0.001	<0.001	<0.002
Minimum Detect	0.02	0.01	0.02	0.02	0.01	0.01	0.02	4.5	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4	ND	4.2	4.3	1.6	ND	ND	ND	ND	101	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration	<1	2.4	2.1	<1	28	4.6	2.8	23.3	44.11	<0.5	<3	<3	<10	<10	<3	<10	<10	<30	<10	140	<10	46	68	25	<30	<30	<100	<30	195	<1	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<1	<0.001	<0.001	<0.2
Maximum Detect	0.14	2.4	2.1	0.36	28	4.6	2.8	23.3	44.11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	140	ND	46	68	25	ND	ND	ND	ND	195	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration	0.28	0.32	0.34	0.28	0.84	0.37	0.34	4.5	1.1	0.17	1.5	1.5	5	5	1.5	5	5	15	5	4.1	5	2.3	4.5	1.7	15	15	50	15	51	0.5	0.5	0.048	0.048	0.048	0.048	0.048	0.48	0.0005	0.0005	0.048
Median Concentration	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.25	0.5	0.25	1.5	1.5	5	5	1.5	5	5	15	5	1.5	5	1.5	3	1.5	15	15	50	15	50	0.5	0.5	0.05	0.05	0.05	0.05	0.05	0.5	0.0005	0.0005	0.05
Standard Deviation	0.24	0.29	0.35	0.24	2.9	0.48	0.34	8	4.5	0.11	0.097	0.097	0.44	0.44	0.097	0.44	0.39	0	0	13	0.44	4.4	7.6	1.7	0	0	0	0	12	0	0	0.011	0.011	0.011	0.011	0.011	0.098	0	0	0.011
Number of Guideline Exceedances	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Env Stds Comments

#1:Not limiting: Derived water HSL exceeds water solubility limit
#2:To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
#3:Values calculated using hardness of 30 mg/L CaCO3. Chemical for which possible bioaccumulation and secondary poisoning effects should be considered.
#4:Values calculated using hardness of 30 mg/L CaCO3. Refer ANZECC & ARMCANZ (2000) for site specific hardness guidance
#5:Chemical for which possible bioaccumulation and secondary poisoning effects should be considered, refer to ANZECC & ARMCANZ (2000) for further guidance.
#6:Values calculated using hardness of 30 mg/L CaCO3. Figure may not protect key species from chronic toxicity. Refer ANZECC &
#7:Figure may not protect key species from chronic toxicity, refer to ANZECC & ARMCANZ (2000) for further guidance.

Appendix B
Table B2
Groundwater analytical results - September 2018 to September 2020

	OC Pesticides																		OP Pesticides																											
	4,4 DDD	4,4 DDT	DDT+DDE+DDD - Lab Calc	Dieldrin	Endosulfan	Endosulfan I (alpha)	Endosulfan II (beta)	Endosulfan Sulfate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Oxychlordane	Toxaphene	Tokuthion	Azinphos methyl	Bolstar (Sulprofos)	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Coumaphos	Demeton-O	Demeton-S	Diazinon	Dichlorvos	Dimethoate	Disulfoton	EPN	Ethion	Ethoprop	Fenitrothion	Fensulfothion	Fenthion	Malathion	Merphos	Methyl parathion
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	10	2	2	2	2	0.005	2	20	2	20	0.005	2	2	2	2	2	2	2	2	2	0.002	2	2
NEPM 2013 Table 1A(4) HSL D Comm/Ind GW for Vapour Intrusion, Sand																																									
2-4m																																									
4-8m																																									
>8m																																									
NEPM 2013 Table 1C GILs, Marine Waters					0.005[#5]				0.004[#5]														0.009[#5]																			
NHMRC Recreational Guidelines 2008 - Health		***90***			***200***							***100***	***3***			***3000***				***300***	***100***		***100***					***40***	***50***	***70***	***40***		***40***	***10***	***70***	***100***	***70***	***700***		***7***
Site_ID	**Field_ID**	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**	**Lab_Report_Number**																																					
Sydney Metro - Central	CSM_BH02	CSM_BH02	16/04/2019	Normal	651825	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	CSM_BH02	CSM_BH02	14/05/2019	Normal	656080	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	CSM_BH02	CSM_BH02	6/06/2019	Normal	660130	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	CSM_BH02	CSM_BH02	30/07/2019	Normal	669059	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	CSM_BH02	CSM_BH02	29/08/2019	Normal	674722	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	CSM_BH02	CSM_BH02	26/09/2019	Normal	679636	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	CSM_BH02	CSM_BH02	17/10/2019	Normal	683453	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	CSM_BH02	CSM_BH02	13/11/2019	Normal	688512	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	CSM_BH02	CSM_BH02	17/12/2019	Normal	694466	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	CSM_BH02	CSM_BH02	21/01/2020	Normal	698379	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	CSM_BH02	CSM_BH02	25/02/2020	Normal	704673	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	CSM_BH02	CSM_BH02	25/02/2020	Normal	706746	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH02	CSM_BH02	18/03/2020	Normal	708508	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	CSM_BH02	CSM_BH02	14/04/2020	Normal	714027	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	CSM_BH02	CSM_BH02	19/05/2020	Normal	720682	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH02	CSM_BH02	18/06/2020	Normal	726825	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	QC02	CSM_BH02	18/06/2020	Field_D	726825	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH02	CSM_BH02	18/06/2020	Normal	ES2021404	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	-	-	-	-	-	<0.005	-	-	-	<0.005	-	-	-	-	-	-	-	<0.002	-	-
Sydney Metro - Central	CSM_BH02	CSM_BH02	15/07/2020	Normal	732590	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH02	CSM_BH02	14/09/2020	Normal	744463	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH04	CSM_BH04	16/04/2019	Normal	651825	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	CSM_BH04	CSM_BH04	13/05/2019	Normal	656080	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	CSM_BH04	CSM_BH04	11/06/2019	Normal	660130	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	CSM_BH04	CSM_BH04	30/07/2019	Normal	669059	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	CSM_BH04	CSM_BH04	29/08/2019	Normal	674722	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	CSM_BH04	CSM_BH04	26/09/2019	Normal	679636	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	CSM_BH04	CSM_BH04	17/10/2019	Normal	683453	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	QC02	CSM_BH04	17/10/2019	Field_D	683453	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH04	CSM_BH04	13/11/2019	Normal	688512	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	QC01	CSM_BH04	13/11/2019	Interlab_D	ES1937682	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH04	CSM_BH04	17/12/2019	Normal	694466	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	CSM_BH04	CSM_BH04	21/01/2020	Normal	698379	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	QC02	CSM_BH04	21/01/2020	Field_D	698379	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH04	CSM_BH04	25/02/2020	Normal	704673	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	CSM_BH04	CSM_BH04	25/02/2020	Normal	706746	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	QC02	CSM_BH04	25/02/2020	Field_D	704673	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH04	CSM_BH04	18/03/2020	Normal	708508	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<20	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	CSM_BH04	CSM_BH04	14/04/2020	Normal	714027	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	CSM_BH04	CSM_BH04	20/05/2020	Normal	720682	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH04	CSM_BH04	18/06/2020	Normal	726825	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH04	CSM_BH04	18/06/2020	Normal	ES2021404	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	-	-	-	-	-	<0.005	-	-	-	<0.005	-	-	-	-	-	-	-	<0.002	-	-
Sydney Metro - Central	CSM_BH04	CSM_BH04	15/07/2020	Normal	732590	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH04	CSM_BH04	17/08/2020	Normal	738860	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	QC01	CSM_BH04	17/08/2020	Interlab_D	ES2028968	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH04	CSM_BH04	14/09/2020	Normal	744463	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH05	CSM_BH05	17/04/2019	Normal	651825	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	CSM_BH05	CSM_BH05	13/05/2019	Normal	656080	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	CSM_BH05	CSM_BH05	11/06/2019	Normal	660130	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	CSM_BH05	CSM_BH05	29/07/2019	Normal	669059	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	CSM_BH06	CSM_BH06	18/04/2019	Normal	651825	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	CSM_BH06	CSM_BH06	14/05/2019	Normal	656080	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	QC02	CSM_BH06	14/05/2019	Field_D	656080	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH06	CSM_BH06	6/06/2019	Normal	660130	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	QC04	CSM_BH06	8/06/2019	Field_D	660130	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH06	CSM_BH06	30/07/2019	Normal	669059	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	CSM_BH06	CSM_BH06	28/08/2019	Normal	674722	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	CSM_BH06	CSM_BH06	26/09/2019	Normal	679636	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	CSM_BH06	CSM_BH06	17/10/2019	Normal	683453	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	CSM_BH06	CSM_BH06	13/11/2019	Normal	688512	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2

Appendix B
Table B2
Groundwater analytical results - September 2018 to September 2020

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Table B2
Groundwater analytical results - September 2018 to September 2020

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Groundwater analytical results - September 2018 to September 2020

	OC Pesticides																		OP Pesticides																									
	4,4 DDD	4,4 DDT	DDT+DDE+DDD - Lab Calc	Dieldrin	Endosulfan	Endosulfan I (alpha)	Endosulfan II (beta)	Endosulfan Sulfate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Oxychlordane	Toxaphene	Tokuthion	Azinphos methyl	Bolstar (Sulprofos)	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Coumaphos	Demeton-O	Demeton-S	Diazinon	Dichlorvos	Dimethoate	Disulfoton	EPN	Ethion	Ethoprop	Fenitrothion	Fensulfothion	Fenthion	Malathion	Merphos	Methyl parathion
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	10	2	2	2	2	0.005	2	20	2	20	0.005	2	2	2	2	2	2	2	2	2	0.002	2	2
NEPM 2013 Table 1A(4) HSL D Comm/Ind GW for Vapour Intrusion, Sand																																								
2-4m																																								
4-8m																																								
>8m																																								
NEPM 2013 Table 1C GILs, Marine Waters					0.005[#5]				0.004[#5]														0.009[#5]																	
NHMRC Recreational Guidelines 2008 - Health		***90***			***200***							***100***	***3***			***3000***				***300***	***100***		***100***					***40***	***50***	***70***	***40***		***40***	***10***	***70***	***100***	***70***	***700***		***7***

Site_ID	Field_ID	Location_Code	Sampled_Date_Time	Sample_Type	Lab_Report_Number																																							
Sydney Metro - Central	GASW_BH11	GASW_BH11	24/02/2020	Normal	706746	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH11	GASW_BH11	17/03/2020	Normal	708508	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH11	GASW_BH11	16/04/2020	Normal	714027	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH11	GASW_BH11	20/05/2020	Normal	720682	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH11	GASW_BH11	19/06/2020	Normal	726825	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH11	GASW_BH11	16/07/2020	Normal	732590	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH11	GASW_BH11	17/08/2020	Normal	738860	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH11	GASW_BH11	16/09/2020	Normal	744463	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	BH23	GASW_BH23	23/08/2019	Normal	ES1926979	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GW-BR1	GASW_BH23	23/08/2019	Field_D	ES1926979	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH23	GASW_BH23	25/09/2019	Normal	679636	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	GASW_BH23	GASW_BH23	16/10/2019	Normal	683453	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH23	GASW_BH23	14/11/2019	Normal	688512	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH23	GASW_BH23	16/12/2019	Normal	694466	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH23	GASW_BH23	22/01/2020	Normal	698379	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH23	GASW_BH23	24/02/2020	Normal	704673	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	GASW_BH23	GASW_BH23	24/02/2020	Normal	706746	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH23	GASW_BH23	17/03/2020	Normal	708508	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH23	GASW_BH23	16/04/2020	Normal	714027	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH23	GASW_BH23	20/05/2020	Normal	720682	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH23	GASW_BH23	17/06/2020	Normal	726825	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH23	GASW_BH23	16/07/2020	Normal	732590	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH23	GASW_BH23	17/08/2020	Normal	738860	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH23	GASW_BH23	15/09/2020	Normal	744463	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GW-SR1	GASW_BH25A	23/08/2019	Interlab_D	673339	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	BH25a	GASW_BH25A	23/08/2019	Normal	ES1926979	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	25/09/2019	Normal	679636	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	GASW_BH25a	GASW_BH25A	16/10/2019	Normal	683453	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	14/11/2019	Normal	688512	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	16/12/2019	Normal	694466	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	22/01/2020	Normal	698379	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	24/02/2020	Normal	704673	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	24/02/2020	Normal	706746	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH25a	GASW_BH25A	17/03/2020	Normal	708508	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	16/04/2020	Normal	714027	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	20/05/2020	Normal	720682	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	19/06/2020	Normal	726825	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	16/07/2020	Normal	732590	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	17/08/2020	Normal	738860	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH25A	GASW_BH25A	16/09/2020	Normal	744463	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH7	GASW_BH7	5/06/2019	Normal	659250	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	QC01	GASW_BH7	5/06/2019	Interlab_D	ES1917381	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH7	GASW_BH7	30/07/2019	Normal	669059	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	GASW_BH7	GASW_BH7	28/08/2019	Normal	674722	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	GASW_BH7	GASW_BH7	25/09/2019	Normal	679636	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	GASW_BH7	GASW_BH7	16/10/2019	Normal	683453	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH7	GASW_BH7	14/11/2019	Normal	688512	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH7	GASW_BH7	16/12/2019	Normal	694466	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH7	GASW_BH7	22/01/2020	Normal	698379	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH7	GASW_BH7	24/02/2020	Normal	704673	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	GASW_BH7	GASW_BH7	24/02/2020	Normal	706746	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH7	GASW_BH7	17/03/2020	Normal	708508	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT-BH039	SRT_BH039	7/09/2018	Normal	616629	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	QA02	SRT_BH039	7/09/2018	Interlab_D	ES1826658	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT-BH039	SRT_BH039	25/10/2018	Normal	624838	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	QA02	SRT_BH039	26/10/2018	Interlab_D	ES1832040	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT-BH047	SRT_BH047	6/09/2018	Normal	616629	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT-BH047	SRT_BH047	25/10/2018	Normal	624838	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH047	SRT_BH047	26/11/2018	Normal	629922	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH047	SRT_BH047	18/12/2018	Normal	634274	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH047	SRT_BH047	17/01/2019	Normal	636542	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2

Appendix B
Table B2
Groundwater analytical results - September 2018 to September 2020

	OC Pesticides																		OP Pesticides																									
	4,4 DDD	4,4 DDT	DDT+DDE+DDD - Lab Calc	Dieldrin	Endosulfan	Endosulfan I (alpha)	Endosulfan II (beta)	Endosulfan Sulfate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Oxychlordane	Toxaphene	Tokuthion	Azinphos methyl	Bolstar (Sulprofos)	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Coumaphos	Demeton-O	Demeton-S	Diazinon	Dichlorvos	Dimethoate	Disulfoton	EPN	Ethion	Ethoprop	Fenitrothion	Fensulfothion	Fenthion	Malathion	Merphos	Methyl parathion
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	10	2	2	2	2	0.005	2	20	2	20	0.005	2	2	2	2	2	2	2	2	2	0.002	2	2
NEPM 2013 Table 1A(4) HSL D Comm/Ind GW for Vapour Intrusion, Sand																																									
2-4m																																									
4-8m																																									
>8m																																									
NEPM 2013 Table 1C GILs, Marine Waters					0.005[#5]				0.004[#5]														0.009[#5]																		
NHMRC Recreational Guidelines 2008 - Health		***90***			***200***							***100***	***3***			***3000***				***300***	***100***		***100***					***40***	***50***	***70***	***40***		***40***	***10***	***70***	***100***	***70***	***700***		***7***

Site_ID	Field_ID	Location_Code	Sampled_Date_Time	Sample_Type	Lab_Report_Number																																							
Sydney Metro - Central	SRT_BH047	SRT_BH047	20/02/2019	Normal	641720	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH047	SRT_BH047	16/04/2019	Normal	651825	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH047	SRT_BH047	14/05/2019	Normal	656080	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH047	SRT_BH047	7/06/2019	Normal	660130	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT-BH047	SRT_BH047	31/07/2019	Normal	669059	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH047	SRT_BH047	30/08/2019	Normal	674722	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH047	SRT_BH047	27/09/2019	Normal	679636	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH047	SRT_BH047	18/10/2019	Normal	683453	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH047	SRT_BH047	15/11/2019	Normal	688512	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH047	SRT_BH047	18/12/2019	Normal	694466	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH047	SRT_BH047	20/01/2020	Normal	698379	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH047	SRT_BH047	26/02/2020	Normal	704673	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH047	SRT_BH047	26/02/2020	Normal	706746	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH047	SRT_BH047	16/03/2020	Normal	708508	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH047	SRT_BH047	15/04/2020	Normal	714027	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH047	SRT_BH047	18/05/2020	Normal	720682	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH047	SRT_BH047	17/06/2020	Normal	726825	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH047	SRT_BH047	17/06/2020	Normal	ES2021404	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	-	-	-	-	-	<0.005	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	<0.002	-	-
Sydney Metro - Central	SRT_BH047	SRT_BH047	17/07/2020	Normal	732590	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH047	SRT_BH047	19/08/2020	Normal	738860	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH047	SRT_BH047	15/09/2020	Normal	744463	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT-BH048	SRT_BH048	6/09/2018	Normal	616629	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT-BH048	SRT_BH048	25/10/2018	Normal	624838	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH048	SRT_BH048	26/11/2018	Normal	629922	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH050	SRT_BH050	16/03/2020	Normal	708508	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH050	SRT_BH050	15/04/2020	Normal	714027	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH050	SRT_BH050	17/06/2020	Normal	726825	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH050	SRT_BH050	17/07/2020	Normal	732590	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH050	SRT_BH050	19/08/2020	Normal	738860	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT-BH052	SRT_BH052	25/10/2018	Normal	624838	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH052	SRT_BH052	26/11/2018	Normal	629922	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH052	SRT_BH052	18/12/2018	Normal	634274	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH052	SRT_BH052	17/01/2019	Normal	636542	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH052	SRT_BH052	20/02/2019	Normal	641720	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH052	SRT_BH052	16/04/2019	Normal	651825	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH052	SRT_BH052	14/05/2019	Normal	656080	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH052	SRT_BH052	7/06/2019	Normal	660130	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT-BH052	SRT_BH052	31/07/2019	Normal	669059	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH052	SRT_BH052	30/08/2019	Normal	674722	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH052	SRT_BH052	27/09/2019	Normal	679636	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH052	SRT_BH052	18/10/2019	Normal	683453	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH052	SRT_BH052	15/11/2019	Normal	688512	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH052	SRT_BH052	18/12/2019	Normal	694466	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH052	SRT_BH052	20/01/2020	Normal	698379	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH052	SRT_BH052	26/02/2020	Normal	704673	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH052	SRT_BH052	26/02/2020	Normal	706746	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH052	SRT_BH052	16/03/2020	Normal	708508	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH052	SRT_BH052	15/04/2020	Normal	714027	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH052	SRT_BH052	18/05/2020	Normal	720682	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH052	SRT_BH052	17/06/2020	Normal	726825	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH052	SRT_BH052	17/06/2020	Normal	ES2021404	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	-	-	-	-	-	<0.005	-	-	-	-	<0.005	-	-	-	-	-	-	-	-	<0.002	-	-
Sydney Metro - Central	SRT_BH052	SRT_BH052	17/07/2020	Normal	732590	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH052	SRT_BH052	19/08/2020	Normal	738860	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH052	SRT_BH052	15/09/2020	Normal	744463	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT-BH053	SRT_BH053	6/09/2018	Normal	616629	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT-BH053	SRT_BH053	25/10/2018	Normal	624838	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT-BH059	SRT_BH059	25/10/2018	Normal	624838	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH059	SRT_BH059	26/11/2018	Normal	629922	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH059	SRT_BH059	17/12/2018	Normal	634274	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH059	SRT_BH059	18/01/2019	Normal	636542	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH059	SRT_BH059	20/02/2019	Normal	641720	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2

Appendix B
Table B2
Groundwater analytical results - September 2018 to September 2020

	OC Pesticides																		OP Pesticides																											
	4,4 DDD	4,4 DDT	DDT+DDE+DDD - Lab Calc	Dieldrin	Endosulfan	Endosulfan I (alpha)	Endosulfan II (beta)	Endosulfan Sulfate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Oxychlordane	Toxaphene	Tokuthion	Azinphos methyl	Bolstar (Sulprofos)	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Coumaphos	Demeton-O	Demeton-S	Diazinon	Dichlorvos	Dimethoate	Disulfoton	EPN	Ethion	Ethoprop	Fenitrothion	Fensulfothion	Fenthion	Malathion	Merphos	Methyl parathion
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	10	2	2	2	2	0.005	2	20	2	20	0.005	2	2	2	2	2	2	2	2	2	0.002	2	2
NEPM 2013 Table 1A(4) HSL D Comm/Ind GW for Vapour Intrusion, Sand																																										
2-4m																																										
4-8m																																										
>8m																																										
NEPM 2013 Table 1C GILs, Marine Waters					0.005[#5]				0.004[#5]														0.009[#5]																			
NHMRC Recreational Guidelines 2008 - Health		***90***			***200***							***100***	***3***			***3000***				***300***	***100***		***100***					***40***	***50***	***70***	***40***		***40***	***10***	***70***	***100***	***70***	***700***		***7***
Site_ID	**Field_ID**	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**	**Lab_Report_Number**																																					
Sydney Metro - Central	SRT_BH059	SRT_BH059	17/04/2019	Normal	651825	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	**<0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	**<20**	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH059	SRT_BH059	15/05/2019	Normal	656080	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	**<0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	**<20**	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH059	SRT_BH059	7/06/2019	Normal	660130	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	**<0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	**<20**	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT-BH059	SRT_BH059	31/07/2019	Normal	669059	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	**<0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	**<20**	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH059	SRT_BH059	30/08/2019	Normal	674722	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	**<0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	**<20**	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH059	SRT_BH059	27/09/2019	Normal	679636	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	**<0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	**<20**	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH059	SRT_BH059	18/10/2019	Normal	683453	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	**<0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	**<20**	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH059	SRT_BH059	15/11/2019	Normal	688512	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	**<0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	**<20**	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH059	SRT_BH059	18/12/2019	Normal	694466	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	**<0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	**<20**	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH059	SRT_BH059	20/01/2020	Normal	698379	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	**<0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	**<20**	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH059	SRT_BH059	26/02/2020	Normal	704673	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	**<0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	**<20**	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH059	SRT_BH059	26/02/2020	Normal	706746	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH059	SRT_BH059	16/03/2020	Normal	708508	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	**<0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	**<20**	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH059	SRT_BH059	15/04/2020	Normal	714027	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	**<0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	**<20**	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH059	SRT_BH059	18/05/2020	Normal	720682	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH059	SRT_BH059	17/06/2020	Normal	726825	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH059	SRT_BH059	17/06/2020	Normal	ES2021404	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	-	-	-	-	-	<0.005	-	-	-	-	<0.005	-	-	-	-	-	-	<0.002	-	-
Sydney Metro - Central	SRT_BH059	SRT_BH059	17/07/2020	Normal	732590	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH059	SRT_BH059	18/08/2020	Normal	738860	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH059	SRT_BH059	15/09/2020	Normal	744463	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH060	SRT_BH060	16/03/2020	Normal	708508	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	**<0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	**<20**	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	***<500***	***<500***	<2	<2	<2
Sydney Metro - Central	SRT_BH060	SRT_BH060	15/04/2020	Normal	714027	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	**<0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	**<20**	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT-BH063	SRT_BH063	6/09/2018	Normal	616629	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	**<0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	**<20**	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT-BH063	SRT_BH063	25/10/2018	Normal	624838	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	**<0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	**<20**	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH063	SRT_BH063	26/11/2018	Normal	629922	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	**<0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	**<20**	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	QA02	SRT_BH063	27/11/2018	Interlab_D	ES1835581	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	QA01	SRT_BH063	17/12/2018	Field_D	634274	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH063	SRT_BH063	17/12/2018	Normal	634274	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	**<0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	**<20**	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	QA01	SRT_BH063	17/01/2019	Field_D	636542	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH063	SRT_BH063	17/01/2019	Normal	636542	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	**<0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	**<20**	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH063	SRT_BH063	21/02/2019	Normal	641720	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	**<0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	**<20**	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	QA02	SRT_BH063	21/02/2019	Interlab_D	ES1905610	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH063	SRT_BH063	18/04/2019	Normal	651825	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	**<0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	**<20**	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH063	SRT_BH063	15/05/2019	Normal	656080	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	**<0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	**<20**	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH063	SRT_BH063	7/06/2019	Normal	660130	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	**<0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	**<20**	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT-BH063	SRT_BH063	29/07/2019	Normal	669059	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	**<0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	**<20**	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_BH063	SRT_BH063	28/08/2019	Normal	674722	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	**<0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	**<20**	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT-BH064	SRT_BH064	6/09/2018	Normal	616629	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	**<0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	**<20**	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	QA01	SRT_BH082	25/10/2018	Field_D	624838	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT-BH082	SRT_BH082	25/10/2018	Normal	624838	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	**<0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	**<20**	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	QA01	SRT_BH082	26/11/2018	Field_D	629922	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH082	SRT_BH082	26/11/2018	Normal	629922	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	**<0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	**<20**	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	QA01	SRT_CBH001	6/09/2018	Field_D	616629	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT-CBH001	SRT_CBH001	6/09/2018	Normal	616629	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	**<0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	**<20**	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT-CBH001	SRT_CBH001	25/10/2018	Normal	624838	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	**<0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	**<20**	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_CBH001	SRT_CBH001	26/11/2018	Normal	629922	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	**<0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	**<20**	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT-CBH007	SRT_CBH007	6/09/2018	Normal	616629	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	**<0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	**<20**	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT-CBH015	SRT_CBH015	7/09/2018	Normal	616629	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	**<0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	**<20**	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT-CBH015	SRT_CBH015	25/10/2018	Normal	624838	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	**<0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	**<20**	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	26/11/2018	Normal	629922	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	**<0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	**<20**	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	17/12/2018	Normal	634274	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	**<0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	**<20**	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	QA02	SRT_CBH015	17/12/2018	Interlab_D	ES1838345	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	18/01/2019	Normal	636542	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	**<0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	**<20**	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	QA02	SRT_CBH015	18/01/2019	Interlab_D	ES1901871	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	20/02/2019	Normal	641720	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	**<0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	**<20**	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	17/04/2019	Normal	651825	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	**<0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	**<20**	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	15/05/2019	Normal	656080	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	**<0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	**<20**	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	7/06/2019	Normal	660130	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	**<0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	**<20**	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	QC02	SRT_CBH015	31/07/2019	Field_D	669059	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT-CBH015	SRT_CBH015	31/07/2019	Normal	669059	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	**<0.1**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	**<20**	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	QC02	SRT_CBH015	30/08/2019	Field_D	674722	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix B
Table B2
Groundwater analytical results - September 2018 to September 2020

	OC Pesticides																		OP Pesticides																											
	4,4 DDD	4,4 DDT	DDT+DDE+DDD - Lab Calc	Dieldrin	Endosulfan	Endosulfan I (alpha)	Endosulfan II (beta)	Endosulfan Sulfate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Oxychlordane	Toxaphene	Tokuthion	Azinphos methyl	Bolstar (Sulprofos)	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Coumaphos	Demeton-O	Demeton-S	Diazinon	Dichlorvos	Dimethoate	Disulfoton	EPN	Ethion	Ethoprop	Fenitrothion	Fensulfothion	Fenthion	Malathion	Merphos	Methyl parathion
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	0.002	10	2	2	2	2	0.005	2	20	2	20	0.005	2	2	2	2	2	2	2	2	2	0.002	2	2
NEPM 2013 Table 1A(4) HSL D Comm/Ind GW for Vapour Intrusion, Sand																																									
2-4m																																									
4-8m																																									
>8m																																									
NEPM 2013 Table 1C GILs, Marine Waters					0.005[#5]				0.004[#5]														0.009[#5]																			
NHMRC Recreational Guidelines 2008 - Health		***90***			***200***							***100***	***3***			***3000***				***300***	***100***		***100***					***40***	***50***	***70***	***40***		***40***	***10***	***70***	***100***	***70***	***700***		***7***

Site_ID	Field_ID	Location_Code	Sampled_Date_Time	Sample_Type	Lab_Report_Number																																								
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	30/08/2019	Normal	674722	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	27/09/2019	Normal	679636	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	18/10/2019	Normal	683453	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	15/11/2019	Normal	688512	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	18/12/2019	Normal	694466	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT-CBH017	SRT_CBH017	7/09/2018	Normal	616629	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT-CBH017	SRT_CBH017	25/10/2018	Normal	624838	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	26/11/2018	Normal	629922	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	17/12/2018	Normal	634274	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	18/01/2019	Normal	636542	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	QA01	SRT_CBH017	20/02/2019	Field_D	641720	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	20/02/2019	Normal	641720	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	17/04/2019	Normal	651825	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	15/05/2019	Normal	656080	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	7/06/2019	Normal	660130	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT-CBH017	SRT_CBH017	31/07/2019	Normal	669059	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	30/08/2019	Normal	674722	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	QC02	SRT_CBH017	27/09/2019	Field_D	679636	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	27/09/2019	Normal	679636	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	18/10/2019	Normal	683453	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	15/11/2019	Normal	688512	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	18/12/2019	Normal	694466	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	20/01/2020	Normal	698379	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<10	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2

Statistical Summary

Number of Results	224	224	224	224	9	224	224	224	224	224	224	224	224	224	224	224	9	215	215	215	215	215	224	215	215	215	215	224	215	215	215	215	215	215	215	215	215	224	215	215
Number of Detects	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<10	<2	<2	<2	<2	<0.005	<2	<20	<2	<20	<0.005	<2	<2	<2	<2	<2	<2	<2	<2	<2	<0.002	<2	<2
Minimum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration	<0.2	<0.2	<0.2	<0.2	<0.002	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.002	<20	<2	<2	<2	<2	<20	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<500	<500	<2	<2	<2
Maximum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration	0.048	0.048	0.048	0.048	0.001	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0.001	5	1	1	1	1	9.6	1	10	1	10	0.96	1	1	1	1	1	1	1	3.3	3.3	0.96	1	1
Median Concentration	0.05	0.05	0.05	0.05	0.001	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.001	5	1	1	1	1	10	1	10	1	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Standard Deviation	0.011	0.011	0.011	0.011	0	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0	0.48	0	0	0	0	2	0	0	0	0	0.2	0	0	0	0	0	0	0	24	24	0.2	0	0
Number of Guideline Exceedances	0	0	0	0	0	0	0	0	215	0	0	0	0	0	0	0	0	0	0	0	0	0	215	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0
Number of Guideline Exceedances(Detects Only)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Env Stds Comments

#1:Not limiting: Derived water HSL exceeds water solubility limit
#2:To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
#3:Values calculated using hardness of 30 mg/L CaCO3. Chemical for which possible bioaccumulation and secondary poisoning effects should be considered.
#4:Values calculated using hardness of 30 mg/L CaCO3. Refer ANZECC & ARMCANZ (2000) for site specific hardness guidance
#5:Chemical for which possible bioaccumulation and secondary poisoning effects should be considered, refer to ANZECC & ARMCANZ (2000) for further guidance.
#6:Values calculated using hardness of 30 mg/L CaCO3. Figure may not protect key species from chronic toxicity. Refer ANZECC *&*
#7:Figure may not protect key species from chronic toxicity, refer to ANZECC & ARMCANZ (2000) for further guidance.

Appendix B
Table B2
Groundwater analytical results - September 2018 to September 2020

														Pesticides		Herbicides						PCBs							
	Mevinphos (Phosdrin)	Monocrotophos	Naled (Dibrom)	Omethoate	Parathion	Phorate	Pirimiphos-methyl	Pyrazophos	Ronnel	Terbufos	Trichloronate	Tetrachlorvinphos		Atrazine	Simazine	Dinoseb	Diuron	Metolachlor	Molinate	Thiobencarb	Trifluralin	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	PCBs (Total)
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	2	2	2	2	2	2	20	2	2	2	2	2		0.005	0.005	100	0.005	0.005	0.005	0.005	0.005	1	1	1	1	1	1	1	1
NEPM 2013 Table 1A(4) HSL D Comm/Ind GW for Vapour Intrusion, Sand																													
2-4m																													
4-8m																													
>8m																													
NEPM 2013 Table 1C GILs, Marine Waters																													
NHMRC Recreational Guidelines 2008 - Health	***50***	***20***		***10***	***200***		***900***	***200***		***9***		***1000***		***200***	***200***		***200***	***3000***	***40***	***400***	***900***								
Site_ID	**Field_ID**	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**	**Lab_Report_Number**																								
Sydney Metro - Central	CSM_BH02	CSM_BH02	16/04/2019	Normal	651825	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<5	<1	<5	<5	<5	<5	<5	<1
Sydney Metro - Central	CSM_BH02	CSM_BH02	14/05/2019	Normal	656080	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH02	CSM_BH02	6/06/2019	Normal	660130	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<5	<1	<5	<5	<5	<5	<5	<1
Sydney Metro - Central	CSM_BH02	CSM_BH02	30/07/2019	Normal	669059	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH02	CSM_BH02	29/08/2019	Normal	674722	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH02	CSM_BH02	26/09/2019	Normal	679636	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH02	CSM_BH02	17/10/2019	Normal	683453	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH02	CSM_BH02	13/11/2019	Normal	688512	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH02	CSM_BH02	17/12/2019	Normal	694466	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH02	CSM_BH02	21/01/2020	Normal	698379	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH02	CSM_BH02	25/02/2020	Normal	704673	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH02	CSM_BH02	25/02/2020	Normal	706746	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH02	CSM_BH02	18/03/2020	Normal	708508	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<5	<1	<5	<5	<5	<5	<5	<1
Sydney Metro - Central	CSM_BH02	CSM_BH02	14/04/2020	Normal	714027	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH02	CSM_BH02	19/05/2020	Normal	720682	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH02	CSM_BH02	18/06/2020	Normal	726825	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	QC02	CSM_BH02	18/06/2020	Field_D	726825	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH02	CSM_BH02	18/06/2020	Normal	ES2021404	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH02	CSM_BH02	15/07/2020	Normal	732590	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH02	CSM_BH02	15/07/2020	Normal	732590	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH02	CSM_BH02	14/09/2020	Normal	744463	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	QC02	CSM_BH02	14/09/2020	Field_D	744463	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH04	CSM_BH04	16/04/2019	Normal	651825	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<5	<1	<5	<5	<5	<5	<5	<1
Sydney Metro - Central	CSM_BH04	CSM_BH04	13/05/2019	Normal	656080	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH04	CSM_BH04	11/06/2019	Normal	660130	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<5	<1	<5	<5	<5	<5	<5	<1
Sydney Metro - Central	CSM_BH04	CSM_BH04	30/07/2019	Normal	669059	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH04	CSM_BH04	29/08/2019	Normal	674722	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH04	CSM_BH04	26/09/2019	Normal	679636	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH04	CSM_BH04	17/10/2019	Normal	683453	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	QC02	CSM_BH04	17/10/2019	Field_D	683453	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH04	CSM_BH04	13/11/2019	Normal	688512	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	QC01	CSM_BH04	13/11/2019	Interlab_D	ES1937682	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH04	CSM_BH04	17/12/2019	Normal	694466	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH04	CSM_BH04	21/01/2020	Normal	698379	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	QC02	CSM_BH04	21/01/2020	Field_D	698379	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH04	CSM_BH04	25/02/2020	Normal	704673	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH04	CSM_BH04	25/02/2020	Normal	706746	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	QC02	CSM_BH04	25/02/2020	Field_D	704673	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH04	CSM_BH04	18/03/2020	Normal	708508	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<5	<1	<5	<5	<5	<5	<5	<1
Sydney Metro - Central	CSM_BH04	CSM_BH04	14/04/2020	Normal	714027	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH04	CSM_BH04	20/05/2020	Normal	720682	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH04	CSM_BH04	18/06/2020	Normal	726825	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH04	CSM_BH04	18/06/2020	Normal	ES2021404	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH04	CSM_BH04	15/07/2020	Normal	732590	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH04	CSM_BH04	17/08/2020	Normal	738860	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	QC01	CSM_BH04	17/08/2020	Interlab_D	ES2028968	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH04	CSM_BH04	14/09/2020	Normal	744463	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH05	CSM_BH05	17/04/2019	Normal	651825	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<5	<1	<5	<5	<5	<5	<5	<1
Sydney Metro - Central	CSM_BH05	CSM_BH05	13/05/2019	Normal	656080	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH05	CSM_BH05	11/06/2019	Normal	660130	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<5	<1	<5	<5	<5	<5	<5	<1
Sydney Metro - Central	CSM_BH05	CSM_BH05	29/07/2019	Normal	669059	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH06	CSM_BH06	18/04/2019	Normal	651825	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<5	<1	<5	<5	<5	<5	<5	<1
Sydney Metro - Central	CSM_BH06	CSM_BH06	14/05/2019	Normal	656080	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	QC02	CSM_BH06	14/05/2019	Field_D	656080	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH06	CSM_BH06	6/06/2019	Normal	660130	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<5	<1	<5	<5	<5	<5	<5	<1
Sydney Metro - Central	CSM_BH06	CSM_BH06	8/06/2019	Field_D	660130	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH06	CSM_BH06	30/07/2019	Normal	669059	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH06	CSM_BH06	28/08/2019	Normal	674722	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH06	CSM_BH06	26/09/2019	Normal	679636	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH06	CSM_BH06	17/10/2019	Normal	683453	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH06	CSM_BH06	13/11/2019	Normal	688512	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1

Appendix B
Table B2
Groundwater analytical results - September 2018 to September 2020

														Pesticides		Herbicides							PCBs								
														Mevinphos (Phosdrin)	Monocrotophos	Naled (Dibrom)	Omethoate	Parathion	Phorate	Pirimiphos-methyl	Pyrazophos	Ronnel	Terbufos	Trichloronate	Tetrachlorvinphos	Atrazine	Simazine	Dinoseb	Diuron	Metolachlor	Molinate	Thiobencarb	Trifluralin	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	PCBs (Total)
														µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL														2	2	2	2	2	2	20	2	2	2	2	2	0.005	0.005	100	0.005	0.005	0.005	0.005	0.005	1	1	1	1	1	1	1	1
NEPM 2013 Table 1A(4) HSL D Comm/Ind GW for Vapour Intrusion, Sand																																								
2-4m																																								
4-8m																																								
>8m																																								
NEPM 2013 Table 1C GILs, Marine Waters																																								
NHMRC Recreational Guidelines 2008 - Health														***50***	***20***		***10***	***200***		***900***	***200***		***9***		***1000***	***200***	***200***		***200***	***3000***	***40***	***400***	***900***								
Site_ID	**Field_ID**	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**	**Lab_Report_Number**																																				
Sydney Metro - Central	CSM_BH06	CSM_BH06	17/12/2019	Normal	694466	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	QC01	CSM_BH06	17/12/2019	Field_D	694466	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH06	CSM_BH06	25/02/2020	Normal	704673	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH06	CSM_BH06	25/02/2020	Normal	706746	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH06	CSM_BH06	16/03/2020	Normal	708508	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<5	<1	<5	<5	<5	<5	<5	<1
Sydney Metro - Central	QC01	CSM_BH06	16/03/2020	Interlab_D	ES2009232	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH06	CSM_BH06	14/04/2020	Normal	714027	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	QC01	CSM_BH06	14/04/2020	Interlab_D	ES2012716	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH06	CSM_BH06	19/05/2020	Normal	720682	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH06	CSM_BH06	18/06/2020	Normal	726825	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH06	CSM_BH06	18/06/2020	Normal	ES2021404	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH06	CSM_BH06	15/07/2020	Normal	732590	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH06	CSM_BH06	18/08/2020	Normal	738860	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH06	CSM_BH06	14/09/2020	Normal	744463	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH08	CSM_BH08	18/04/2019	Normal	651825	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<5	<1	<5	<5	<5	<5	<5	<1
Sydney Metro - Central	QC02	CSM_BH08	18/04/2019	Field_D	651825	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH08	CSM_BH08	15/05/2019	Normal	656080	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH08	CSM_BH08	6/06/2019	Normal	660130	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<5	<1	<5	<5	<5	<5	<5	<1
Sydney Metro - Central	QC03	CSM_BH08	6/06/2019	Interlab_D	ES1917968	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH08	CSM_BH08	30/07/2019	Normal	669059	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH08	CSM_BH08	29/08/2019	Normal	674722	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH08	CSM_BH08	26/09/2019	Normal	679636	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH08	CSM_BH08	18/10/2019	Normal	683453	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH08	CSM_BH08	13/11/2019	Normal	688512	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH08	CSM_BH08	16/12/2019	Normal	694466	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH08	CSM_BH08	21/01/2020	Normal	698379	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH08	CSM_BH08	25/02/2020	Normal	704673	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH08	CSM_BH08	25/02/2020	Normal	706746	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH08	CSM_BH08	18/03/2020	Normal	708508	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<5	<1	<5	<5	<5	<5	<5	<1
Sydney Metro - Central	CSM_BH08	CSM_BH08	14/04/2020	Normal	714027	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH08	CSM_BH08	18/05/2020	Normal	720682	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	QC01	CSM_BH08	18/05/2020	Interlab_D	ES2017182	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH08	CSM_BH08	17/06/2020	Normal	726825	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH08	CSM_BH08	17/06/2020	Normal	ES2021404	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-	-	-	-	-	-
Sydney Metro - Central	QC01	CSM_BH08	17/06/2020	Interlab_D	ES2021404	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH08	CSM_BH08	15/07/2020	Normal	732590	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	QC01	CSM_BH08	15/07/2020	Interlab_D	ES2024606	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH08	CSM_BH08	19/08/2020	Normal	738860	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH08	CSM_BH08	14/09/2020	Normal	744463	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	QC01	CSM_BH08	14/09/2020	Interlab_D	ES2032425	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	17/04/2019	Normal	651825	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<5	<1	<5	<5	<5	<5	<5	<1
Sydney Metro - Central	QC01	CSM_BH09S	17/04/2019	Interlab_D	ES1912362	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	13/05/2019	Normal	656080	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	QC01	CSM_BH09S	13/05/2019	Interlab_D	ES1914810	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	11/06/2019	Normal	660130	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<5	<1	<5	<5	<5	<5	<5	<1
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	29/07/2019	Normal	669059	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	QC01	CSM_BH09S	29/07/2019	Interlab_D	ES1924197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	28/08/2019	Normal	674722	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	QC01	CSM_BH09S	28/08/2019	Interlab_D	EM1914568	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	25/09/2019	Normal	679636	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	QC01	CSM_BH09S	25/09/2019	Interlab_D	ES1931406	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	16/10/2019	Normal	683453	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	14/11/2019	Normal	688512	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	16/12/2019	Normal	694466	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	QC02	CSM_BH09S	16/12/2019	Interlab_D	ES1941823	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	21/01/2020	Normal	698379	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	24/02/2020	Normal	704673	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	24/02/2020	Normal	706746	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	QC01	CSM_BH09S	24/02/2020	Interlab_D	ES2006512	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	17/03/2020	Normal	708508	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<5	<1	<5	<5	<5	<5	<5	<1
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	16/04/2020	Normal	714027	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1

Appendix B
Table B2
Groundwater analytical results - September 2018 to September 2020

															Pesticides		Herbicides						PCBs							
	Mevinphos (Phosdrin)	Monocrotophos	Naled (Dibrom)	Omethoate	Parathion	Phorate	Pirimiphos-methyl	Pyrazophos	Ronnel	Terbufos	Trichloronate	Tetrachlorvinphos	Atrazine	Simazine	Dinoseb	Diuron	Metolachlor	Molinate	Thiobencarb	Trifluralin	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	PCBs (Total)
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	2	2	2	2	2	2	20	2	2	2	2	2	0.005	0.005	100	0.005	0.005	0.005	0.005	0.005	1	1	1	1	1	1	1	1
NEPM 2013 Table 1A(4) HSL D Comm/Ind GW for Vapour Intrusion, Sand																												
2-4m																												
4-8m																												
>8m																												
NEPM 2013 Table 1C GILs, Marine Waters																												
NHMRC Recreational Guidelines 2008 - Health	***50***	***20***		***10***	***200***		***900***	***200***		***9***		***1000***	***200***	***200***		***200***	***3000***	***40***	***400***	***900***								

Site_ID	Field_ID	Location_Code	Sampled_Date_Time	Sample_Type	Lab_Report_Number																									
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	20/05/2020	Normal	720682	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	19/06/2020	Normal	726825	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH09s	CSM_BH09S	19/06/2020	Normal	ES2021404	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	16/07/2020	Normal	732590	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	QC02	CSM_BH09S	16/07/2020	Field_D	732590	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	18/08/2020	Normal	738860	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	QC02	CSM_BH09S	18/08/2020	Field_D	738860	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH09S	CSM_BH09S	16/09/2020	Normal	744463	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	16/04/2019	Normal	651825	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	<100	-	-	-	-	-	<5	<1	<5	<5	<5	<5	<5	<1
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	13/05/2019	Normal	656080	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	11/06/2019	Normal	660130	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	<100	-	-	-	-	-	<5	<1	<5	<5	<5	<5	<5	<1
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	30/07/2019	Normal	669059	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	29/08/2019	Normal	674722	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	25/09/2019	Normal	679636	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	16/10/2019	Normal	683453	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	QC01	CSM_BH10S	16/10/2019	Interlab_D	ES1934142	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	14/11/2019	Normal	688512	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	QC02	CSM_BH10S	14/11/2019	Field_D	688512	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	17/12/2019	Normal	694466	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	20/01/2020	Normal	698379	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	QC01	CSM_BH10S	20/01/2020	Interlab_D	ES2001825	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	25/02/2020	Normal	704673	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	25/02/2020	Normal	706746	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	17/03/2020	Normal	708508	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	<100	-	-	-	-	-	<5	<1	<5	<5	<5	<5	<5	<1
Sydney Metro - Central	QC02	CSM_BH10S	17/03/2020	Field_D	708508	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	15/04/2020	Normal	714027	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	QC02	CSM_BH10S	15/04/2020	Field_D	714027	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	18/05/2020	Normal	720682	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	QC02	CSM_BH10S	20/05/2020	Field_D	720682	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	19/06/2020	Normal	726825	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	19/06/2020	Normal	ES2021404	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	15/07/2020	Normal	732590	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	17/08/2020	Normal	738860	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	CSM_BH10S	CSM_BH10S	15/09/2020	Normal	744463	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH10	GASW_BH10	5/06/2019	Normal	659250	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	<100	-	-	-	-	-	<5	<1	<5	<5	<5	<5	<5	<1
Sydney Metro - Central	GASW_BH10	GASW_BH10	30/07/2019	Normal	669059	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	GASW_BH10	GASW_BH10	28/08/2019	Normal	674722	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	GASW_BH10	GASW_BH10	26/09/2019	Normal	679636	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	GASW_BH10	GASW_BH10	17/10/2019	Normal	683453	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH10	GASW_BH10	13/11/2019	Normal	688512	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH10	GASW_BH10	16/12/2019	Normal	694466	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH10	GASW_BH10	21/01/2020	Normal	698379	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH10	GASW_BH10	24/02/2020	Normal	704673	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	GASW_BH10	GASW_BH10	24/02/2020	Normal	706746	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH10	GASW_BH10	18/03/2020	Normal	708508	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH10	GASW_BH10	14/04/2020	Normal	714027	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH10	GASW_BH10	19/05/2020	Normal	720682	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH10	GASW_BH10	18/06/2020	Normal	726825	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH10	GASW_BH10	15/07/2020	Normal	732590	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH10	GASW_BH10	17/08/2020	Normal	738860	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH10	GASW_BH10	14/09/2020	Normal	744463	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH11	GASW_BH11	5/06/2019	Normal	659250	<5	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	<100	-	-	-	-	-	<5	<1	<5	<5	<5	<5	<5	<1
Sydney Metro - Central	QC02	GASW_BH11	5/06/2019	Field_D	659250	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH11	GASW_BH11	30/07/2019	Normal	669059	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	GASW_BH11	GASW_BH11	28/08/2019	Normal	674722	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	GASW_BH11	GASW_BH11	25/09/2019	Normal	679636	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	GASW_BH11	GASW_BH11	16/10/2019	Normal	683453	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH11	GASW_BH11	14/11/2019	Normal	688512	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH11	GASW_BH11	16/12/2019	Normal	694466	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH11	GASW_BH11	22/01/2020	Normal	698379	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	GASW_BH11	GASW_BH11	24/02/2020	Normal	704673	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1

Appendix B
Table B2
Groundwater analytical results - September 2018 to September 2020

															Pesticides		Herbicides							PCBs								

Appendix B
Table B2
Groundwater analytical results - September 2018 to September 2020

														Pesticides		Herbicides							PCBs									
														Mevinphos (Phosdrin)	Monocrotophos	Naled (Dibrom)	Omethoate	Parathion	Phorate	Pirimiphos-methyl	Pyrazophos	Ronnel	Terbufos	Trichloronate	Tetrachlorvinphos	Atrazine	Simazine	Dinoseb	Diuron	Metolachlor	Molinate	Thiobencarb	Trifluralin	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	PCBs (Total)
														µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL														2	2	2	2	2	2	20	2	2	2	2	2	0.005	0.005	100	0.005	0.005	0.005	0.005	0.005	1	1	1	1	1	1	1	1
NEPM 2013 Table 1A(4) HSL D Comm/Ind GW for Vapour Intrusion, Sand																																								
2-4m																																								
4-8m																																								
>8m																																								
NEPM 2013 Table 1C GILs, Marine Waters																																								
NHMRC Recreational Guidelines 2008 - Health														***50***	***20***		***10***	***200***		***900***	***200***		***9***		***1000***	***200***	***200***		***200***	***3000***	***40***	***400***	***900***								
Site_ID	**Field_ID**	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**	**Lab_Report_Number**																																			
Sydney Metro - Central	SRT_BH047	SRT_BH047	20/02/2019	Normal	641720	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH047	SRT_BH047	16/04/2019	Normal	651825	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<5	<1	<5	<5	<5	<5	<5	<1
Sydney Metro - Central	SRT_BH047	SRT_BH047	14/05/2019	Normal	656080	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH047	SRT_BH047	7/06/2019	Normal	660130	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<5	<1	<5	<5	<5	<5	<5	<1
Sydney Metro - Central	SRT-BH047	SRT_BH047	31/07/2019	Normal	669059	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH047	SRT_BH047	30/08/2019	Normal	674722	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH047	SRT_BH047	27/09/2019	Normal	679636	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH047	SRT_BH047	18/10/2019	Normal	683453	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH047	SRT_BH047	15/11/2019	Normal	688512	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH047	SRT_BH047	18/12/2019	Normal	694466	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH047	SRT_BH047	20/01/2020	Normal	698379	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH047	SRT_BH047	26/02/2020	Normal	704673	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH047	SRT_BH047	26/02/2020	Normal	706746	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH047	SRT_BH047	16/03/2020	Normal	708508	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<5	<1	<5	<5	<5	<5	<5	<1
Sydney Metro - Central	SRT_BH047	SRT_BH047	15/04/2020	Normal	714027	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH047	SRT_BH047	18/05/2020	Normal	720682	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH047	SRT_BH047	17/06/2020	Normal	726825	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH047	SRT_BH047	17/06/2020	Normal	ES2021404	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH047	SRT_BH047	17/07/2020	Normal	732590	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH047	SRT_BH047	19/08/2020	Normal	738860	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT-BH048	SRT_BH048	6/09/2018	Normal	616629	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT-BH048	SRT_BH048	25/10/2018	Normal	624838	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH048	SRT_BH048	26/11/2018	Normal	629922	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH050	SRT_BH050	16/03/2020	Normal	708508	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<5	<1	<5	<5	<5	<5	<5	<1
Sydney Metro - Central	SRT_BH050	SRT_BH050	15/04/2020	Normal	714027	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH050	SRT_BH050	17/06/2020	Normal	726825	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH050	SRT_BH050	17/07/2020	Normal	732590	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH050	SRT_BH050	19/08/2020	Normal	738860	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT-BH052	SRT_BH052	25/10/2018	Normal	624838	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH052	SRT_BH052	26/11/2018	Normal	629922	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH052	SRT_BH052	18/12/2018	Normal	634274	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH052	SRT_BH052	17/01/2019	Normal	636542	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH052	SRT_BH052	20/02/2019	Normal	641720	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH052	SRT_BH052	16/04/2019	Normal	651825	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<5	<1	<5	<5	<5	<5	<5	<1
Sydney Metro - Central	SRT_BH052	SRT_BH052	14/05/2019	Normal	656080	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH052	SRT_BH052	7/06/2019	Normal	660130	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<5	<1	<5	<5	<5	<5	<5	<1
Sydney Metro - Central	SRT-BH052	SRT_BH052	31/07/2019	Normal	669059	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH052	SRT_BH052	30/08/2019	Normal	674722	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH052	SRT_BH052	27/09/2019	Normal	679636	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH052	SRT_BH052	18/10/2019	Normal	683453	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH052	SRT_BH052	15/11/2019	Normal	688512	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH052	SRT_BH052	18/12/2019	Normal	694466	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH052	SRT_BH052	20/01/2020	Normal	698379	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH052	SRT_BH052	26/02/2020	Normal	704673	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH052	SRT_BH052	26/02/2020	Normal	706746	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH052	SRT_BH052	16/03/2020	Normal	708508	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<5	<1	<5	<5	<5	<5	<5	<1
Sydney Metro - Central	SRT_BH052	SRT_BH052	15/04/2020	Normal	714027	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH052	SRT_BH052	18/05/2020	Normal	720682	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH052	SRT_BH052	17/06/2020	Normal	726825	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH052	SRT_BH052	17/06/2020	Normal	ES2021404	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH052	SRT_BH052	17/07/2020	Normal	732590	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH052	SRT_BH052	19/08/2020	Normal	738860	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH052	SRT_BH052	15/09/2020	Normal	744463	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT-BH053	SRT_BH053	6/09/2018	Normal	616629	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT-BH053	SRT_BH053	25/10/2018	Normal	624838	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT-BH059	SRT_BH059	25/10/2018	Normal	624838	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH059	SRT_BH059	26/11/2018	Normal	629922	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	0
Sydney Metro - Central	SRT_BH059	SRT_BH059	17/12/2018	Normal	634274	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH059	SRT_BH059	18/01/2019	Normal	636542	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH059	SRT_BH059	20/02/2019	Normal	641720	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1

Appendix B
Table B2
Groundwater analytical results - September 2018 to September 2020

														Pesticides		Herbicides							PCBs									
														Mevinphos (Phosdrin)	Monocrotophos	Naled (Dibrom)	Omethoate	Parathion	Phorate	Pirimiphos-methyl	Pyrazophos	Ronnel	Terbufos	Trichloronate	Tetrachlorvinphos	Atrazine	Simazine	Dinoseb	Diuron	Metolachlor	Molinate	Thiobencarb	Trifluralin	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	PCBs (Total)
														µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL														2	2	2	2	2	2	20	2	2	2	2	2	0.005	0.005	100	0.005	0.005	0.005	0.005	0.005	1	1	1	1	1	1	1	1
NEPM 2013 Table 1A(4) HSL D Comm/Ind GW for Vapour Intrusion, Sand																																								
2-4m																																								
4-8m																																								
>8m																																								
NEPM 2013 Table 1C GILs, Marine Waters																																								
NHMRC Recreational Guidelines 2008 - Health														***50***	***20***		***10***	***200***		***900***	***200***		***9***		***1000***	***200***	***200***		***200***	***3000***	***40***	***400***	***900***								
Site_ID	**Field_ID**	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**	**Lab_Report_Number**																																			
Sydney Metro - Central	SRT_BH059	SRT_BH059	17/04/2019	Normal	651825	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<5	<1	<5	<5	<5	<5	<5	<1
Sydney Metro - Central	SRT_BH059	SRT_BH059	15/05/2019	Normal	656080	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH059	SRT_BH059	7/06/2019	Normal	660130	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<5	<1	<5	<5	<5	<5	<5	<1
Sydney Metro - Central	SRT-BH059	SRT_BH059	31/07/2019	Normal	669059	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH059	SRT_BH059	30/08/2019	Normal	674722	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH059	SRT_BH059	27/09/2019	Normal	679636	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH059	SRT_BH059	18/10/2019	Normal	683453	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH059	SRT_BH059	15/11/2019	Normal	688512	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH059	SRT_BH059	18/12/2019	Normal	694466	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH059	SRT_BH059	20/01/2020	Normal	698379	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH059	SRT_BH059	26/02/2020	Normal	704673	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH059	SRT_BH059	26/02/2020	Normal	706746	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH059	SRT_BH059	16/03/2020	Normal	708508	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<5	<1	<5	<5	<5	<5	<5	<1
Sydney Metro - Central	SRT_BH059	SRT_BH059	15/04/2020	Normal	714027	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH059	SRT_BH059	18/05/2020	Normal	720682	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH059	SRT_BH059	17/06/2020	Normal	726825	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH059	SRT_BH059	17/06/2020	Normal	ES2021404	-	-	-	-	-	-	-	-	-	-	-	-	<0.005	<0.005	-	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH059	SRT_BH059	17/07/2020	Normal	732590	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH059	SRT_BH059	18/08/2020	Normal	738860	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH059	SRT_BH059	15/09/2020	Normal	744463	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH060	SRT_BH060	16/03/2020	Normal	708508	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<5	<1	<5	<5	<5	<5	<5	<1
Sydney Metro - Central	SRT_BH060	SRT_BH060	15/04/2020	Normal	714027	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH063	SRT_BH063	6/09/2018	Normal	616629	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT-BH063	SRT_BH063	25/10/2018	Normal	624838	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH063	SRT_BH063	26/11/2018	Normal	629922	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	QA02	SRT_BH063	27/11/2018	Interlab_D	ES1835581	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	QA01	SRT_BH063	17/12/2018	Field_D	634274	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH063	SRT_BH063	17/12/2018	Normal	634274	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	QA01	SRT_BH063	17/01/2019	Field_D	636542	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH063	SRT_BH063	17/01/2019	Normal	636542	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH063	SRT_BH063	21/02/2019	Normal	641720	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	QA02	SRT_BH063	21/02/2019	Interlab_D	ES1905610	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH063	SRT_BH063	18/04/2019	Normal	651825	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<5	<1	<5	<5	<5	<5	<5	<1
Sydney Metro - Central	SRT_BH063	SRT_BH063	15/05/2019	Normal	656080	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH063	SRT_BH063	7/06/2019	Normal	660130	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<5	<1	<5	<5	<5	<5	<5	<1
Sydney Metro - Central	SRT-BH063	SRT_BH063	29/07/2019	Normal	669059	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_BH063	SRT_BH063	28/08/2019	Normal	674722	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT-BH064	SRT_BH064	6/09/2018	Normal	616629	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	QA01	SRT_BH082	25/10/2018	Field_D	624838	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT-BH082	SRT_BH082	25/10/2018	Normal	624838	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	QA01	SRT_BH082	26/11/2018	Field_D	629922	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_BH082	SRT_BH082	26/11/2018	Normal	629922	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	QA01	SRT_CBH001	6/09/2018	Field_D	616629	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT-CBH001	SRT_CBH001	6/09/2018	Normal	616629	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT-CBH001	SRT_CBH001	25/10/2018	Normal	624838	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_CBH001	SRT_CBH001	26/11/2018	Normal	629922	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT-CBH007	SRT_CBH007	6/09/2018	Normal	616629	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT-CBH015	SRT_CBH015	7/09/2018	Normal	616629	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT-CBH015	SRT_CBH015	25/10/2018	Normal	624838	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	26/11/2018	Normal	629922	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	17/12/2018	Normal	634274	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	QA02	SRT_CBH015	17/12/2018	Interlab_D	ES1838345	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	18/01/2019	Normal	636542	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	QA02	SRT_CBH015	18/01/2019	Interlab_D	ES1901871	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	20/02/2019	Normal	641720	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	17/04/2019	Normal	651825	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<5	<1	<5	<5	<5	<5	<5	<1
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	15/05/2019	Normal	656080	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	7/06/2019	Normal	660130	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<5	<1	<5	<5	<5	<5	<5	<1
Sydney Metro - Central	QC02	SRT_CBH015	31/07/2019	Field_D	669059	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT-CBH015	SRT_CBH015	31/07/2019	Normal	669059	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	QC02	SRT_CBH015	30/08/2019	Field_D	674722	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix B
Table B2
Groundwater analytical results - September 2018 to September 2020

														Pesticides		Herbicides							PCBs									
														Mevinphos (Phosdrin)	Monocrotophos	Naled (Dibrom)	Omethoate	Parathion	Phorate	Pirimiphos-methyl	Pyrazophos	Ronnel	Terbufos	Trichloronate	Tetrachlorvinphos	Atrazine	Simazine	Dinoseb	Diuron	Metolachlor	Molinate	Thiobencarb	Trifluralin	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	PCBs (Total)
														µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL														2	2	2	2	2	2	20	2	2	2	2	2	0.005	0.005	100	0.005	0.005	0.005	0.005	0.005	1	1	1	1	1	1	1	1
NEPM 2013 Table 1A(4) HSL D Comm/Ind GW for Vapour Intrusion, Sand																																								
2-4m																																								
4-8m																																								
>8m																																								
NEPM 2013 Table 1C GILs, Marine Waters																																								
NHMRC Recreational Guidelines 2008 - Health														***50***	***20***		***10***	***200***		***900***	***200***		***9***		***1000***	***200***	***200***		***200***	***3000***	***40***	***400***	***900***								
Site_ID	**Field_ID**	**Location_Code**	**Sampled_Date_Time**	**Sample_Type**	**Lab_Report_Number**																																			
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	30/08/2019	Normal	674722	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	27/09/2019	Normal	679636	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	18/10/2019	Normal	683453	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	15/11/2019	Normal	688512	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_CBH015	SRT_CBH015	18/12/2019	Normal	694466	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT-CBH017	SRT_CBH017	7/09/2018	Normal	616629	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT-CBH017	SRT_CBH017	25/10/2018	Normal	624838	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	26/11/2018	Normal	629922	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	17/12/2018	Normal	634274	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	18/01/2019	Normal	636542	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	QA01	SRT_CBH017	20/02/2019	Field_D	641720	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	20/02/2019	Normal	641720	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	17/04/2019	Normal	651825	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<5	<1	<5	<5	<5	<5	<5	<1
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	15/05/2019	Normal	656080	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	7/06/2019	Normal	660130	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<5	<1	<5	<5	<5	<5	<5	<1
Sydney Metro - Central	SRT-CBH017	SRT_CBH017	31/07/2019	Normal	669059	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	30/08/2019	Normal	674722	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	QC02	SRT_CBH017	27/09/2019	Field_D	679636	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	27/09/2019	Normal	679636	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	18/10/2019	Normal	683453	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	15/11/2019	Normal	688512	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	18/12/2019	Normal	694466	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Sydney Metro - Central	SRT_CBH017	SRT_CBH017	20/01/2020	Normal	698379	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	-	-	<100	-	-	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1
Statistical Summary																																								
Number of Results						215	215	215	215	215	215	215	215	215	215	215	215	9	9	314	9	9	9	9	9	225	225	225	225	225	225	225	225
Number of Detects						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Minimum Concentration						<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	<0.005	<0.005	<100	<0.005	<0.005	<0.005	<0.005	<0.005	<1	<1	<1	<1	<1	<1	<1	0
Minimum Detect						ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration						<5	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	<0.005	<0.005	<100	<0.005	<0.005	<0.005	<0.005	<0.005	<5	<1	<5	<5	<5	<5	<5	<1
Maximum Detect						ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration						1	1	1	1	1	1	10	1	1	1	1	1	0.0025	0.0025	50	0.0025	0.0025	0.0025	0.0025	0.0025	0.86	0.5	0.86	0.86	0.86	0.86	0.86	0.5
Median Concentration						1	1	1	1	1	1	10	1	1	1	1	1	0.0025	0.0025	50	0.0025	0.0025	0.0025	0.0025	0.0025	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Standard Deviation						0.14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.77	0	0.77	0.77	0.77	0.77	0.77	0.033
Number of Guideline Exceedances						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Env Stds Comments

#1:Not limiting: Derived water HSL exceeds water solubility limit
#2:To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
#3:Values calculated using hardness of 30 mg/L CaCO3. Chemical for which possible bioaccumulation and secondary poisoning effects should be considered.
#4:Values calculated using hardness of 30 mg/L CaCO3. Refer ANZECC & ARMCANZ (2000) for site specific hardness guidance
#5:Chemical for which possible bioaccumulation and secondary poisoning effects should be considered, refer to ANZECC & ARMCANZ (2000) for further guidance.
#6:Values calculated using hardness of 30 mg/L CaCO3. Figure may not protect key species from chronic toxicity. Refer ANZECC &
#7:Figure may not protect key species from chronic toxicity, refer to ANZECC & ARMCANZ (2000) for further guidance.

Appendix B
Table B3 Summary of groundwater gauging results - April to September 2020

Well ID	Targeted aquifer	Sampling Event	Date Measured	SWL (mbTOC)	BOC (mbTOC)	Elevation of well TOC (mAHD)	SWL (mAHD)	Lithology (mAHD)	Well screen (mAHD)	Lithology (mbgl)	Well screen (mbgl)
CSM_BH02	Deep	Event 19 - Apr 2020	14/04/2020	20.365	33.235	21.424	1.059	14.28-14.88 concrete / fill 13.98-14.28 residual soil (20.12)-13.98 sandstone	(20.12)-0.88	-	-
CSM_BH02	Deep	Event 20 - May 2020	19/05/2020	20.165	33.245	21.424	1.259				
CSM_BH02	Deep	Event 21 - Jun 2020	19/06/2020	20.12	33.16	21.424	1.304				
CSM_BH02	Deep	Event 22 - Jul 2020	15/07/2020	20.02	33.11	21.424	1.404				
CSM_BH02	Deep	Event 23 - Aug 2020	18/08/2020	20.03	33.12	21.424	1.394				
CSM_BH02	Deep	Event 24 - Sep 2020	14/09/2020	20.025	33.03	21.424	1.399				
CSM_BH04	Deep	Event 19 - Apr 2020	14/04/2020	20.97	33.91	15.814	-5.156	13.91-15.91 fill 5.91-13.91 residual (sand, claey sand, sandy clay) (20.91)-5.91 sandstone	(20.91)-(5.91)	-	-
CSM_BH04	Deep	Event 20 - May 2020	19/05/2020	21.042	33.94	15.814	-5.228				
CSM_BH04	Deep	Event 21 - Jun 2020	18/06/2020	21.3	33.62	15.814	-5.486				
CSM_BH04	Deep	Event 22 - Jul 2020	15/07/2020	21.42	33.695	15.814	-5.606				
CSM_BH04	Deep	Event 23 - Aug 2020	17/08/2020	21.303	33.71	15.814	-5.489				
CSM_BH04	Deep	Event 24 - Sep 2020	14/09/2020	21.1	33.675	15.814	-5.286				
CSM_BH06	Deep	Event 19 - Apr 2020	14/04/2020	20.83	35.4	21.93	1.1	19.52-20.02 fill 14.02-19.52 residual (clayey sand, sandy clay, clay) 10.02-14.02 residual / weathered shale / weathered claystone (13.02)-10.02 sandstone	(13.02)-2.02	-	-
CSM_BH06	Deep	Event 20 - May 2020	19/05/2020	20.63	35.65	21.93	1.3				
CSM_BH06	Deep	Event 21 - Jun 2020	18/06/2020	20.59	35.41	21.93	1.34				
CSM_BH06	Deep	Event 22 - Jul 2020	15/07/2020	20.485	35.37	21.93	1.445				
CSM_BH06	Deep	Event 23 - Aug 2020	18/08/2020	20.48	35.415	21.93	1.45				
CSM_BH06	Deep	Event 24 - Sep 2020	14/09/2020	20.49	35.36	21.93	1.44				
CSM_BH08	Deep	Event 19 - Apr 2020	14/04/2020	13.805	34.98	14.694	0.889	14.28-14.88 concrete / fill 13.98-14.28 residual (sandy clay) (21.88)-13.98 sandstone	(21.88)-(6.88)	-	-
CSM_BH08	Deep	Event 20 - May 2020	18/05/2020	13.64	35.38	14.694	1.054				
CSM_BH08	Deep	Event 21 - Jun 2020	17/06/2020	13.615	34.94	14.694	1.079				
CSM_BH08	Deep	Event 22 - Jul 2020	15/07/2020	13.125	34.95	14.694	1.569				
CSM_BH08	Deep	Event 23 - Aug 2020	18/08/2020	13.445	34.95	14.694	1.249				
CSM_BH08	Deep	Event 24 - Sep 2020	19/09/2020	13.467	34.92	14.694	1.227				
CSM_BH09S	Shallow	Event 19 - Apr 2020	16/04/2020	4.83	6.59	20.807	15.977	20.59-20.89 fill 14.39-20.59 residual (weathered shale)	14.39-17.89	-	-
CSM_BH09S	Shallow	Event 20 - May 2020	20/05/2020	5.046	6.61	20.807	15.761				
CSM_BH09S	Shallow	Event 21 - Jun 2020	19/06/2020	4.825	6.6	20.807	15.982				
CSM_BH09S	Shallow	Event 22 - Jul 2020	16/07/2020	4.805	6.59	20.807	16.002				
CSM_BH09S	Shallow	Event 23 - Aug 2020	18/08/2020	4.705	6.59	20.807	16.102				
CSM_BH09S	Shallow	Event 24 - Sep 2020	16/09/2020	4.92	6.59	20.807	15.887				
CSM_BH10S	Shallow	Event 19 - Apr 2020	15/04/2020	4.04	9.91	15.583	11.543	13.68-15.68 fill 9.68-13.68 redisual soil (sand) 5.68-9.68 residual soil (clayey sand and sandy clay)	5.98-9.68	-	-
CSM_BH10S	Shallow	Event 20 - May 2020	18/05/2020	4.27	9.865	15.583	11.313				
CSM_BH10S	Shallow	Event 21 - Jun 2020	19/06/2020	3.84	9.94	15.583	11.743				
CSM_BH10S	Shallow	Event 22 - Jul 2020	15/07/2020	3.99	9.905	15.583	11.593				
CSM_BH10S	Shallow	Event 23 - Aug 2020	17/08/2020	3.775	9.9	15.583	11.808				
CSM_BH10S	Shallow	Event 24 - Sep 2020	15/09/2020	4.12	9.84	15.583	11.463				
CSM_BH11S	Shallow	Event 24 - Sep 2020	15/09/2020	Dry	5.685	-	-	-	-	-	-
GASW_BH10	Deep	Event 19 - Apr 2020	14/04/2020	19.42	25	20.493	1.073	-	-	0-3.5 fill 3.5-6 silty clay 6-8.5 shale 8.5-25 sandstone	22-25
GASW_BH10	Deep	Event 20 - May 2020	19/05/2020	19.305	25.2	20.493	1.188				
GASW_BH10	Deep	Event 21 - Jun 2020	19/06/2302	19.27	24.95	20.493	1.223				
GASW_BH10	Deep	Event 22 - Jul 2020	15/07/2020	19.235	24.93	20.493	1.258				
GASW_BH10	Deep	Event 23 - Aug 2020	17/08/2020	19.08	24.91	20.493	1.413				
GASW_BH10	Deep	Event 24 - Sep 2020	14/09/2020	19.102	24.87	20.493	1.391				
GASW_BH11	Shallow	Event 19 - Apr 2020	16/04/2020	7.09	8.04	20.548	13.458	-	-	0-3.7 fill 3.7-6 silty clay 6-7 shale 7-9 sandstone	6-9
GASW_BH11	Shallow	Event 20 - May 2020	20/05/2020	7.12	8.06	20.548	13.428				
GASW_BH11	Shallow	Event 21 - Jun 2020	19/06/2020	7.105	8.05	20.548	13.443				
GASW_BH11	Shallow	Event 22 - Jul 2020	16/07/2020	7.11	8.05	20.548	13.438				
GASW_BH11	Shallow	Event 23 - Aug 2020	17/08/2020	7.195	8.05	20.548	13.353				
GASW_BH11	Shallow	Event 24 - Sep 2020	16/09/2020	7.225	8.05	20.548	13.323				
GASW_BH23	Shallow	Event 19 - Apr 2020	16/04/2020	3.605	3.91	19.605	16	17.01-19.61 fill	17.01-18.61	-	-
GASW_BH23	Shallow	Event 20 - May 2020	20/05/2020	3.651	3.94	19.605	15.954				
GASW_BH23	Shallow	Event 21 - Jun 2020	17/06/2020	3.53	3.91	19.605	16.075				
GASW_BH23	Shallow	Event 22 - Jul 2020	16/07/2020	3.36	3.92	19.605	16.245				
GASW_BH23	Shallow	Event 23 - Aug 2020	17/08/2020	3.515	3.91	19.605	16.09				
GASW_BH23	Shallow	Event 24 - Sep 2020	15/09/2020	3.653	3.91	19.605	15.952				
GASW_BH25a	Shallow	Event 19 - Apr 2020	16/04/2020	2.015	2.94	19.631	17.616	16.73-19.63 fill / concrete	16.73-18.63	-	-
GASW_BH25a	Shallow	Event 20 - May 2020	20/05/2020	2.15	2.96	19.631	17.481				
GASW_BH25a	Shallow	Event 21 - Jun 2020	19/06/2020	2.06	2.94	19.631	17.571				
GASW_BH25a	Shallow	Event 22 - Jul 2020	16/07/2020	1.88	2.94	19.631	17.751				
GASW_BH25a	Shallow	Event 23 - Aug 2020	17/08/2020	2.053	2.945	19.631	17.578				
GASW_BH25a	Shallow	Event 24 - Sep 2020	16/09/2020	2.29	2.95	19.631	17.341				
GASW_BH7	Shallow	Event 19 - Apr 2020	15/04/2020	Dry	6.18	21.17	-	20.59-20.89 fill 14.39-20.59 residual (weathered shale)	-	0-2.7 fill 2.7-5 silty clay 5-7 shale	5-7
GASW_BH7	Shallow	Event 20 - May 2020	20/05/2020	Dry	6.2	21.17	-				
GASW_BH7	Shallow	Event 21 - Jun 2020	17/06/2020	Dry	6.18	21.17	-				
GASW_BH7	Shallow	Event 22 - Jul 2020	15/07/2020	Dry	6.8	21.17	-				
GASW_BH7	Shallow	Event 23 - Aug 2020	17/08/2020	Dry	6.19	21.17	-				
GASW_BH7	Shallow	Event 24 - Sep 2020	15/09/2020	Dry	6.2	21.17	-				
SRT_BH047	Shallow	Event 19 - Apr 2020	15/04/2020	3.92	6.95	21.31	17.39	19.71-21.11 fill 14.18-19.71 laminite / residual soil 6.31-14.18 bedrock sandstone	11.91-15.41	-	-
SRT_BH047	Shallow	Event 20 - May 2020	18/05/2020	4.45	6.955	21.31	16.86				
SRT_BH047	Shallow	Event 21 - Jun 2020	17/06/2020	3.652	6.95	21.31	17.658				
SRT_BH047	Shallow	Event 22 - Jul 2020	17/07/2020	3.785	6.95	21.31	17.525				
SRT_BH047	Shallow	Event 23 - Aug 2020	19/08/2020	4.02	6.96	21.31	17.29				
SRT_BH047	Shallow	Event 24 - Sep 2020	15/09/2020	4.965	6.94	21.31	16.345				
SRT_BH050	Shallow	Event 19 - Apr 2020	15/04/2020	2.4	2.76	-	-	-	-	-	-
SRT_BH050	Shallow	Event 20 - May 2020	18/05/2020	Dry	2.77	-	-				
SRT_BH050	Shallow	Event 21 - Jun 2020	17/06/2020	2.385	2.77	-	-				
SRT_BH050	Shallow	Event 22 - Jul 2020	17/07/2020	2.523	2.76	-	-				
SRT_BH050	Shallow	Event 23 - Aug 2020	19/08/2020	2.47	2.785	-	-				
SRT_BH050	Shallow	Event 24 - Sep 2020	15/09/2020	Dry	2.775	-	-				
SRT_BH052	Shallow	Event 19 - Apr 2020	15/04/2020	5.99	7.92	21.4	15.41	19.55-21.40 fill 16.40-19.55 residual soil 6.08-16.40 sandstone	14.2-16.9	-	-
SRT_BH052	Shallow	Event 20 - May 2020	18/05/2020	6.275	7.93	21.4	15.125				
SRT_BH052	Shallow	Event 21 - Jun 2020	17/06/2020	6.08	7.88	21.4	15.32				
SRT_BH052	Shallow	Event 22 - Jul 2020	17/07/2020	6.15	7.81	21.4	15.25				
SRT_BH052	Shallow	Event 23 - Aug 2020	19/08/2020	5.965	7.925	21.4	15.435				
SRT_BH052	Shallow	Event 24 - Sep 2020	15/09/2020	6.295	7.915	21.4	15.105				
SRT_BH059	Shallow	Event 19 - Apr 2020	15/04/2020	3.14	6	22.84	19.7	20.04-22.84 fill 16.29-20.04 shale 7.96-16.29 sandstone	16.29-21.55	-	-
SRT_BH059	Shallow	Event 20 - May 2020	18/05/2020	4.885	6.03	22.84	17.955				
SRT_BH059	Shallow	Event 21 - Jun 2020	17/06/2020	5	6	22.84	17.84				
SRT_BH059	Shallow	Event 22 - Jul 2020	17/07/2020	5.22	6	22.84	17.62				
SRT_BH059	Shallow	Event 23 - Aug 2020	19/08/2020	5.17	6.01	22.84	17.67				
SRT_BH059	Shallow	Event 24 - Sep 2020	15/09/2020	5.365	6	22.84	17.475				
SRT_BH060	Shallow	Event 19 - Apr 2020	15/04/2020	3.98	4.28	-	-	-	-	-	-

mTOC: metres top of casing
AHD: Australian Height Datum
mbgl: metres below ground level

Table B4
Summary of Groundwater Field Parameters - April to September 2020

Well ID	Sampling Event	Date Measured	SWL (mbTOC)	BOC (mbTOC)	Dissolved Oxygen (ppm)	Electrical Conductivity (us/cm)	pH	Ox-Red Potential (mV)	Temperature (°C)	Comments
CSM_BH02	Event 19 - Apr 2020	14/04/2020	20.365	33.235	0.45	1025	6.59	64.8	21	Brown cloudy, no odour/sheen
CSM_BH02	Event 20 - May 2020	19/05/2020	20.165	33.245	0.17	996	6.79	116.1	20.3	Brown cloudy, no odour/sheen
CSM_BH02	Event 21 - June 2020	18/06/2020	20.12	33.16	0.29	944	6.6	-97.8	20.1	Light brown cloudy, no odour/sheen
CSM_BH02	Event 22 - July 2020	15/07/2020	20.02	33.11	2.83	870	5.56	-27.4	19.8	Brown cloudy, no odour/sheen
CSM_BH02	Event 23 - Aug 2020	18/08/2020	20.03	33.12	1.45	558	6.24	119	20	Light brown, some sediments, no odour/sheen
CSM_BH02	Event 24 - Sept 2020	14/09/2020	20.025	33.03	0.32	727	6.61	-17.7	20.3	Light brown, cloudy, no odour/sheen
CSM_BH04	Event 19 - Apr 2020	14/04/2020	20.97	33.91	0.21	492.4	5.79	31.1	21.7	Light brown, turbid, no odour/sheen
CSM_BH04	Event 20 - May 2020	19/05/2020	21.042	33.94	0.23	466	6.03	125.7	21.1	Brown cloudy, no odour/sheen
CSM_BH04	Event 21 - June 2020	18/06/2020	21.3	33.62	0.63	519	5.62	23.6	21.1	Red brown cloudy, no odour/sheen
CSM_BH04	Event 22 - July 2020	15/07/2020	21.42	33.695	1.33	416.7	5.69	80.2	20.9	Orange brown, cloudy, no odour/sheen
CSM_BH04	Event 23 - Aug 2020	17/08/2020	21.305	33.71	0.98	433	5.91	50	21	Light brown, turbid, no odour/sheen
CSM_BH04	Event 24 - Sept 2020	14/09/2020	21.1	33.675	0.9	486.4	5.59	94.6	20.8	Brown, turbid, no odour/sheen
CSM_BH06	Event 19 - Apr 2020	14/04/2020	20.83	35.4	0.27	957	6.26	7.7	22.6	Cloudy, no odour/sheen
CSM_BH06	Event 20 - May 2020	19/05/2020	20.63	35.65	0.11	926	6.24	61.6	22.4	Slightly cloudy, no odour/sheen
CSM_BH06	Event 21 - June 2020	18/06/2020	20.59	35.41	0.27	890	6.1	-12.5	21.7	Slightly cloudy, no odour/sheen
CSM_BH06	Event 22 - July 2020	15/07/2020	20.485	35.37	0.29	840	5.96	-6.6	21.3	Clear, no odour/sheen
CSM_BH06	Event 23 - Aug 2020	18/08/2020	20.48	35.415	0.23	891	6.09	-19.2	22.2	Clear/cloudy, no odour/sheen
CSM_BH06	Event 24 - Sept 2020	14/09/2020	20.49	35.36	0.29	837	6.22	-13.7	22.2	Cloudy, turbid, no odour/sheen
CSM_BH08	Event 19 - Apr 2020	14/04/2020	13.805	34.98	0.46	520	6.5	-22.4	21	Grey cloudy, no odour/sheen
CSM_BH08	Event 20 - May 2020	18/05/2020	13.64	35.38	0.18	500	6.42	-65.2	20.8	Clear, no odour/sheen
CSM_BH08	Event 21 - June 2020	17/06/2020	13.615	34.94	0.32	502	6.26	-21.1	20.6	Grey cloudy, no odour/sheen
CSM_BH08	Event 22 - July 2020	15/07/2020	13.125	34.95	0.15	549	6.23	-30.8	20.8	Clear, no odour/sheen
CSM_BH08	Event 23 - Aug 2020	19/08/2020	13.445	34.95	0.26	535	6.17	-28.2	20.8	Clear, no odour/sheen
CSM_BH08	Event 24 - Sept 2020	14/09/2020	13.467	34.92	0.14	548	6.37	-34.5	20.7	Clear, no odour/sheen
CSM_BH09S	Event 19 - Apr 2020	16/04/2020	4.83	6.59	0.21	571	6.18	2.5	20.5	Brown, no odour/sheen
CSM_BH09S	Event 20 - May 2020	20/05/2020	5.046	6.61	0.12	547	5.86	102.6	20.1	Brown cloudy, no odour/sheen
CSM_BH09S	Event 21 - June 2020	19/06/2020	4.825	6.6	0.61	558	5.93	10.1	19.8	Clear, no odour/sheen
CSM_BH09S	Event 22 - July 2020	16/07/2020	4.805	6.59	0.24	549	5.74	34.9	19.5	Brown, turbid, no odour/sheen
CSM_BH09S	Event 23 - Aug 2020	18/08/2020	4.705	6.59	0.18	565	5.77	71	19.2	Orange brown, cloudy, no odour/sheen
CSM_BH09S	Event 24 - Sept 2020	16/09/2020	4.92	6.59	0.15	453.8	5.98	43.3	19.8	Clear to light brown, slightly turbid, no odour/sheen
CSM_BH10S	Event 19 - Apr 2020	15/04/2020	4.04	9.91	0.28	281.1	6	155.7	21.5	Brown cloudy, no odour/sheen
CSM_BH10S	Event 20 - May 2020	18/05/2020	4.27	9.865	0.21	292.4	5.85	125.1	21.5	Brown cloudy, no odour/sheen
CSM_BH10S	Event 21 - June 2020	19/06/2020	3.84	9.94	1.68	382.2	6.1	129.6	20.1	Brown cloudy, no odour/sheen
CSM_BH10S	Event 22 - July 2020	15/07/2020	3.99	9.905	0.83	238.5	5.17	169	20.1	Brown, turbid, no odour/sheen
CSM_BH10S	Event 23 - Aug 2020	17/08/2020	3.775	9.9	0.41	270.9	5.48	164.1	20.9	Clear, no odour/sheen
CSM_BH10S	Event 24 - Sept 2020	15/09/2020	4.12	9.84	0.29	256.3	5.33	228	20.7	Brown cloudy, no odour/sheen
CSM_BH11S	Event 24 - Sept 2020	15/09/2020	DRY	5.685	-	-	-	-	-	DRY
GASW_BH10	Event 19 - Apr 2020	14/04/2020	19.42	25	1.33	1409	6.17	-56.8	21.5	Grey cloudy, organic odour, no sheen
GASW_BH10	Event 20 - May 2020	19/05/2020	19.305	25.2	0.22	1417	6.3	89.6	20.5	Grey cloudy, organic odour, no sheen
GASW_BH10	Event 21 - June 2020	18/06/2020	19.27	24.95	0.67	1444	6.08	-113.4	20.2	Light grey cloudy, no odour/sheen
GASW_BH10	Event 22 - July 2020	15/07/2020	19.235	24.93	0.87	1430	6.2	-150.4	19.8	Grey, organic odour, no sheen
GASW_BH10	Event 23 - Aug 2020	17/08/2020	19.08	24.91	0.29	1394	6.58	-166.3	19.8	Grey, organic odour, no sheen
GASW_BH10	Event 24 - Sept 2020	14/09/2020	19.102	24.87	0.44	1122	6.49	-108.5	19.8	Grey cloudy, organic odour, no sheen
GASW_BH11	Event 19 - Apr 2020	16/04/2020	7.09	8.04	1	362.7	6.32	21.8	21.3	Dark grey, silty, hydrocarbon odour
GASW_BH11	Event 20 - May 2020	20/05/2020	7.12	8.06	1.79	340.8	5.72	104.3	20.2	Brown cloudy, no odour/sheen
GASW_BH11	Event 21 - June 2020	19/06/2020	7.105	8.05	2.61	296.8	5.86	81.5	18.8	Brown turbid, slight unknown odour, no sheen
GASW_BH11	Event 22 - July 2020	16/07/2020	7.11	8.05	2.95	304.2	5.56	72.9	18.3	Brown grey, turbind, no odour/sheen
GASW_BH11	Event 23 - Aug 2020	17/08/2020	7.195	8.05	3.47	277.6	6.47	45.9	18.4	Grey to brown, cloudy, no odour/sheen
GASW_BH11	Event 24 - Sept 2020	16/09/2020	7.225	8.05	3.16	265.8	5.91	131.1	18.8	Brown cloudy, no odour/sheen

Table B4
Summary of Groundwater Field Parameters - April to September 2020

Well ID	Sampling Event	Date Measured	SWL (mbTOC)	BOC (mbTOC)	Dissolved Oxygen (ppm)	Electrical Conductivity (us/cm)	pH	Ox-Red Potential (mV)	Temperature (°C)	Comments
GASW_BH23	Event 19 - Apr 2020	16/04/2020	3.605	3.91	1.78	492.4	7.48	-110.8	23.7	Grey, sediment, strong hydrocarbon odour
GASW_BH23	Event 20 - May 2020	20/05/2020	3.651	3.94	-	-	-	-	-	Grey cloudy, hydrocarbon odour, no sheen
GASW_BH23	Event 21 - June 2020	17/06/2020	3.53	3.91	-	-	-	-	-	Dark grey cloudy, sediments, hydrocarbon odour
GASW_BH23	Event 22 - July 2020	16/07/2020	3.36	3.92	0.72	632	6.97	-62.7	17.1	Dark grey, turbid, strong hydrocarbon odour, no sheen
GASW_BH23	Event 23 - Aug 2020	17/08/2020	3.515	3.91	-	-	-	-	-	Black to dark grey, turbid, strong hydrocarbon odour, and no sheen
GASW_BH23	Event 24 - Sept 2020	15/09/2020	3.653	3.91	-	-	-	-	-	Black to dark grey, turbid, strong hydrocarbon odour, and no sheen
GASW_BH25A	Event 19 - Apr 2020	16/04/2020	2.015	2.94	0.13	378.6	7.4	-173.6	22.6	Grey cloudy, hydrocarbon odour, no sheen
GASW_BH25A	Event 20 - May 2020	20/05/2020	2.15	2.96	0.34	401.8	6.79	101.3	21	Grey cloudy, strong hydrocarbon odour, no sheen
GASW_BH25A	Event 21 - June 2020	19/06/2020	2.06	2.94	0.19	301.9	7.68	-207.2	18.2	Black to dark grey, turbid, strong hydrocarbon odour, and slight sheen
GASW_BH25A	Event 22 - July 2020	16/07/2020	1.88	2.94	0.29	448	7.05	-160.7	16.8	Grey, some sediment, strong hydrocarbon odour, no sheen
GASW_BH25A	Event 23 - Aug 2020	17/08/2020	2.053	2.945	0.24	380.5	7.06	-222.7	16.6	Dark grey, cloudy, hydrocarbon odour, no sheen
GASW_BH25A	Event 24 - Sept 2020	16/09/2020	2.29	2.95	-	-	-	-	-	Dark grey, cloudy, hydrocarbon odour, no sheen
GASW_BH7	Event 19 - Apr 2020	16/04/2020	DRY	6.18	-	-	-	-	-	DRY
GASW_BH7	Event 20 - May 2020	20/05/2020	DRY	6.2	-	-	-	-	-	DRY
GASW_BH7	Event 21 - June 2020	17/06/2020	DRY	6.18	-	-	-	-	-	DRY
GASW_BH7	Event 22 - July 2020	15/07/2020	DRY	6.18	-	-	-	-	-	DRY
GASW_BH7	Event 23 - Aug 2020	17/08/2020	DRY	6.19	-	-	-	-	-	DRY
GASW_BH7	Event 24 - Sept 2020	15/09/2020	DRY	6.2	-	-	-	-	-	DRY
SRT_BH047	Event 19 - Apr 2020	15/04/2020	3.92	6.95	2.02	431.3	7.1	129.4	20.9	Grey, slightly turbid, no odour/sheen
SRT_BH047	Event 20 - May 2020	18/05/2020	4.45	6.955	1.4	409.1	7.3	57.8	20.4	Grey to light brown, cloudy, no odour/sheen
SRT_BH047	Event 21 - June 2020	17/06/2020	3.652	6.95	3.49	344.2	6.88	105.3	19.4	Slightly cloudy, no odour/sheen
SRT_BH047	Event 22 - July 2020	17/07/2020	3.785	6.95	2.43	383.1	6.99	118.7	19.7	Cloudy, no odour/sheen
SRT_BH047	Event 23 - Aug 2020	19/08/2020	4.02	6.96	2.36	391.2	7.07	86.3	19.8	Brown, cloudy, no odour/sheen
SRT_BH047	Event 24 - Sept 2020	15/09/2020	4.965	6.94	1.8	368	7.4	119.9	19.5	Grey, cloudy, turbid, no odour/sheen
SRT_BH050	Event 19 - Apr 2020	15/04/2020	2.4	2.76	-	-	3.9	-	-	Brown cloudy, no odour/sheen
SRT_BH050	Event 20 - May 2020	18/05/2020	DRY	2.77	-	-	-	-	-	DRY
SRT_BH050	Event 21 - June 2020	17/06/2020	2.385	2.77	-	-	-	-	-	Brown cloudy, no odour/sheen
SRT_BH050	Event 22 - July 2020	17/07/2020	2.523	2.76	-	-	-	-	-	Grab sample taken due to limited water
SRT_BH050	Event 23 - Aug 2020	19/08/2020	2.47	2.785	-	-	-	-	-	Brown, cloudy, no odour/sheen
SRT_BH050	Event 24 - Sept 2020	15/09/2020	DRY	2.775	-	-	-	-	-	DRY
SRT_BH052	Event 19 - Apr 2020	15/04/2020	5.99	7.92	5.84	263.6	5.99	162.6	20.7	Cloudy, no odour/sheen
SRT_BH052	Event 20 - May 2020	18/05/2020	6.275	7.93	2.54	333.2	6.38	82.1	20.9	Clear, no odour/sheen
SRT_BH052	Event 21 - June 2020	17/06/2020	6.08	7.88	4.01	319.2	6.23	131.8	19.9	Clear, no odour/sheen
SRT_BH052	Event 22 - July 2020	17/07/2020	6.16	7.91	3.19	324.1	5.97	160.4	19.9	Clear, slight sediment, no odour/sheen
SRT_BH052	Event 23 - Aug 2020	19/08/2020	5.965	7.925	5.38	272.3	5.99	159.8	20	Brown, cloudy, no odour/sheen
SRT_BH052	Event 24 - Sept 2020	15/09/2020	6.295	7.915	2.23	331	6.22	160.5	19.8	Clear to slightly cloudy, no odour/sheen
SRT_BH059	Event 19 - Apr 2020	15/04/2020	3.14	6	2.1	341.5	6.87	137.2	21.6	Brown cloudy, no odour/sheen
SRT_BH059	Event 20 - May 2020	18/05/2020	4.885	6.03	3.79	373.2	7.03	82.8	20.7	Clear to cloudy, no odour/sheen
SRT_BH059	Event 21 - June 2020	17/06/2020	5	6	-	-	-	-	-	Clear, no odour/sheen
SRT_BH059	Event 22 - July 2020	17/07/2020	5.22	6	2.05	363.9	6.86	124.8	19.2	Clear, no odour/sheen
SRT_BH059	Event 23 - Aug 2020	19/08/2020	5.17	6.01	4.19	375.4	7.01	103.3	20	Clear, no odour/sheen
SRT_BH059	Event 24 - Sept 2020	15/09/2020	5.365	6	2.86	351.3	7.17	133.4	19.6	Brown cloudy, no odour/sheen
SRT_BH060	Event 19 - Apr 2020	15/04/2020	3.98	4.28	-	-	8	-	-	Brown cloudy, no odour/sheen

Appendix B
Table B5
Groundwate Aggressivity Comparison Table - Steel Piles
April to September 2020

Well ID	Date Measured	pH (field)	pH (lab)	chloride (mg/L)	soil condition A	soil condition B	aquifer
					high permerability soil (sand, gravel) that are in groundwater	low permeability soils (silt and clay) or all soils above groundwater	Table 6.5.2 C in AS2159
CSM_BH02	14/04/2020	6.59	6.6	190	non-aggressive	non-aggressive	deep
CSM_BH02	19/05/2020	6.79	7.5	150	non-aggressive	non-aggressive	deep
CSM_BH02	19/06/2020	6.6	7.4	160	non-aggressive	non-aggressive	deep
CSM_BH02	15/07/2020	5.56	6.4	160	non-aggressive	non-aggressive	deep
CSM_BH02	18/08/2020	6.24	6.9	47	non-aggressive	non-aggressive	deep
CSM_BH02	14/09/2020	6.61	7.9	85	non-aggressive	non-aggressive	deep
CSM_BH04	14/04/2020	5.79	5.9	140	non-aggressive	non-aggressive	off-site deep
CSM_BH04	19/05/2020	6.03	6.3	76	non-aggressive	non-aggressive	off-site deep
CSM_BH04	18/06/2020	5.62	6.8	77	non-aggressive	non-aggressive	off-site deep
CSM_BH04	15/07/2020	5.69	6.4	58	non-aggressive	non-aggressive	off-site deep
CSM_BH04	17/08/2020	5.91	6.5	71	non-aggressive	non-aggressive	off-site deep
CSM_BH04	14/09/2020	5.59	6.7	73	non-aggressive	non-aggressive	off-site deep
CSM_BH06	14/04/2020	6.26	5.9	250	non-aggressive	non-aggressive	off-site deep
CSM_BH06	19/05/2020	6.24	6.7	180	non-aggressive	non-aggressive	off-site deep
CSM_BH06	18/06/2020	6.1	6.6	190	non-aggressive	non-aggressive	off-site deep
CSM_BH06	15/07/2020	5.96	6.6	240	non-aggressive	non-aggressive	off-site deep
CSM_BH06	18/08/2020	6.09	6.6	200	non-aggressive	non-aggressive	off-site deep
CSM_BH06	14/09/2020	6.22	7	200	non-aggressive	non-aggressive	off-site deep
CSM_BH08	14/04/2020	6.5	6	120	non-aggressive	non-aggressive	off-site deep
CSM_BH08	18/05/2020	6.42	6.4	79	non-aggressive	non-aggressive	off-site deep
CSM_BH08	17/06/2020	6.26	6.7	49	non-aggressive	non-aggressive	off-site deep
CSM_BH08	15/07/2020	6.23	6.9	90	non-aggressive	non-aggressive	off-site deep
CSM_BH08	18/08/2020	6.17	6.7	84	non-aggressive	non-aggressive	off-site deep
CSM_BH08	19/09/2020	6.37	6.9	84	non-aggressive	non-aggressive	off-site deep
CSM_BH09S	16/04/2020	6.18	5.8	59	non-aggressive	non-aggressive	shallow
CSM_BH09S	20/05/2020	5.86	6.4	47	non-aggressive	non-aggressive	shallow
CSM_BH09S	19/06/2020	5.93	6.6	48	non-aggressive	non-aggressive	shallow
CSM_BH09S	16/07/2020	5.74	6.4	49	non-aggressive	non-aggressive	shallow
CSM_BH09S	18/08/2020	5.77	6.4	52	non-aggressive	non-aggressive	shallow
CSM_BH09S	16/09/2020	5.98	6.5	51	non-aggressive	non-aggressive	shallow
CSM_BH10S	15/04/2020	6	7.4	33	non-aggressive	non-aggressive	off-site shallow
CSM_BH10S	18/05/2020	5.85	6.3	19	non-aggressive	non-aggressive	off-site shallow
CSM_BH10S	19/06/2020	6.1	6.7	23	non-aggressive	non-aggressive	off-site shallow
CSM_BH10S	15/07/2020	5.17	5.9	22	non-aggressive	non-aggressive	off-site shallow
CSM_BH10S	17/08/2020	5.48	6.1	23	non-aggressive	non-aggressive	off-site shallow
CSM_BH10S	15/09/2020	5.33	6.3	23	non-aggressive	non-aggressive	off-site shallow
CSM_BH11S	15/09/2020	-	-	-	-	-	shallow
GASW_BH10	14/04/2020	6.17	6.4	360	non-aggressive	non-aggressive	deep
GASW_BH10	19/05/2020	6.3	7	160	non-aggressive	non-aggressive	deep
GASW_BH10	19/06/2302	6.08	6.6	190	non-aggressive	non-aggressive	deep
GASW_BH10	15/07/2020	6.2	6.9	190	non-aggressive	non-aggressive	deep
GASW_BH10	17/08/2020	6.58	7	180	non-aggressive	non-aggressive	deep
GASW_BH10	14/09/2020	6.49	7.2	190	non-aggressive	non-aggressive	deep
GASW_BH11	16/04/2020	6.32	6.3	77	non-aggressive	non-aggressive	shallow
GASW_BH11	20/05/2020	5.72	6.8	35	non-aggressive	non-aggressive	shallow
GASW_BH11	19/06/2020	5.86	6.6	36	non-aggressive	non-aggressive	shallow
GASW_BH11	16/07/2020	5.56	6.3	39	non-aggressive	non-aggressive	shallow
GASW_BH11	17/08/2020	6.47	6.9	27	non-aggressive	non-aggressive	shallow
GASW_BH11	16/09/2020	5.91	6.7	37	non-aggressive	non-aggressive	shallow
GASW_BH23	16/04/2020	7.48	-	-	non-aggressive	non-aggressive	shallow
GASW_BH23	20/05/2020	-	-	-	-	-	shallow
GASW_BH23	17/06/2020	-	7.6	18	non-aggressive	non-aggressive	shallow
GASW_BH23	16/07/2020	6.97	7.2	20	non-aggressive	non-aggressive	shallow
GASW_BH23	17/08/2020	-	7.4	15	non-aggressive	non-aggressive	shallow
GASW_BH23	15/09/2020	-	-	-	-	-	shallow
GASW_BH25a	16/04/2020	7.4	6.3	26	non-aggressive	non-aggressive	shallow
GASW_BH25a	20/05/2020	6.79	7.2	13	non-aggressive	non-aggressive	shallow
GASW_BH25a	19/06/2020	7.68	7.3	10	non-aggressive	non-aggressive	shallow
GASW_BH25a	16/07/2020	7.05	7.6	17	non-aggressive	non-aggressive	shallow
GASW_BH25a	17/08/2020	7.06	7.1	12	non-aggressive	non-aggressive	shallow
GASW_BH25a	16/09/2020	-	7.9	14	non-aggressive	non-aggressive	shallow
GASW_BH7	15/04/2020	-	-	-	-	-	shallow
GASW_BH7	20/05/2020	-	-	-	-	-	shallow
GASW_BH7	17/06/2020	-	-	-	-	-	shallow
GASW_BH7	15/07/2020	-	-	-	-	-	shallow
GASW_BH7	17/08/2020	-	-	-	-	-	shallow
GASW_BH7	15/09/2020	-	-	-	-	-	shallow
SRT_BH047	15/04/2020	7.1	6.5	33	non-aggressive	non-aggressive	shallow
SRT_BH047	18/05/2020	7.3	6.9	43	non-aggressive	non-aggressive	shallow
SRT_BH047	17/06/2020	6.88	6.9	26	non-aggressive	non-aggressive	shallow
SRT_BH047	17/07/2020	6.99	7.5	50	non-aggressive	non-aggressive	shallow
SRT_BH047	19/08/2020	7.07	7.6	22	non-aggressive	non-aggressive	shallow
SRT_BH047	15/09/2020	7.4	7.9	25	non-aggressive	non-aggressive	shallow
SRT_BH050	15/04/2020	-	3.9	52	Moderate	Mild	shallow
SRT_BH050	18/05/2020	-	4.2	11	Mild	non-aggressive	shallow

Appendix B
Table B5
Groundwate Aggressivity Comparison Table - Steel Piles
April to September 2020

Well ID	Date Measured	pH (field)	pH (lab)	chloride (mg/L)	soil condition A	soil condition B	aquifer
SRT_BH050	17/06/2020	-	-	-	-	-	shallow
SRT_BH050	17/07/2020	-	-	-	-	-	shallow
SRT_BH050	19/08/2020	-	-	-	-	-	shallow
SRT_BH050	15/09/2020	-	-	-	-	-	shallow
SRT_BH052	15/04/2020	5.99	7.8	52	non-aggressive	non-aggressive	shallow
SRT_BH052	18/05/2020	6.38	6.5	40	non-aggressive	non-aggressive	shallow
SRT_BH052	17/06/2020	6.23	7.8	41	non-aggressive	non-aggressive	shallow
SRT_BH052	17/07/2020	5.97	6.7	45	non-aggressive	non-aggressive	shallow
SRT_BH052	19/08/2020	5.99	6.4	38	non-aggressive	non-aggressive	shallow
SRT_BH052	15/09/2020	6.22	7.6	45	non-aggressive	non-aggressive	shallow
SRT_BH059	15/04/2020	6.87	6.7	57	non-aggressive	non-aggressive	shallow
SRT_BH059	18/05/2020	7.03	7.2	7	non-aggressive	non-aggressive	shallow
SRT_BH059	17/06/2020	-	7.6	8.7	non-aggressive	non-aggressive	shallow
SRT_BH059	17/07/2020	6.86	7.3	11	non-aggressive	non-aggressive	shallow
SRT_BH059	19/08/2020	7.01	7.3	9.2	non-aggressive	non-aggressive	shallow
SRT_BH059	15/09/2020	7.17	7.8	7.5	non-aggressive	non-aggressive	shallow
SRT_BH060	15/04/2020	-	8	73	non-aggressive	non-aggressive	shallow

Appendix B
Table B6
Groundwater Aggressivity Comparison Table - Concrete Piles
April to September 2020

Well ID	Date Measured	pH (field)	pH (lab)	Sulfate (mg/L)	chloride (mg/L)	soil condition A	soil condition B	aquifer
						high permerability soil (sand, gravel) that are in groundwater	low permeability soils (silt and clay) or all soils above groundwater	Table 6.5.2 C in AS2159
CSM_BH02	14/04/2020	6.59	6.6	28	190	mild	non-aggressive	deep
CSM_BH02	19/05/2020	6.79	7.5	29	150	mild	non-aggressive	deep
CSM_BH02	19/06/2020	6.6	7.4	29	160	mild	non-aggressive	deep
CSM_BH02	15/07/2020	5.56	6.4	32	160	mild	non-aggressive	deep
CSM_BH02	18/08/2020	6.24	6.9	37	47	mild	non-aggressive	deep
CSM_BH02	14/09/2020	6.61	7.9	34	85	mild	non-aggressive	deep
CSM_BH04	14/04/2020	5.79	5.9	34	140	mild	non-aggressive	off-site deep
CSM_BH04	19/05/2020	6.03	6.3	35	76	mild	non-aggressive	off-site deep
CSM_BH04	18/06/2020	5.62	6.8	37	77	mild	non-aggressive	off-site deep
CSM_BH04	15/07/2020	5.69	6.4	46	58	mild	non-aggressive	off-site deep
CSM_BH04	17/08/2020	5.91	6.5	40	71	mild	non-aggressive	off-site deep
CSM_BH04	14/09/2020	5.59	6.7	34	73	mild	non-aggressive	off-site deep
CSM_BH06	14/04/2020	6.26	5.9	28	250	mild	non-aggressive	off-site deep
CSM_BH06	19/05/2020	6.24	6.7	28	180	mild	non-aggressive	off-site deep
CSM_BH06	18/06/2020	6.1	6.6	21	190	mild	non-aggressive	off-site deep
CSM_BH06	15/07/2020	5.96	6.6	28	240	mild	non-aggressive	off-site deep
CSM_BH06	18/08/2020	6.09	6.6	21	200	mild	non-aggressive	off-site deep
CSM_BH06	14/09/2020	6.22	7	20	200	mild	non-aggressive	off-site deep
CSM_BH08	14/04/2020	6.5	6	40	120	mild	non-aggressive	off-site deep
CSM_BH08	18/05/2020	6.42	6.4	42	79	mild	non-aggressive	off-site deep
CSM_BH08	17/06/2020	6.26	6.7	120	49	mild	non-aggressive	off-site deep
CSM_BH08	15/07/2020	6.23	6.9	46	90	mild	non-aggressive	off-site deep
CSM_BH08	18/08/2020	6.17	6.7	46	84	mild	non-aggressive	off-site deep
CSM_BH08	19/09/2020	6.37	6.9	48	84	mild	non-aggressive	off-site deep
CSM_BH09S	16/04/2020	6.18	5.8	130	59	mild	non-aggressive	shallow
CSM_BH09S	20/05/2020	5.86	6.4	120	47	mild	non-aggressive	shallow
CSM_BH09S	19/06/2020	5.93	6.6	120	48	mild	non-aggressive	shallow
CSM_BH09S	16/07/2020	5.74	6.4	130	49	mild	non-aggressive	shallow
CSM_BH09S	18/08/2020	5.77	6.4	140	52	mild	non-aggressive	shallow
CSM_BH09S	16/09/2020	5.98	6.5	130	51	mild	non-aggressive	shallow
CSM_BH10S	15/04/2020	6	7.4	47	33	mild	non-aggressive	off-site shallow
CSM_BH10S	18/05/2020	5.85	6.3	51	19	mild	non-aggressive	off-site shallow
CSM_BH10S	19/06/2020	6.1	6.7	49	23	mild	non-aggressive	off-site shallow
CSM_BH10S	15/07/2020	5.17	5.9	56	22	moderate	mild	off-site shallow
CSM_BH10S	17/08/2020	5.48	6.1	62	23	moderate	mild	off-site shallow
CSM_BH10S	15/09/2020	5.33	6.3	62	23	moderate	mild	off-site shallow
CSM_BH11S	15/09/2020	-	-	-	-	-	-	shallow
GASW_BH10	14/04/2020	6.17	6.4	<5	360	mild	non-aggressive	deep
GASW_BH10	19/05/2020	6.3	7	<5	160	mild	non-aggressive	deep
GASW_BH10	19/06/2302	6.08	6.6	<5	190	mild	non-aggressive	deep
GASW_BH10	15/07/2020	6.2	6.9	5.4	190	mild	non-aggressive	deep
GASW_BH10	17/08/2020	6.58	7	<5	180	mild	non-aggressive	deep
GASW_BH10	14/09/2020	6.49	7.2	<5	190	mild	non-aggressive	deep
GASW_BH11	16/04/2020	6.32	6.3	39	77	mild	non-aggressive	shallow
GASW_BH11	20/05/2020	5.72	6.8	46	35	mild	non-aggressive	shallow
GASW_BH11	19/06/2020	5.86	6.6	42	36	mild	non-aggressive	shallow
GASW_BH11	16/07/2020	5.56	6.3	51	39	mild	non-aggressive	shallow
GASW_BH11	17/08/2020	6.47	6.9	25	27	mild	non-aggressive	shallow
GASW_BH11	16/09/2020	5.91	6.7	45	37	mild	non-aggressive	shallow
GASW_BH23	16/04/2020	7.48	-	-	-	mild	non-aggressive	shallow
GASW_BH23	20/05/2020	-	-	-	-	-	-	shallow
GASW_BH23	17/06/2020	-	7.6	54	18	mild	non-aggressive	shallow
GASW_BH23	16/07/2020	6.97	7.2	180	20	mild	non-aggressive	shallow
GASW_BH23	17/08/2020	-	7.4	79	15	mild	non-aggressive	shallow
GASW_BH23	15/09/2020	-	-	-	-	-	-	shallow
GASW_BH25a	16/04/2020	7.4	6.3	43	26	mild	non-aggressive	shallow
GASW_BH25a	20/05/2020	6.79	7.2	38	13	mild	non-aggressive	shallow
GASW_BH25a	19/06/2020	7.68	7.3	46	10	mild	non-aggressive	shallow
GASW_BH25a	16/07/2020	7.05	7.6	120	17	mild	non-aggressive	shallow
GASW_BH25a	17/08/2020	7.06	7.1	71	12	mild	non-aggressive	shallow
GASW_BH25a	16/09/2020	-	7.9	41	14	mild	non-aggressive	shallow
GASW_BH7	15/04/2020	-	-	-	-	-	-	shallow
GASW_BH7	20/05/2020	-	-	-	-	-	-	shallow
GASW_BH7	17/06/2020	-	-	-	-	-	-	shallow
GASW_BH7	15/07/2020	-	-	-	-	-	-	shallow
GASW_BH7	17/08/2020	-	-	-	-	-	-	shallow
GASW_BH7	15/09/2020	-	-	-	-	-	-	shallow
SRT_BH047	15/04/2020	7.1	6.5	11	33	mild	non-aggressive	shallow
SRT_BH047	18/05/2020	7.3	6.9	13	43	mild	non-aggressive	shallow
SRT_BH047	17/06/2020	6.88	6.9	13	26	mild	non-aggressive	shallow
SRT_BH047	17/07/2020	6.99	7.5	16	50	mild	non-aggressive	shallow
SRT_BH047	19/08/2020	7.07	7.6	11	22	mild	non-aggressive	shallow
SRT_BH047	15/09/2020	7.4	7.9	10	25	mild	non-aggressive	shallow
SRT_BH050	15/04/2020	-	3.9	45	52	very severe	severe	shallow
SRT_BH050	18/05/2020	-	4.2	44	11	severe	moderate	shallow

Appendix B
Table B6
Groundwater Aggressivity Comparison Table - Concrete Piles
April to September 2020

Well ID	Date Measured	pH (field)	pH (lab)	Sulfate (mg/L)	chloride (mg/L)	soil condition A	soil condition B	aquifer
SRT_BH050	17/06/2020	-	-	-	-	-	-	shallow
SRT_BH050	17/07/2020	-	-	-	-	-	-	shallow
SRT_BH050	19/08/2020	-	-	-	-	-	-	shallow
SRT_BH050	15/09/2020	-	-	-	-	-	-	shallow
SRT_BH052	15/04/2020	5.99	7.8	15	52	mild	non-aggressive	shallow
SRT_BH052	18/05/2020	6.38	6.5	30	40	mild	non-aggressive	shallow
SRT_BH052	17/06/2020	6.23	7.8	29	41	mild	non-aggressive	shallow
SRT_BH052	17/07/2020	5.97	6.7	34	45	mild	non-aggressive	shallow
SRT_BH052	19/08/2020	5.99	6.4	18	38	mild	non-aggressive	shallow
SRT_BH052	15/09/2020	6.22	7.6	35	45	mild	non-aggressive	shallow
SRT_BH059	15/04/2020	6.87	6.7	5.9	57	mild	non-aggressive	shallow
SRT_BH059	18/05/2020	7.03	7.2	14	7	mild	non-aggressive	shallow
SRT_BH059	17/06/2020	-	7.6	16	8.7	mild	non-aggressive	shallow
SRT_BH059	17/07/2020	6.86	7.3	23	11	mild	non-aggressive	shallow
SRT_BH059	19/08/2020	7.01	7.3	22	9.2	mild	non-aggressive	shallow
SRT_BH059	15/09/2020	7.17	7.8	21	7.5	mild	non-aggressive	shallow
SRT_BH060	15/04/2020	-	8	39	73	mild	non-aggressive	shallow

Appendix B
Table B7
Calculated RPD Tables

Field Duplicates (water)
Filter: [Sampled_Date_

	Lab Report Number	714027	714027		738860	738860		732590	732590		726825	726825		720682	720682		744463	744463		720682
	Field ID	CSM_BH10S	QC02	**RPD**	CSM_BH09S	QC02	**RPD**	CSM_BH09S	QC02	**RPD**	CSM_BH02	QC02	**RPD**	CSM_BH10S	QC02	**RPD**	CSM_BH02	QC02	**RPD**	CSM_BH08
	Sampled Date/Time	15/04/2020	15/04/2020		18/08/2020	18/08/2020		16/07/2020	16/07/2020		18/06/2020	18/06/2020		18/05/2020	18/05/2020		14/09/2020	14/09/2020		18/05/2020
Chem_Gr	**ChemNam**	**Units**	**EQL**																		
Metals	Arsenic (Fi	mg/L	0.001	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0	0.002	0.002	0	<0.001	<0.01	0	0.001	0.002	67	<0.001
	Cadmium (	mg/L	0.0002 : 0.0001 (Interlab	<0.0002	<0.0002	0	<0.0002	<0.0002	0	<0.0002	<0.0002	0	<0.0002	<0.0002	0	<0.0002	<0.002	0	<0.0002	<0.0002	0	<0.0002
	Chromium	mg/L	0.001	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.01	0	<0.001	<0.001	0	<0.001
	Copper (Fi	mg/L	0.001	<0.001	<0.001	0	0.002	0.001	67	0.002	<0.001	67	<0.001	0.003	100	**0.003**	**0.011**	**114**	0.003	0.002	40	0.007
	Lead (Filte	mg/L	0.001	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.01	0	<0.001	<0.001	0	<0.001
	Mercury (F	mg/L	0.0001	<0.0001	<0.0001	0	<0.0001	<0.0001	0	<0.0001	<0.0001	0	<0.0001	<0.0001	0	<0.0001	<0.001	0	<0.0001	<0.0001	0	<0.0001
	Nickel (Filt	mg/L	0.001	<0.001	<0.001	0	0.011	0.011	0	0.007	0.007	0	0.023	0.025	8	0.001	<0.01	0	0.019	0.02	5	0.005
	Zinc (Filter	mg/L	0.005	<0.005	<0.005	0	0.051	0.051	0	0.025	0.025	0	0.008	0.032	120	<0.005	<0.05	0	0.014	0.014	0	0.015
BTEXN	Benzene	µg/l	1	<1	<1	0	<1	<1	0	<1	<1	0	<1	<1	0	<1	<1	0	<1	<1	0	<1
	Toluene	µg/l	1 : 2 (Interlab)	<1	<1	0	<1	<1	0	<1	<1	0	<1	<1	0	<1	<1	0	<1	<1	0	<1
	Ethylbenze	µg/l	1 : 2 (Interlab)	<1	<1	0	<1	<1	0	<1	<1	0	<1	<1	0	<1	<1	0	<1	<1	0	<1
	Xylene (o)	µg/l	1 : 2 (Interlab)	<1	<1	0	<1	<1	0	<1	<1	0	<1	<1	0	<1	<1	0	<1	<1	0	<1
	Xylene (m	µg/l	2	<2	<2	0	<2	<2	0	<2	<2	0	<2	<2	0	<2	<2	0	<2	<2	0	<2
	Xylene Tot	µg/l	3 : 2 (Interlab)	<3	<3	0	<3	<3	0	<3	<3	0	<3	<3	0	<3	<3	0	<3	<3	0	<3
	Naphthaler	µg/l	10 : 5 (Interlab)	<10	<10	0	<10	<10	0	<10	<10	0	<10	<10	0	<10	<10	0	<10	<10	0	<10
TRH - NEF	F1 (C6-C1	µg/l	20	<20	<20	0	<20	<20	0	<20	<20	0	<20	<20	0	<20	<20	0	<20	<20	0	<20
	C6-C10 Fr	µg/l	20	<20	<20	0	<20	<20	0	<20	<20	0	<20	<20	0	<20	<20	0	<20	<20	0	<20
	F2 (>C10-(	µg/l	50 : 100 (Interlab)	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	<50
	>C10-C16	µg/l	50 : 100 (Interlab)	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	<50
	F3 (>C16-(	µg/l	100	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0	<100
	F4 (>C34-(	µg/l	100	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0	<100
	>C10-C40	µg/l	100	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0	<100
'M 2013																						
TRH - NEF	C6-C9 Fra	µg/l	20	<20	<20	0	<20	<20	0	<20	<20	0	<20	<20	0	<20	<20	0	<20	<20	0	<20
	C10-C14 F	µg/l	50	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	<50
	C15-C28 F	µg/l	100	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0	<100
	C29-C36 F	µg/l	100 : 50 (Interlab)	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0	<100
	C10-C36 (	µg/l	100 : 50 (Interlab)	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0	<100
'M 1999																						
PAHs - sta	Acenaphth	µg/l	0.01 : 0.1 (Interlab)	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01
	Acenaphth	µg/l	0.01 : 0.1 (Interlab)	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01
	Anthracene	µg/l	0.01 : 0.1 (Interlab)	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01
	Benz(a)an	µg/l	0.01 : 0.1 (Interlab)	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01
	Benzo(a)p	µg/l	0.01 : 0.05 (Interlab)	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01
	Benzo[b+j]	µg/l	0.01 : 0.1 (Interlab)	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01
	Benzo(k)flu	µg/l	0.01 : 0.1 (Interlab)	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01
	Benzo(g,h,	µg/l	0.01 : 0.1 (Interlab)	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01
	Chrysene	µg/l	0.01 : 0.1 (Interlab)	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01
	Dibenz(a,h	µg/l	0.01 : 0.1 (Interlab)	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01
	Fluoranthe	µg/l	0.01 : 0.1 (Interlab)	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01
	Fluorene	µg/l	0.01 : 0.1 (Interlab)	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01
	Indeno(1,2	µg/l	0.01 : 0.1 (Interlab)	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01
	Naphthaler	µg/l	0.01 : 0.1 (Interlab)	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	0.1	<0.01	164	<0.01	<0.01	0	0.05
	Phenanthr	µg/l	0.01 : 0.1 (Interlab)	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01
	Pyrene	µg/l	0.01 : 0.1 (Interlab)	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01
	PAHs (Sur	µg/l	0.01 : 0.05 (Interlab)	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	<0.01	<0.01	0	0.1	<0.01	164	<0.01	<0.01	0	0.05

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 200 (1-10 x EQL); 50 (10-30 x EQL); 50 (> 30 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

Appendix B
Table B7
Calculated RPD Tables

Field Duplicates (water)
Filter: [Sampled_Date_

Lab Report Number	ES2017182		726825	ES2021404		732590	ES2024606		738860	ES2028968		744463	ES2032425	
Field ID	QC01	RPD	CSM_BH08	QC01	RPD	CSM_BH08	QC01	RPD	CSM_BH04	QC01	RPD	CSM_BH08	QC01	RPD
Sampled Date/Time	18/05/2020		17/06/2020	17/06/2020		15/07/2020	15/07/2020		17/08/2020	17/08/2020		14/09/2020	14/09/2020	
Chem_Gr	ChemNam	Units	EQL											
Metals	Arsenic (Fi	mg/L	0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
	Cadmium (	mg/L	0.0002 : 0.0001 (Interlab	<0.0001	0	<0.0002	<0.0001	0	<0.0002	<0.0001	0	<0.0002	<0.0001	0	<0.0002	<0.0001	0
	Chromium	mg/L	0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
	Copper (Fi	mg/L	0.001	0.002	111	0.002	<0.001	67	0.009	<0.001	160	0.001	<0.001	0	<0.001	<0.001	0
	Lead (Filte	mg/L	0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0	<0.001	<0.001	0
	Mercury (F	mg/L	0.0001	<0.0001	0	<0.0001	<0.0001	0	<0.0001	<0.0001	0	<0.0001	<0.0001	0	<0.0001	<0.0001	0
	Nickel (Filt	mg/L	0.001	0.005	0	0.014	0.01	33	0.015	0.016	6	0.048	0.043	11	0.004	0.002	67
	Zinc (Filter	mg/L	0.005	0.023	42	0.02	0.016	22	0.034	<0.005	149	0.039	0.035	11	0.012	<0.005	82
BTEXN	Benzene	µg/l	1	<1	0	<1	<1	0	<1	<1	0	<1	<1	0	<1	<1	0
	Toluene	µg/l	1 : 2 (Interlab)	<2	0	<1	<2	0	<1	<2	0	<1	<2	0	<1	<2	0
	Ethylbenze	µg/l	1 : 2 (Interlab)	<2	0	<1	<2	0	<1	<2	0	<1	<2	0	<1	<2	0
	Xylene (o)	µg/l	1 : 2 (Interlab)	<2	0	<1	<2	0	<1	<2	0	<1	<2	0	<1	<2	0
	Xylene (m	µg/l	2	<2	0	<2	<2	0	<2	<2	0	<2	<2	0	<2	<2	0
	Xylene Tot	µg/l	3 : 2 (Interlab)	<2	0	<3	<2	0	<3	<2	0	<3	<2	0	<3	<2	0
	Naphthaler	µg/l	10 : 5 (Interlab)	<5	0	<10	<5	0	<10	<5	0	<10	<5	0	<10	<5	0
TRH - NEF	F1 (C6-C1	µg/l	20	<20	0	<20	<20	0	<20	<20	0	<20	<20	0	<20	<20	0
	C6-C10 Fr	µg/l	20	<20	0	<20	<20	0	<20	<20	0	<20	<20	0	<20	<20	0
	F2 (>C10-(	µg/l	50 : 100 (Interlab)	<100	0	<50	<100	0	<50	<100	0	<50	<100	0	<50	<100	0
	>C10-C16	µg/l	50 : 100 (Interlab)	<100	0	<50	<100	0	<50	<100	0	<50	<100	0	<50	<100	0
	F3 (>C16-(	µg/l	100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0
	F4 (>C34-(	µg/l	100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0
	>C10-C40	µg/l	100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0
'M 2013																	
TRH - NEF	C6-C9 Fra	µg/l	20	<20	0	<20	<20	0	<20	<20	0	<20	<20	0	<20	<20	0
	C10-C14 F	µg/l	50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0
	C15-C28 F	µg/l	100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0
	C29-C36 F	µg/l	100 : 50 (Interlab)	<50	0	<100	<50	0	<100	<50	0	<100	<50	0	<100	<50	0
	C10-C36 (	µg/l	100 : 50 (Interlab)	<50	0	<100	<50	0	<100	<50	0	<100	<50	0	<100	<50	0
'M 1999																	
PAHs - sta	Acenaphth	µg/l	0.01 : 0.1 (Interlab)	<0.1	0	<0.01	<0.1	0	<0.01	<0.1	0	<0.01	<0.1	0	<0.01	<0.1	0
	Acenaphth	µg/l	0.01 : 0.1 (Interlab)	<0.1	0	<0.01	<0.1	0	<0.01	<0.1	0	<0.01	<0.1	0	<0.01	<0.1	0
	Anthracene	µg/l	0.01 : 0.1 (Interlab)	<0.1	0	<0.01	<0.1	0	<0.01	<0.1	0	<0.01	<0.1	0	<0.01	<0.1	0
	Benz(a)ant	µg/l	0.01 : 0.1 (Interlab)	<0.1	0	<0.01	<0.1	0	<0.01	<0.1	0	<0.01	<0.1	0	<0.01	<0.1	0
	Benzo(a)py	µg/l	0.01 : 0.05 (Interlab)	<0.05	0	<0.01	<0.05	0	<0.01	<0.05	0	<0.01	<0.05	0	<0.01	<0.05	0
	Benzo[b+j]	µg/l	0.01 : 0.1 (Interlab)	<0.1	0	<0.01	<0.1	0	<0.01	<0.1	0	<0.01	<0.1	0	<0.01	<0.1	0
	Benzo(k)flu	µg/l	0.01 : 0.1 (Interlab)	<0.1	0	<0.01	<0.1	0	<0.01	<0.1	0	<0.01	<0.1	0	<0.01	<0.1	0
	Benzo(g,h,	µg/l	0.01 : 0.1 (Interlab)	<0.1	0	<0.01	<0.1	0	<0.01	<0.1	0	<0.01	<0.1	0	<0.01	<0.1	0
	Chrysene	µg/l	0.01 : 0.1 (Interlab)	<0.1	0	<0.01	<0.1	0	<0.01	<0.1	0	<0.01	<0.1	0	<0.01	<0.1	0
	Dibenz(a,h	µg/l	0.01 : 0.1 (Interlab)	<0.1	0	<0.01	<0.1	0	<0.01	<0.1	0	<0.01	<0.1	0	<0.01	<0.1	0
	Fluoranthe	µg/l	0.01 : 0.1 (Interlab)	<0.1	0	<0.01	<0.1	0	<0.01	<0.1	0	<0.01	<0.1	0	<0.01	<0.1	0
	Fluorene	µg/l	0.01 : 0.1 (Interlab)	<0.1	0	<0.01	<0.1	0	<0.01	<0.1	0	<0.01	<0.1	0	<0.01	<0.1	0
	Indeno(1,2	µg/l	0.01 : 0.1 (Interlab)	<0.1	0	<0.01	<0.1	0	<0.01	<0.1	0	<0.01	<0.1	0	<0.01	<0.1	0
	Naphthaler	µg/l	0.01 : 0.1 (Interlab)	<0.1	0	0.09	<0.1	0	<0.01	<0.1	0	<0.01	<0.1	0	<0.01	<0.1	0
	Phenanthre	µg/l	0.01 : 0.1 (Interlab)	<0.1	0	<0.01	<0.1	0	<0.01	<0.1	0	<0.01	<0.1	0	<0.01	<0.1	0
	Pyrene	µg/l	0.01 : 0.1 (Interlab)	<0.1	0	<0.01	<0.1	0	<0.01	<0.1	0	<0.01	<0.1	0	<0.01	<0.1	0
	PAHs (Sun	µg/l	0.01 : 0.05 (Interlab)	<0.05	0	0.09	<0.05	57	<0.01	<0.05	0	<0.01	<0.05	0	<0.01	<0.05	0

*RPDs have only been considered where a concentratic
**High RPDs are in bold (Acceptable RPDs for each EC
***Interlab Duplicates are matched on a per compound l

Filter: [Sampled_Date_Time] >= '01 Apr 2020' and [Sampled_Date_Time] <= '22 Oct 2020'
C:\Users\jvickers\Documents\Chemistry QA Checker1

Appendix B
Table B8
Rinsates and trip blanks

Field Blanks (water)
Filter: [Sampled_Date_Time] >= '01 Apr 2020' and [Sampled_Date_Time] <= '22 Oct 2020

Lab Report Number	714027	738860	732590	726825	720682	744463	714027	738860	732590	726825	720682	744463
Field ID	RB01	RB01	RB01	RB01	RB01	RB01	TRIP BLANK	TRIP BLANK	TRIP BLANK	TRIP BLANK	TRIP BLANK	TRIP BLANK
Sampled_Date/Time	15/04/2020	17/08/2020	16/07/2020	19/06/2020	20/05/2020	15/09/2020	14/04/2020	17/08/2020	15/07/2020	17/06/2020	18/05/2020	15/09/2020
Sample Type	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Trip_B	Trip_B	Trip_B	Trip_B	Trip_B	Trip_B
Chem_Group	**ChemName**	**Units**	**EQL**														
BTEXN	Benzene	µg/l	1							<1	<1	<1	<1	<1	<1
	Toluene	µg/l	1							<1	<1	<1	<1	<1	<1
	Ethylbenzene	µg/l	1							<1	<1	<1	<1	<1	<1
	Xylene (o)	µg/l	1							<1	<1	<1	<1	<1	<1
	Xylene (m & p)	µg/l	2							<2	<2	<2	<2	<2	<2
	Xylene Total	µg/l	2							<3	<3	<3	<3	<3	<3
	BTEX (Sum of Total) - Lab Calc	µg/L	1												
	Naphthalene (BTEXN suite)	µg/l	5							<10	<10	<10	<10	<10	<10
Metals	Arsenic	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001						
	Arsenic (Filtered)	mg/L	0.001												
	Cadmium	mg/L	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002						
	Cadmium (Filtered)	mg/L	0.0001												
	Chromium (III+VI)	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001						
	Chromium (III+VI) (Filtered)	mg/L	0.001												
	Copper	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001						
	Copper (Filtered)	mg/L	0.001												
	Lead	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001						
	Lead (Filtered)	mg/L	0.001												
	Manganese	mg/L	0.005												
	Manganese (Filtered)	mg/L	0.005												
	Mercury	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001						
	Mercury (Filtered)	mg/L	0.0001												
	Nickel	mg/L	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001						
	Nickel (Filtered)	mg/L	0.001												
	Zinc	mg/L	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005						
	Zinc (Filtered)	mg/L	0.005												
TRH - NEPM 1999	C6-C9 Fraction	µg/l	20							<20	<20	<20	<20	<20	<20
	C10-C14 Fraction	µg/L	50												
	C15-C28 Fraction	µg/l	100												
	C29-C36 Fraction	µg/l	50												
	C10-C36 (Sum of Total)	µg/l	50												
TRH - NEPM 1999 - SG Cleanup	C10-C14 SG Cleanup	µg/l	50												
	C15-C28 SG Cleanup	µg/l	100												
	C29-C36 SG Cleanup	µg/l	100												
	C10-C36 (sum) SG Cleanup	µg/l	100												
TRH - NEPM 2013	F1 (C6-C10 minus BTEX)	µg/l	20							<20	<20	<20	<20	<20	<20
	C6-C10 Fraction	µg/l	20							<20	<20	<20	<20	<20	<20
	F2 (>C10-C16 minus Naphthalene)	µg/l	50												
	>C10-C16 Fraction	µg/l	50												
	F3 (>C16-C34 Fraction)	µg/l	100												
	F4 (>C34-C40 Fraction)	µg/l	100												
	>C10-C40 (Sum of Total)	µg/l	100												
TRH - NEPM 2013 - SG Cleanup	>C10-C16 SG Cleanup	µg/l	50												
	>C16-C34 SG Cleanup	µg/l	100												
	>C34-C40 SG Cleanup	µg/l	100												

Appendix B

Table B9 summary of detection and exceedance of contaminants of potential concern (COPC) in groundwater samples April to September 2020)

COPC	Analyte Detected	Gasworks contaminant	Onsite human health criteria exceeded (vapour)	Offsite human health criteria exceeded	Offsite ecological criteria exceeded
pH	yes	no	yes	yes	yes
Cyanide	yes	yes	NA	no	yes
Metals	yes	no	NA	no	yes
Ammonia	yes	yes	NA	NA	yes
BTEX	yes	yes	yes (vapour)	yes	yes
TRH	yes	yes	yes (vapour)	NA	NA
PAH	yes	yes	NA	yes	no
phenol	yes	yes	NA	no	no
OCP	no	no	NA	no	yes (due to laboratory detection limits higher than criteria)
OPP	no	no	NA	yes (due to laboratory detection limits higher than criteria)	yes (due to laboratory detection limits higher than criteria)
PCB	no	no	NA	NA	NA

NA : not applicable as no value available in adopted assessment criteria

The australian drinking water guideline value has been adopted as the onsite and offsite human criterion for pH

The ANZECC (2000) default trigger value for estuaries in South-east Australia has been adopted as the ecological criterion for pH

Appendix C
Borehole log for newly installed monitoring well CSM-BH11s

ADE CONSULTING GROUP
6/7 MILLENNIUM COURT SILVERWATER
NSW/2128
Telephone: 1300796922

BOREHOLE NUMBER CSM_BH11S

CLIENT LAING O'ROURKE **PROJECT NAME** GROUNDWATER WELL INSTALLATION

PROJECT NUMBER LOR-09-18200 **PROJECT LOCATION** PLATFORM 22, CENTRAL STATION, CHIPPENDALE, NSW

DATE STARTED 22/8/20 **COMPLETED** 22/8/20 **R.L. SURFACE** 0 **DATUM** mAHD

DRILLING CONTRACTOR ADE CONSULTING GROUP **SLOPE** 90° **BEARING** ---

EQUIPMENT XC DRILL **HOLE LOCATION** PLATFORM 22/23, CENTRAL STATION

HOLE SIZE 110 mm **LOGGED BY** AH **CHECKED BY** MP

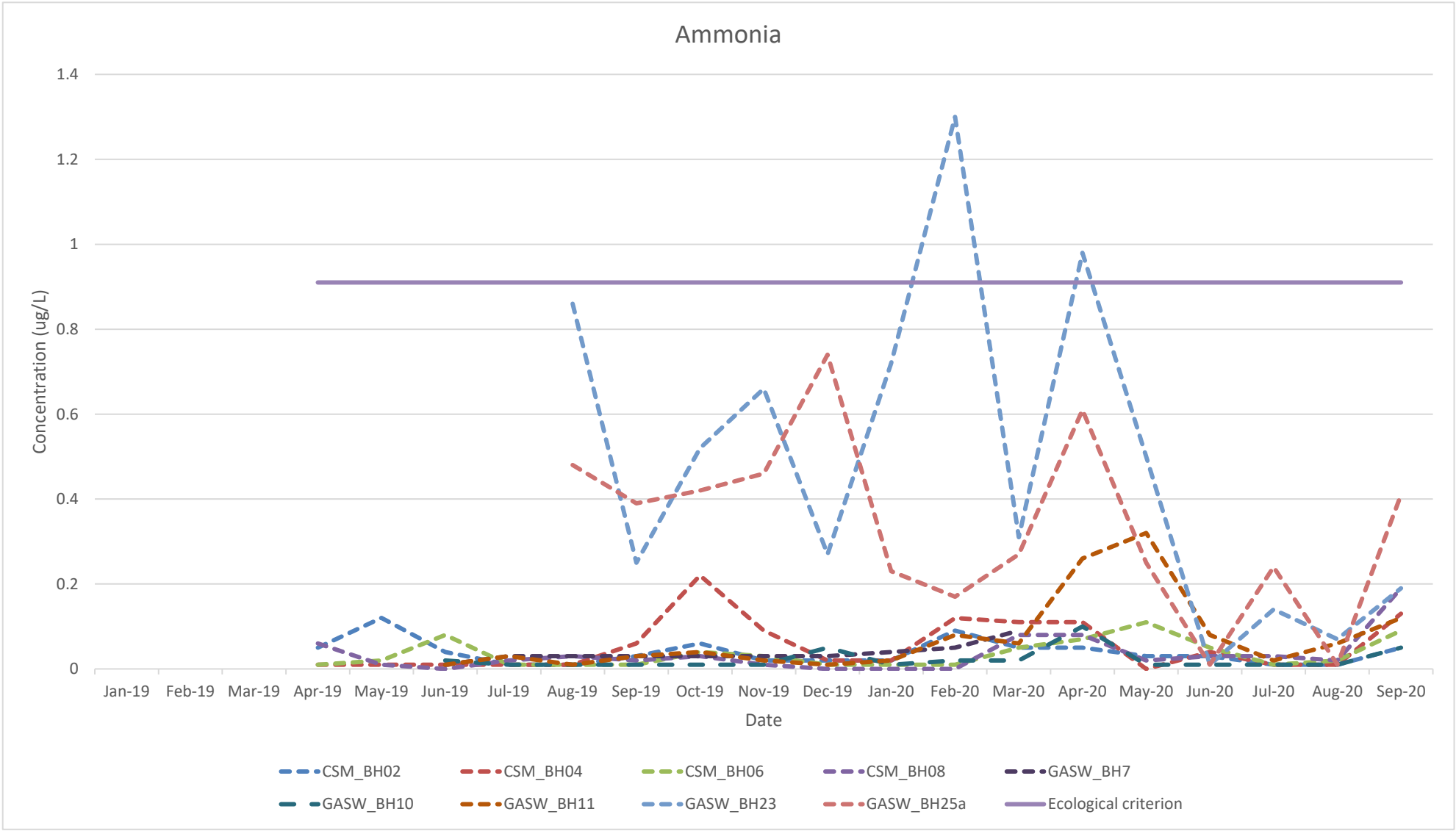
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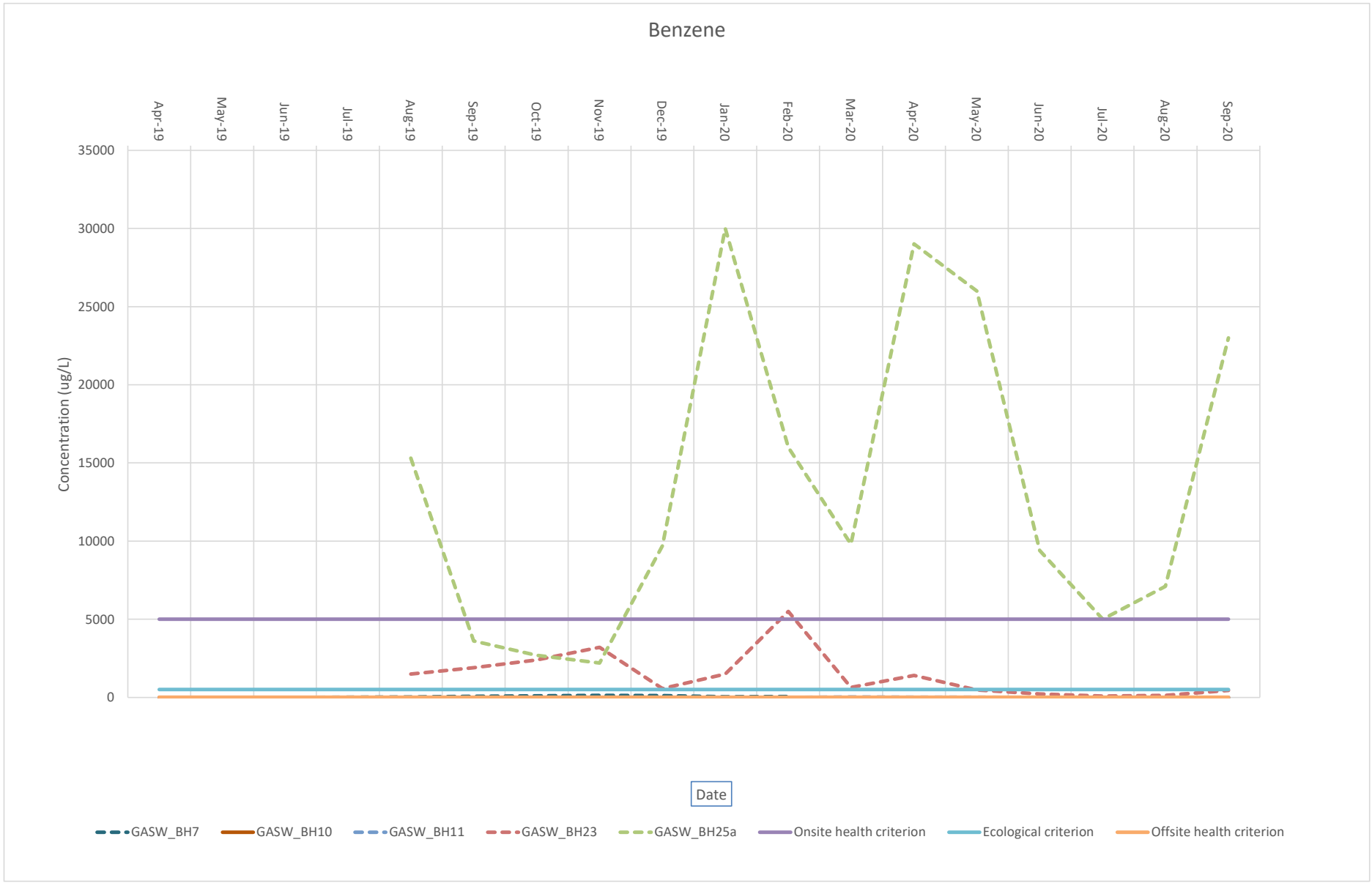
Method	Water	Well Details	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture Content	Consistency	PID (ppm)	Samples Tests Remarks	Additional Observations
							TILES					
							CONCRETE					
						SM	**FILL**:Silty SAND, fine grained, dark grey with trace sub-angular gravel.	M	L			
						GW	**GRAVEL**: coarse grained, dark grey with sub-angular gravel.	D	L			
			-1	1		CL	**Sandy CLAY**: medium plasticity dark brown with trace sub-angular gravel.	D	Fb			
			-2	2		SC	**CLAYEY SAND**: coarse grained dark brown with sub-angular gravel and cobbles.	M	L			
			-3	3		CL	**Sandy CLAY**: low plasticity, dark grey with sub-angular gravel.	W	Vs			
			-4	4			**SHALE**: highly weathered, medium to dark grey.	D	MD/HW			
			-5	5								
			-6	6			Borehole CSM-BH11S terminated at 5.75m					

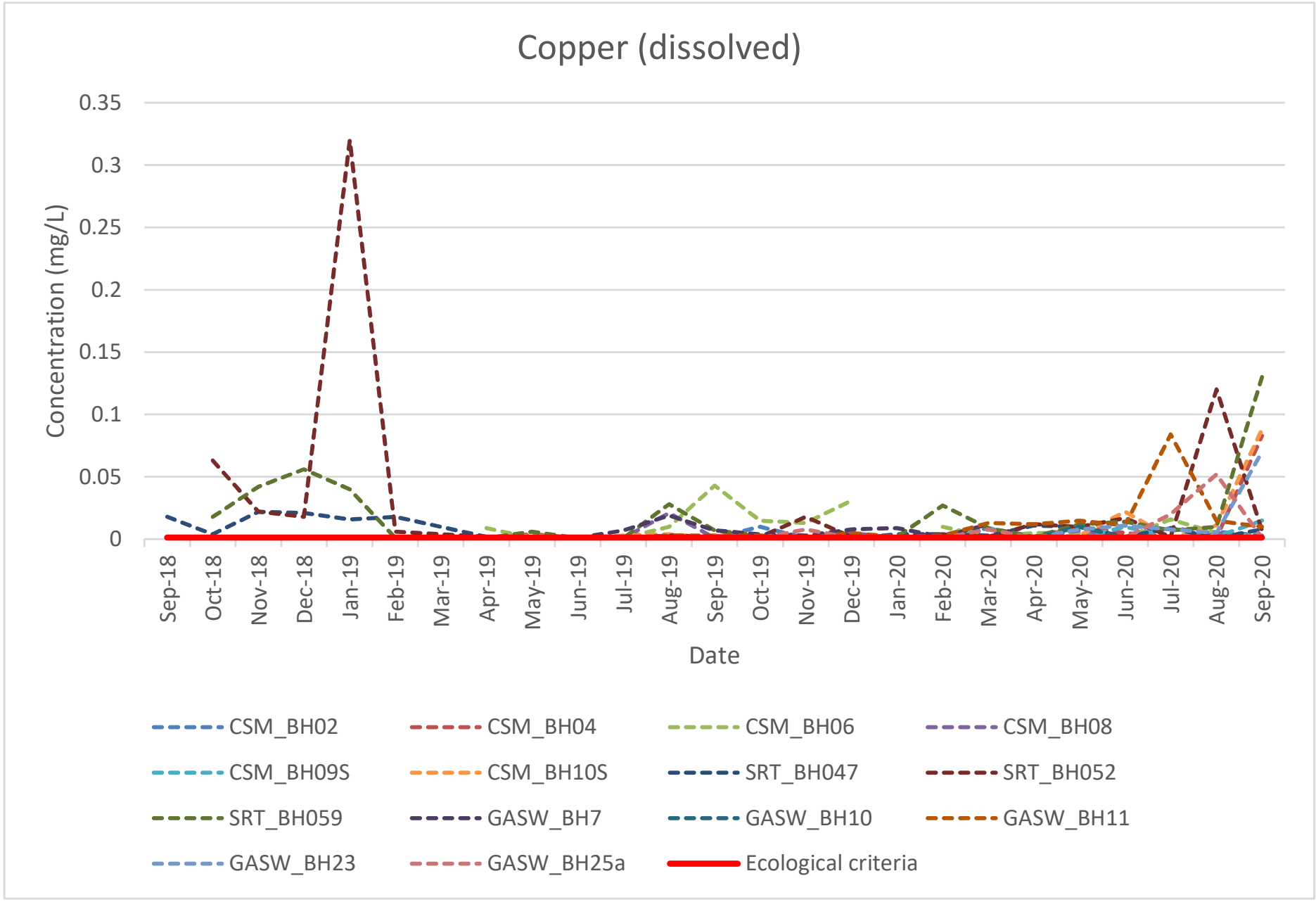
ADE_BOREHOLE / TESTPIT LOR-09-18200.GPJ GINT STD AUSTRALIA.GDT 29/9/20

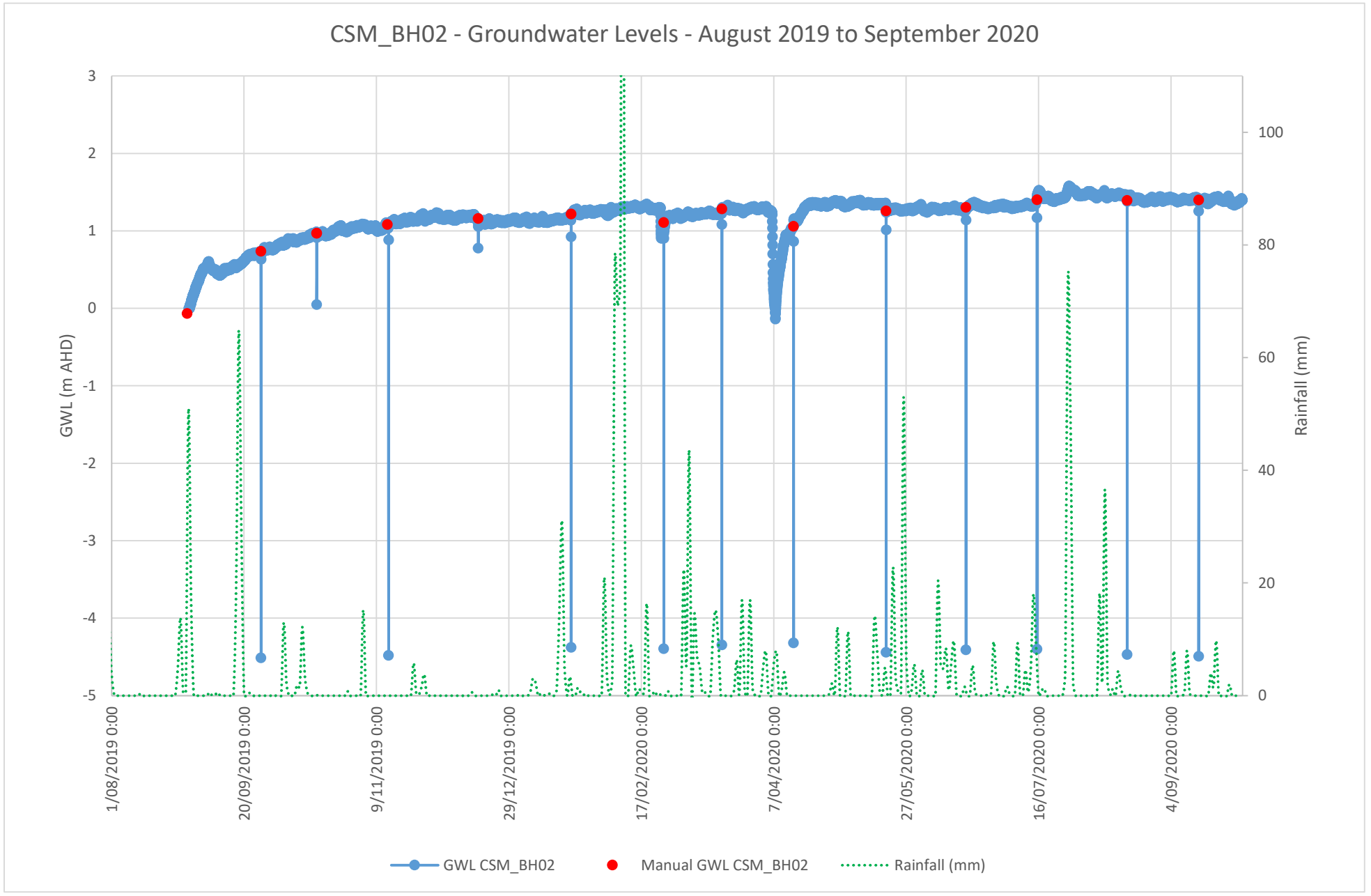
Appendix D
Graphs for groundwater levels and selected analytes / water quality parameters

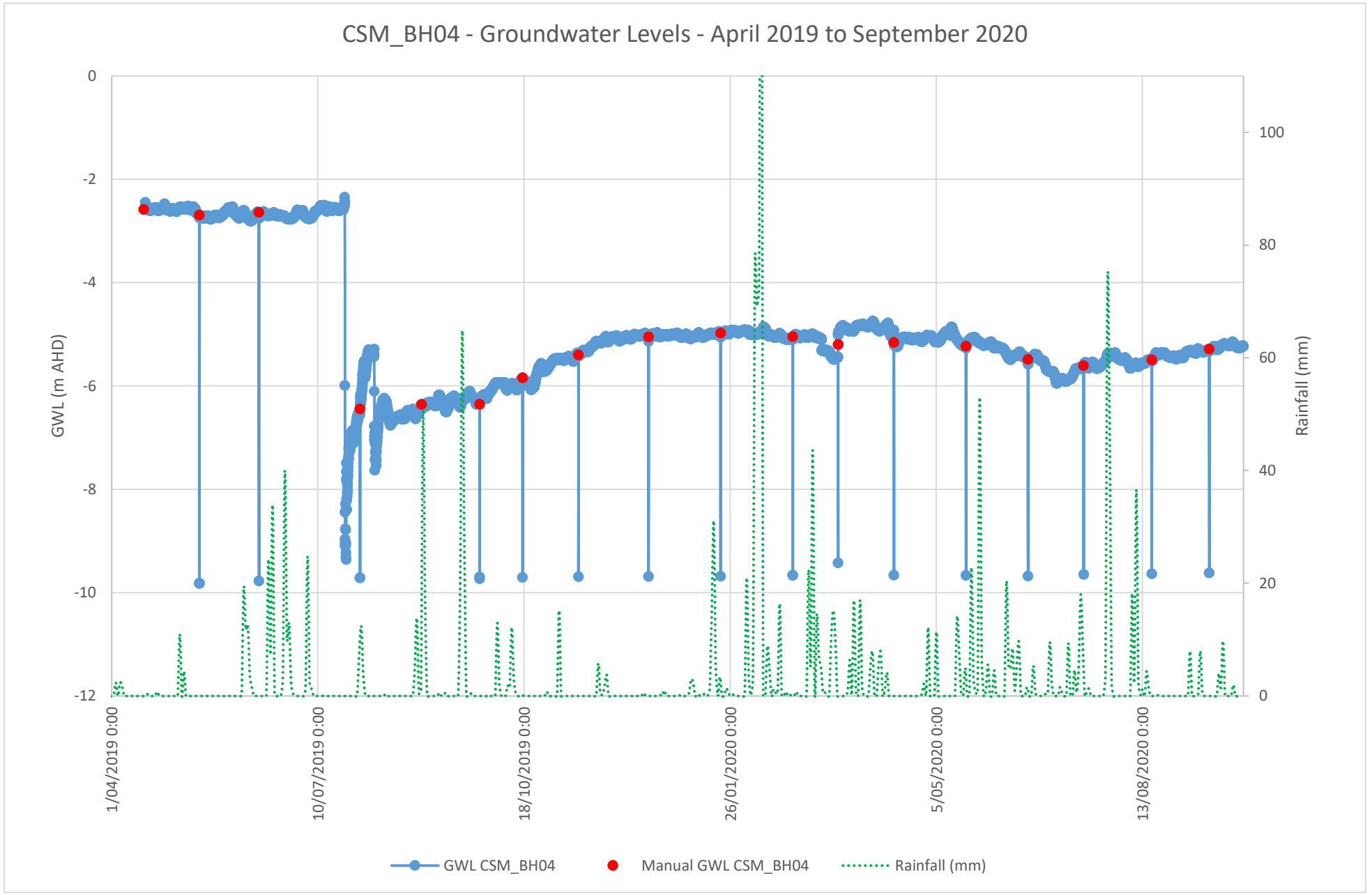
AGJV

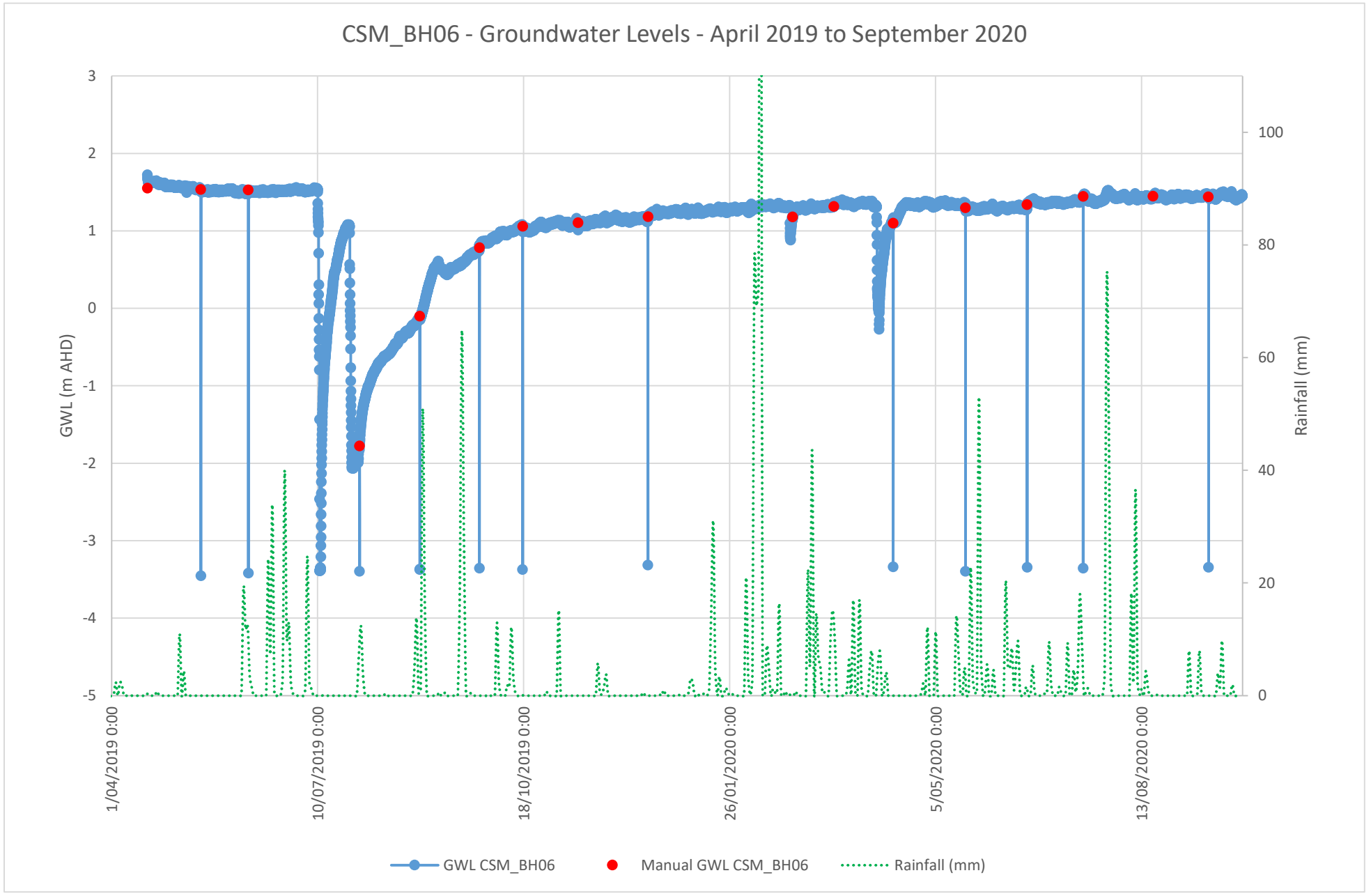

Ammonia
1.4
1.2
1
0.8
0.6
0.4
0.2
0
Concentration (ug/L)
Jan-19
Feb-19
Mar-19
Apr-19
May-19
Jun-19
Jul-19
Aug-19
Sep-19
Oct-19
Nov-19
Dec-19
Jan-20
Feb-20
Mar-20
Apr-20
May-20
Jun-20
Jul-20
Aug-20
Sep-20
Date
CSM_BH02
CSM_BH04
CSM_BH06
CSM_BH08
GASW_BH7
GASW_BH10
GASW_BH11
GASW_BH23
GASW_BH25a
Ecological criterion

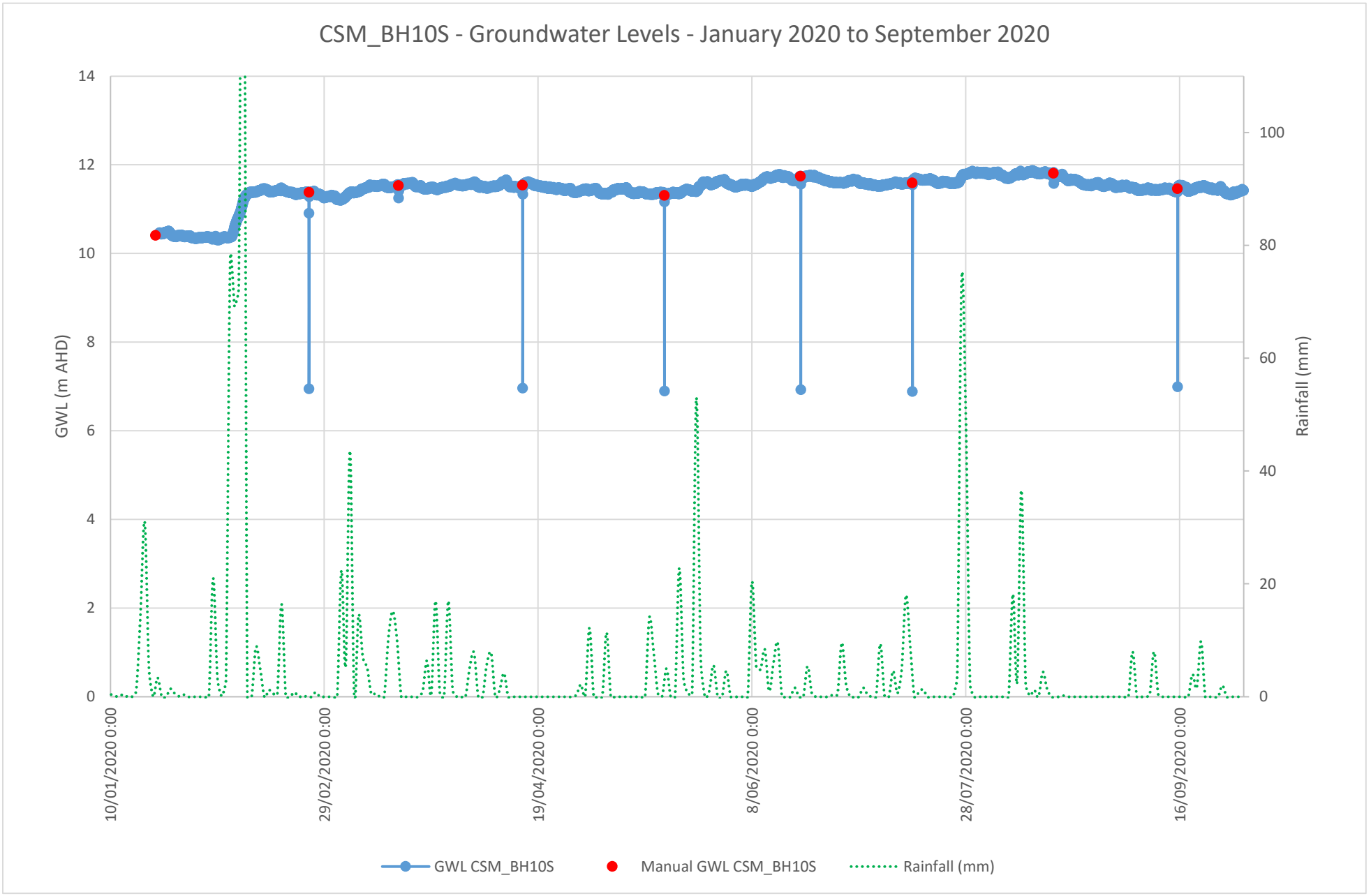

Benzene
Apr-19
May-19
Jun-19
Jul-19
Aug-19
Sep-19
Oct-19
Nov-19
Dec-19
Jan-20
Feb-20
Mar-20
Apr-20
May-20
Jun-20
Jul-20
Aug-20
Sep-20
35000
30000
25000
20000
15000
10000
5000
0
Concentration (ug/L)
Date
GASW_BH7
GASW_BH10
GASW_BH11
GASW_BH23
GASW_BH25a
Onsite health criterion
Ecological criterion
Offsite health criterion

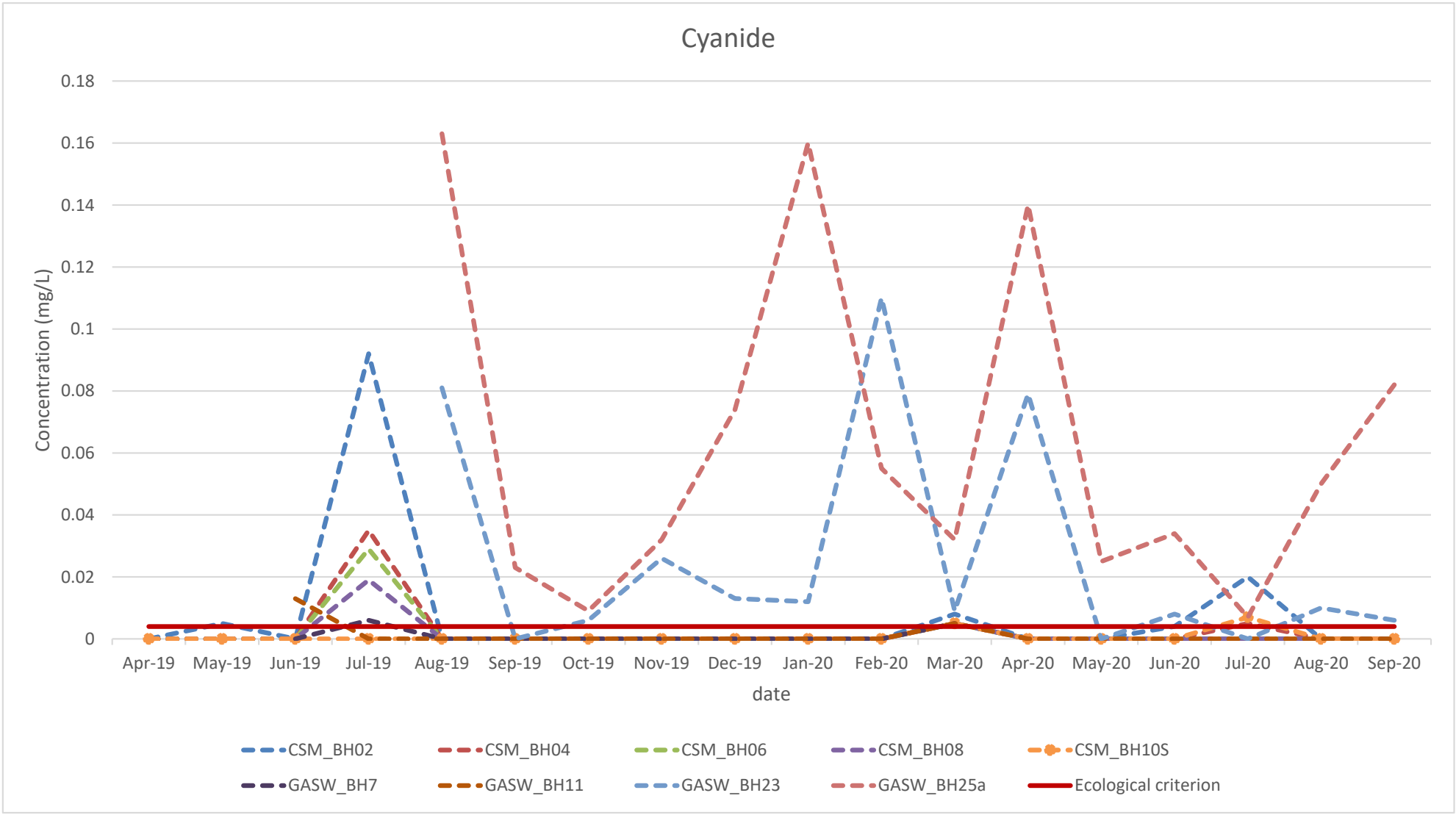

Copper (dissolved)
Concentration (mg/L)
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
Sep-18
Oct-18
Nov-18
Dec-18
Jan-19
Feb-19
Mar-19
Apr-19
May-19
Jun-19
Jul-19
Aug-19
Sep-19
Oct-19
Nov-19
Dec-19
Jan-20
Feb-20
Mar-20
Apr-20
May-20
Jun-20
Jul-20
Aug-20
Sep-20
Date
CSM_BH02
CSM_BH04
CSM_BH06
CSM_BH08
CSM_BH09S
CSM_BH10S
SRT_BH047
SRT_BH052
SRT_BH059
GASW_BH7
GASW_BH10
GASW_BH11
GASW_BH23
GASW_BH25a
Ecological criteria

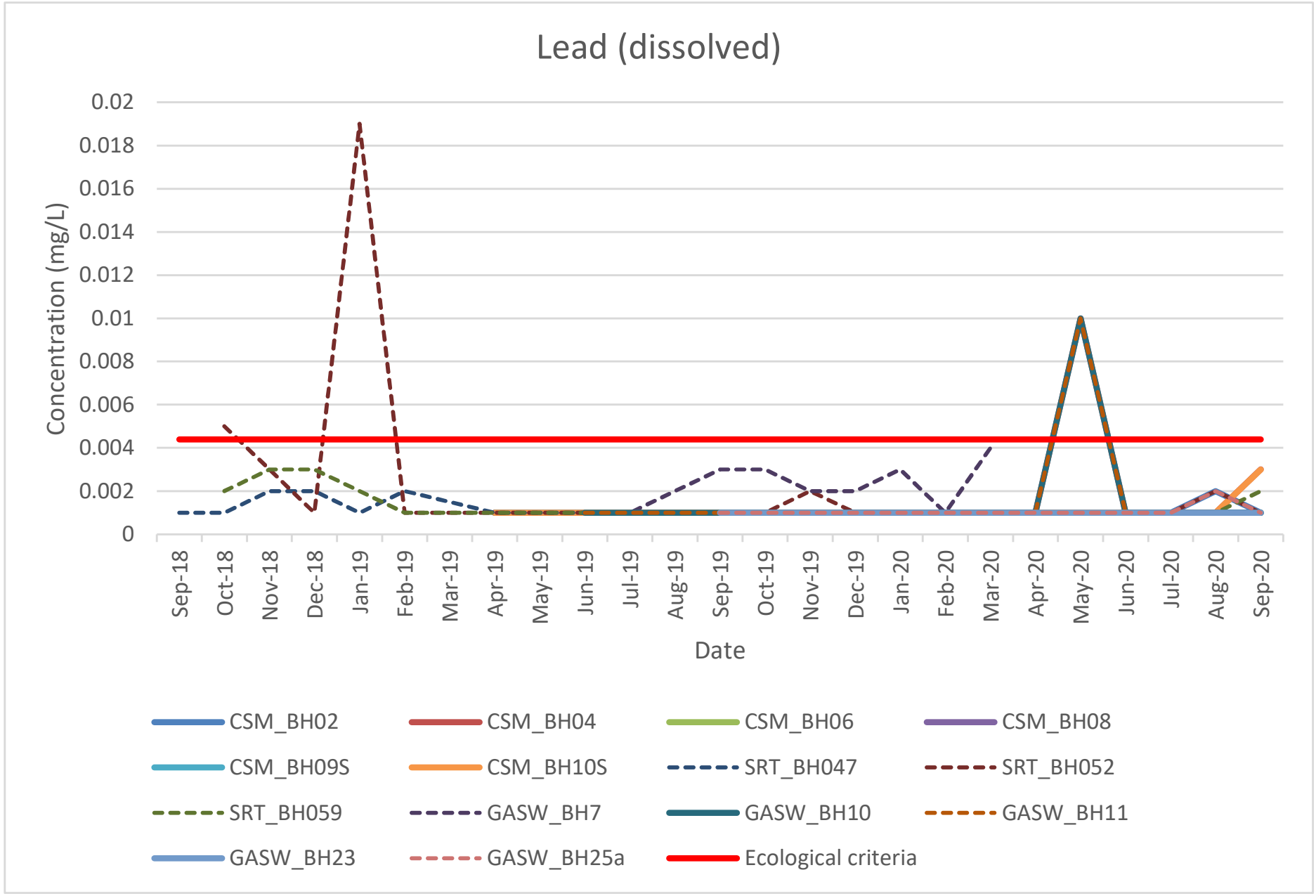

CSM_BH02 - Groundwater Levels - August 2019 to September 2020
GWL (m AHD)
Rainfall (mm)
3
2
1
0
-1
-2
-3
-4
-5
100
80
60
40
20
0
1/08/2019 0:00
20/09/2019 0:00
9/11/2019 0:00
29/12/2019 0:00
17/02/2020 0:00
7/04/2020 0:00
27/05/2020 0:00
16/07/2020 0:00
4/09/2020 0:00
GWL CSM_BH02
Manual GWL CSM_BH02
Rainfall (mm)

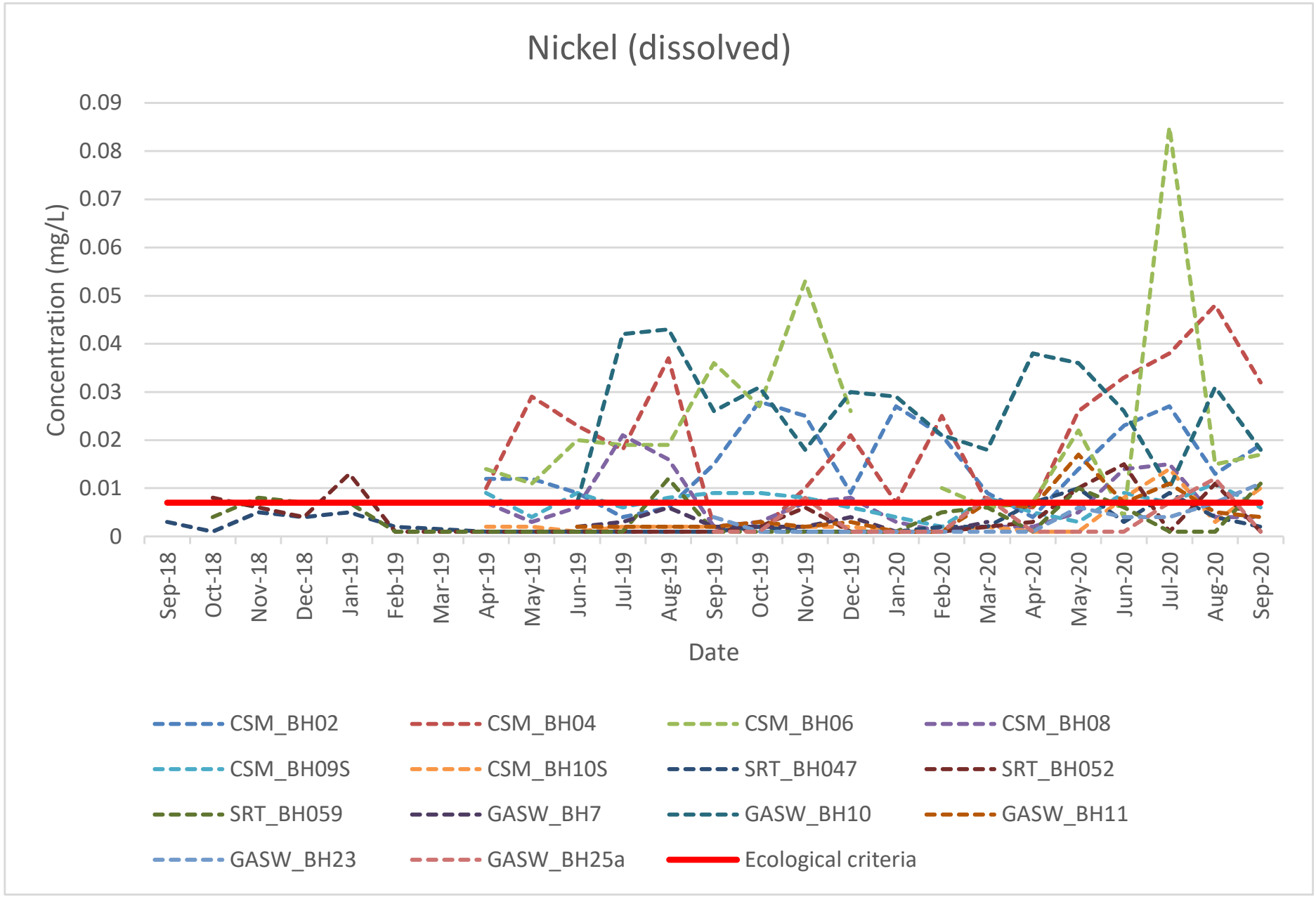

CSM_BH04 - Groundwater Levels - April 2019 to September 2020
GWL (m AHD)
0
-2
-4
-6
-8
-10
-12
Rainfall (mm)
100
80
60
40
20
0
1/04/2019 0:00
10/07/2019 0:00
18/10/2019 0:00
26/01/2020 0:00
5/05/2020 0:00
13/08/2020 0:00
GWL CSM_BH04
Manual GWL CSM_BH04
Rainfall (mm)

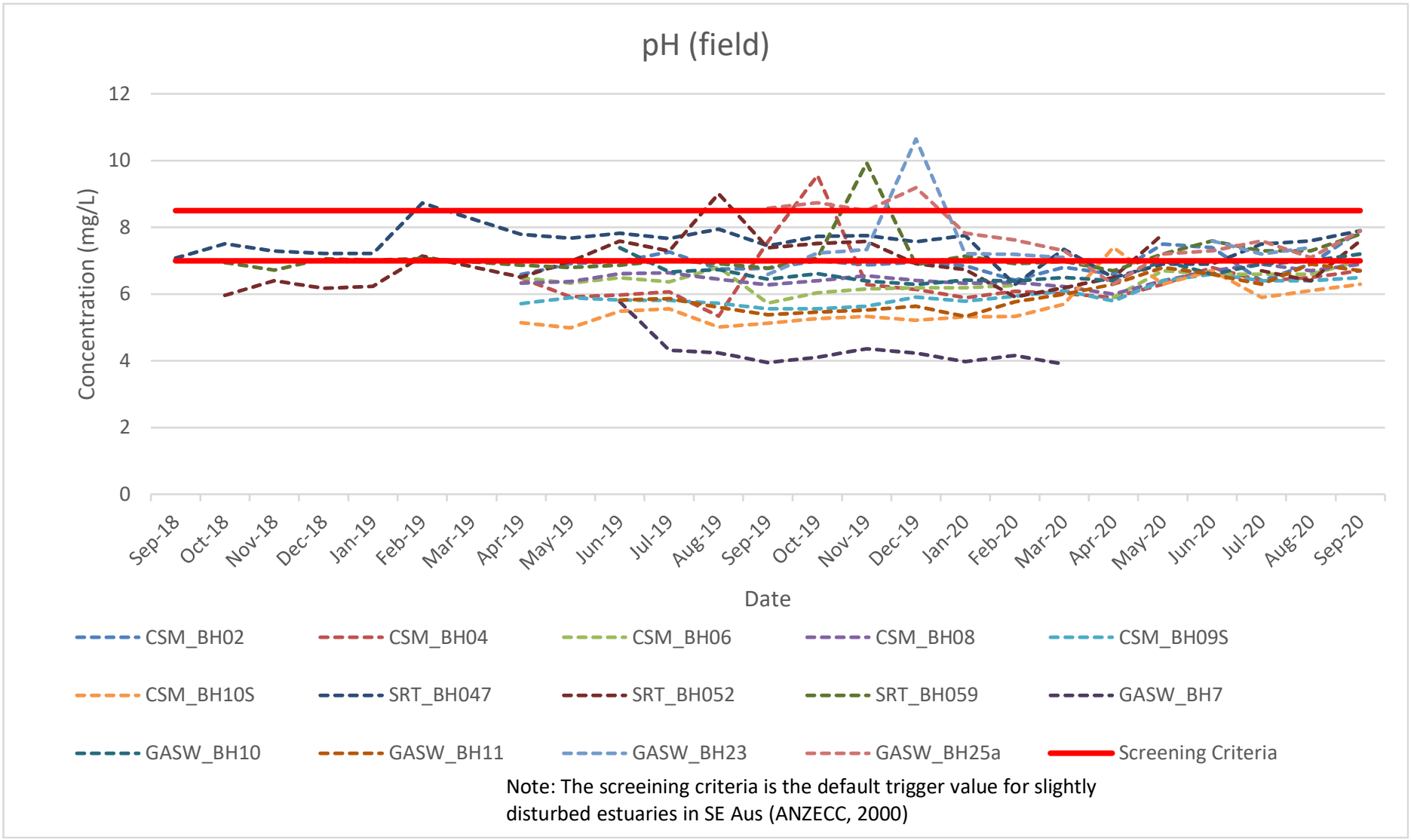

CSM_BH06 - Groundwater Levels - April 2019 to September 2020
GWL (m AHD)
Rainfall (mm)
3
2
1
0
-1
-2
-3
-4
-5
100
80
60
40
20
0
1/04/2019 0:00
10/07/2019 0:00
18/10/2019 0:00
26/01/2020 0:00
5/05/2020 0:00
13/08/2020 0:00
GWL CSM_BH06
Manual GWL CSM_BH06
Rainfall (mm)


CSM_BH10S - Groundwater Levels - January 2020 to September 2020
GWL (m AHD)
Rainfall (mm)
14
12
10
8
6
4
2
0
100
80
60
40
20
0
10/01/2020 0:00
29/02/2020 0:00
19/04/2020 0:00
8/06/2020 0:00
28/07/2020 0:00
16/09/2020 0:00
GWL CSM_BH10S
Manual GWL CSM_BH10S
Rainfall (mm)

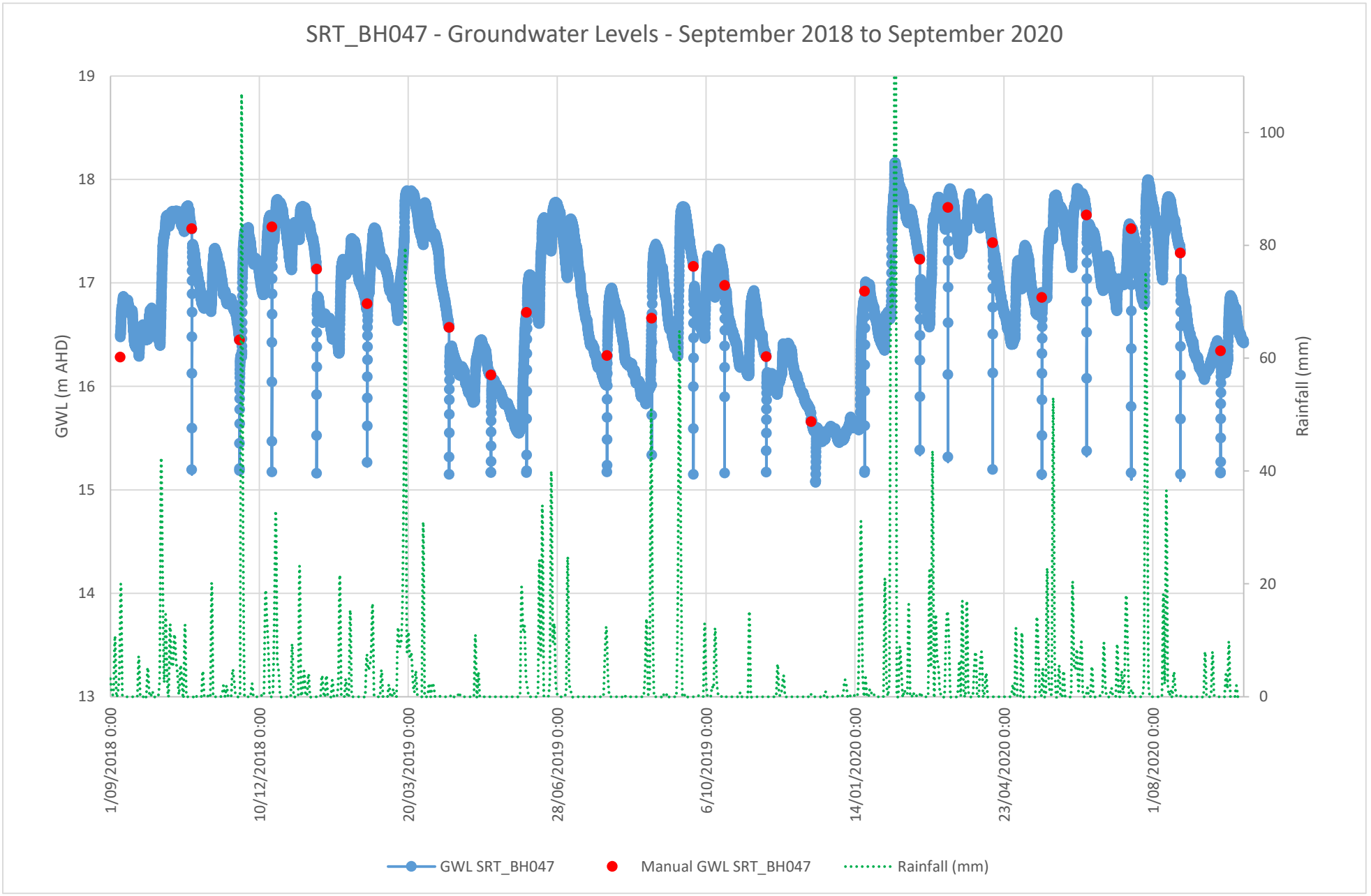

Cyanide
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
Concentration (mg/L)
Apr-19
May-19
Jun-19
Jul-19
Aug-19
Sep-19
Oct-19
Nov-19
Dec-19
Jan-20
Feb-20
Mar-20
Apr-20
May-20
Jun-20
Jul-20
Aug-20
Sep-20
date
CSM_BH02
CSM_BH04
CSM_BH06
CSM_BH08
CSM_BH10S
GASW_BH7
GASW_BH11
GASW_BH23
GASW_BH25a
Ecological criterion

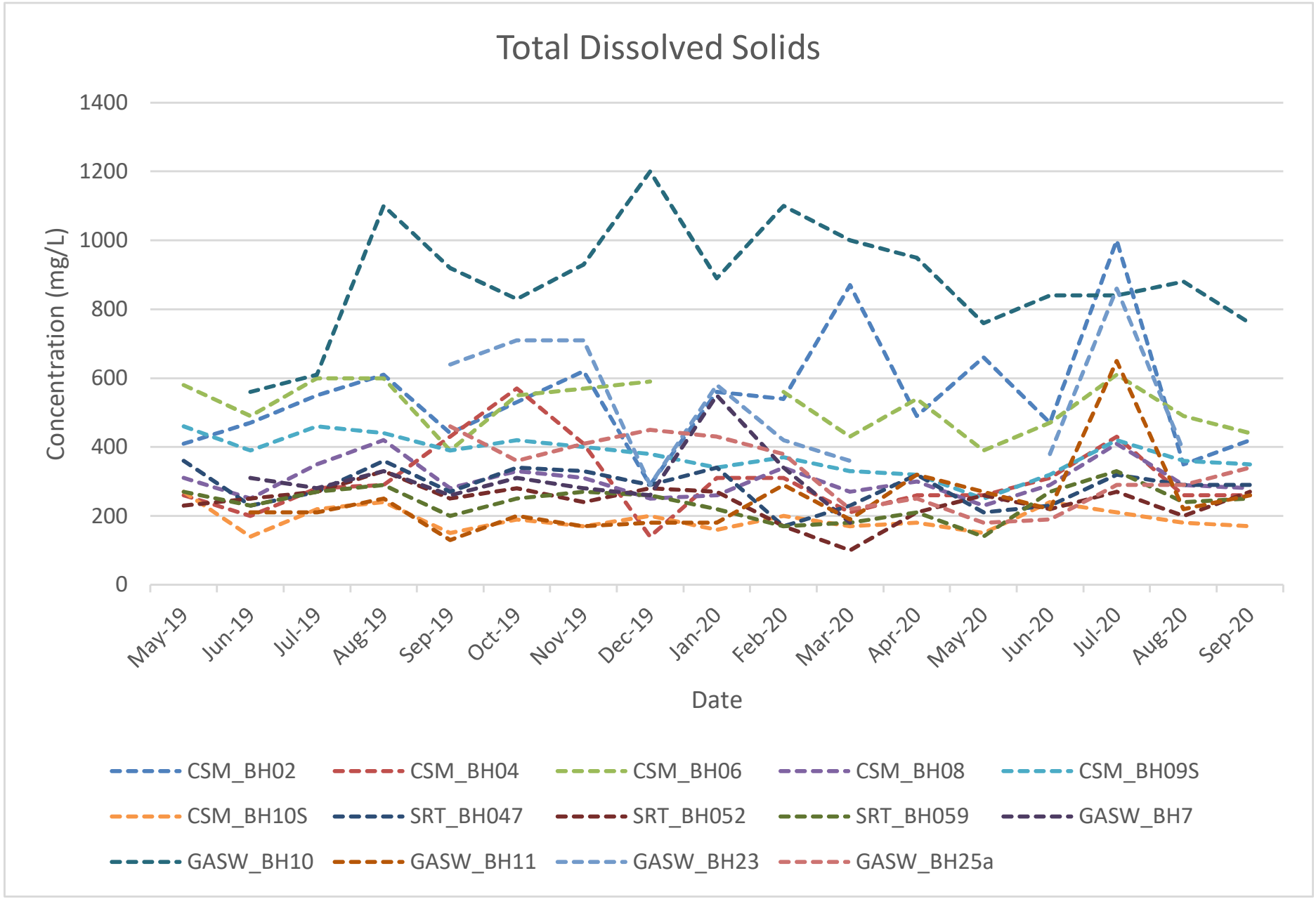

Lead (dissolved)
Concentration (mg/L)
0.02
0.018
0.016
0.014
0.012
0.01
0.008
0.006
0.004
0.002
0
Sep-18
Oct-18
Nov-18
Dec-18
Jan-19
Feb-19
Mar-19
Apr-19
May-19
Jun-19
Jul-19
Aug-19
Sep-19
Oct-19
Nov-19
Dec-19
Jan-20
Feb-20
Mar-20
Apr-20
May-20
Jun-20
Jul-20
Aug-20
Sep-20
Date
CSM_BH02
CSM_BH04
CSM_BH06
CSM_BH08
CSM_BH09S
CSM_BH10S
SRT_BH047
SRT_BH052
SRT_BH059
GASW_BH7
GASW_BH10
GASW_BH11
GASW_BH23
GASW_BH25a
Ecological criteria

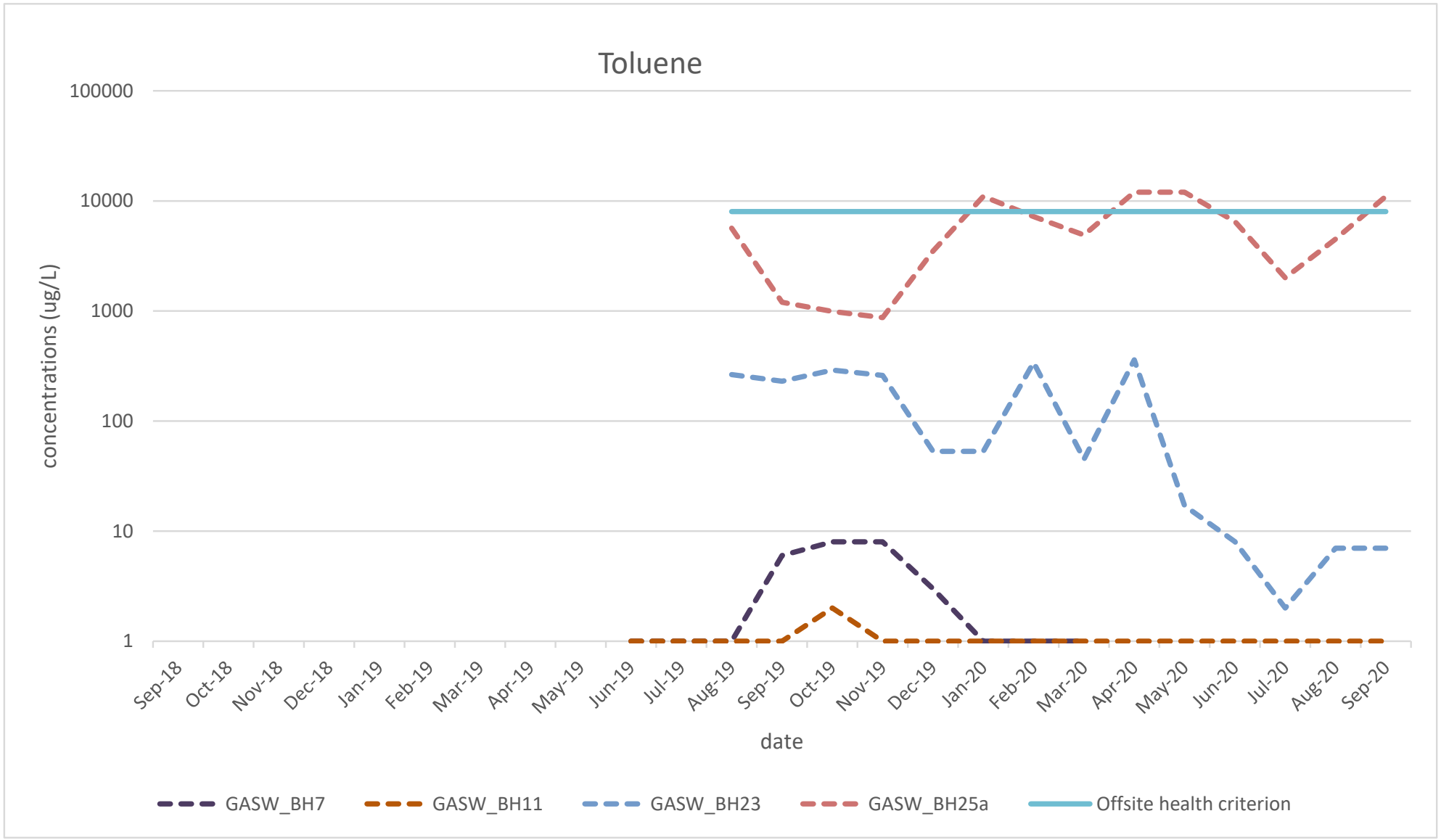

Nickel (dissolved)
Concentration (mg/L)
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
Sep-18
Oct-18
Nov-18
Dec-18
Jan-19
Feb-19
Mar-19
Apr-19
May-19
Jun-19
Jul-19
Aug-19
Sep-19
Oct-19
Nov-19
Dec-19
Jan-20
Feb-20
Mar-20
Apr-20
May-20
Jun-20
Jul-20
Aug-20
Sep-20
Date
CSM_BH02
CSM_BH04
CSM_BH06
CSM_BH08
CSM_BH09S
CSM_BH10S
SRT_BH047
SRT_BH052
SRT_BH059
GASW_BH7
GASW_BH10
GASW_BH11
GASW_BH23
GASW_BH25a
Ecological criteria

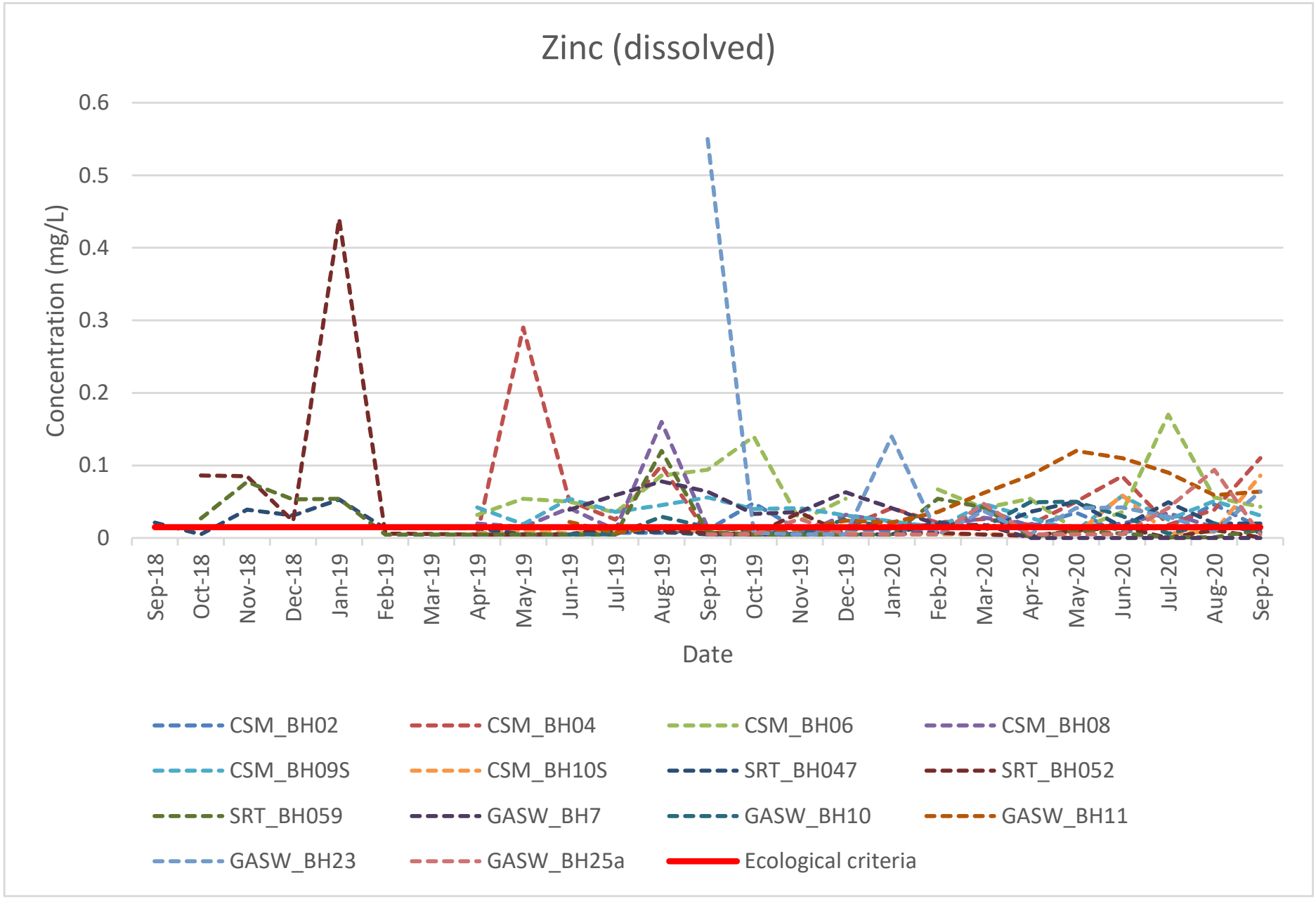


Note: The screeining criteria is the default trigger value for slightly disturbed estuaries in SE Aus (ANZECC, 2000)


SRT_BH047 - Groundwater Levels - September 2018 to September 2020
GWL (m AHD)
19
18
17
16
15
14
13
Rainfall (mm)
100
80
60
40
20
0
1/09/2018 0:00
10/12/2018 0:00
20/03/2019 0:00
28/06/2019 0:00
6/10/2019 0:00
14/01/2020 0:00
23/04/2020 0:00
1/08/2020 0:00
GWL SRT_BH047
Manual GWL SRT_BH047
Rainfall (mm)


Total Dissolved Solids
Concentration (mg/L)
1400
1200
1000
800
600
400
200
0
May-19
Jun-19
Jul-19
Aug-19
Sep-19
Oct-19
Nov-19
Dec-19
Jan-20
Feb-20
Mar-20
Apr-20
May-20
Jun-20
Jul-20
Aug-20
Sep-20
Date
CSM_BH02
CSM_BH04
CSM_BH06
CSM_BH08
CSM_BH09S
CSM_BH10S
SRT_BH047
SRT_BH052
SRT_BH059
GASW_BH7
GASW_BH10
GASW_BH11
GASW_BH23
GASW_BH25a


Toluene
100000
10000
1000
100
10
1
concentrations (ug/L)
Sep-18
Oct-18
Nov-18
Dec-18
Jan-19
Feb-19
Mar-19
Apr-19
May-19
Jun-19
Jul-19
Aug-19
Sep-19
Oct-19
Nov-19
Dec-19
Jan-20
Feb-20
Mar-20
Apr-20
May-20
Jun-20
Jul-20
Aug-20
Sep-20
date
GASW_BH7
GASW_BH11
GASW_BH23
GASW_BH25a
Offsite health criterion


Zinc (dissolved)
Concentration (mg/L)
0.6
0.5
0.4
0.3
0.2
0.1
0
Sep-18
Oct-18
Nov-18
Dec-18
Jan-19
Feb-19
Mar-19
Apr-19
May-19
Jun-19
Jul-19
Aug-19
Sep-19
Oct-19
Nov-19
Dec-19
Jan-20
Feb-20
Mar-20
Apr-20
May-20
Jun-20
Jul-20
Aug-20
Sep-20
Date
CSM_BH02
CSM_BH04
CSM_BH06
CSM_BH08
CSM_BH09S
CSM_BH10S
SRT_BH047
SRT_BH052
SRT_BH059
GASW_BH7
GASW_BH10
GASW_BH11
GASW_BH23
GASW_BH25a
Ecological criteria

Appendix E
Calibration certificates

Multi Parameter Water Meter

Instrument YSI Quatro Pro Plus
Serial No. 11K101263

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH	✓	
	2. mV	✓	
	3. EC	✓	
	4. D.O	✓	
	5. Temp	✓	
Alarms	Beeper		
	Settings		
Software	Version		
Data logger	Operation		
Download	Operation		
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Standard Solutions	Certified	Solution Bottle Number	Instrument Reading
1. pH 7.00		pH 7.00		330737	pH 6.94
2. pH 4.00		pH 4.00		347027	pH 4.13
3. pH 10.00		pH 10.00		352607	pH 9.77
4. mV		231.8mV		351758/354593	231.9mV
5. EC		2.76mS		343511	2.75mS
6. D.O		0.00ppm		1904288592	0.07ppm
7. Temp		21°C		MultiTherm	20.4°C

Calibrated by: **Sarah Lian**

Calibration date: **14/08/2020**

Next calibration due: **13/09/2020**

Oil / Water Interface Meter

Instrument **Geotech Interface Meter (60M)**
Serial No. **3963**

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Compartment	✓	
	Capacity	✓	
Probe	Cleaned/Decon.	✓	
	Operation	✓	
Connectors	Condition	✓	
		✓	
Tape Check	Cleaned	✓	
Connectors	Checked for cuts	✓	
Instrument Test	At surface level	✓	

Certificate of Calibration

This is to certify that the above instrument has been cleaned and tested.

Calibrated by: **Kylie Rawlings**

Calibration date: **13-Aug-20**

Next calibration due: **13-Oct-20**

Oil / Water Interface Meter

Instrument **Geotech Interface Meter (60m)**
Serial No. **3954**

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Compartment	✓	
	Capacity	✓	
Probe	Cleaned/Decon.	✓	
	Operation	✓	
Connectors	Condition	✓	
Tape Check	Cleaned	✓	
Connectors	Checked for cuts	✓	
Instrument Test	At surface level	✓	

Certificate of Calibration

This is to certify that the above instrument has been cleaned and tested.

Calibrated by: **Remy Tarasin**

Calibration date: **08-Apr-20**

Next calibration due: **07-Jun-20**

Multi Parameter Water Meter

Instrument YSI Quatro Pro Plus
Serial No. 13D100015

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH	✓	
	2. mV	✓	
	3. EC	✓	
	4. D.O	✓	
	5. Temp	✓	
Alarms	Beeper		
	Settings		
Software	Version		
Data logger	Operation		
Download	Operation		
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Standard Solutions	Certified	Solution Bottle Number	Instrument Reading
pH 10		pH 10.0		349209	pH 9.54
1. pH 7.00		pH 7.00		330737	pH 6.99
2. pH 4.00		pH 4.00		330734	pH 4.12
3. mV		227.4mV		338782/337308	226.5mV
4. EC		2.76mS		333787	2.76mS
5. D.O		0.00ppm		329994	0.00ppm
6. Temp		23.6°C		MultiTherm	22.7°C

Calibrated by: **Remy Tarasin**

Calibration date: **8/04/2020**

Next calibration due: **8/05/2020**

Multi Parameter Water Meter

airmet

Air-Met Scientific Pty Ltd
1300 137 067

Instrument **YSI Quatro Pro Plus**
Serial No. **10H100317**

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH	✓	
	2. mV	✓	
	3. EC	✓	
	4. D.O	✓	
	5. Temp	✓	
Alarms	Beeper		
	Settings		
Software	Version		
Data logger	Operation		
Download	Operation		
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Standard Solutions	Certified	Solution Bottle Number	Instrument Reading
1. pH 10.00		pH 10.00		338775	pH 9.92
1. pH 7.00		pH 7.00		330737	pH 7.00
2. pH 4.00		pH 4.00		330734	pH 4.05
3. mV		227.4mV		346052/342074	227.7mV
4. EC		2.76mS		333787	2.75mS
5. D.O		0.00ppm		1904288592	0.02ppm
6. Temp		22.7°C		MultiTherm	21.1°C

Calibrated by: **Eloise Carroll**

Calibration date: **14/05/2020**

Next calibration due: **13/06/2020**

Oil / Water Interface Meter

Instrument Interface Meter (60M)
Serial No. 312445

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Compartment	✓	
	Capacity	✓	
Probe	Cleaned/Decon.	✓	
	Operation	✓	
Connectors	Condition	✓	
		✓	
Tape Check	Cleaned	✓	
	Checked for cuts	✓	
Instrument Test	At surface level	✓	

Certificate of Calibration

This is to certify that the above instrument has been cleaned and tested.

Calibrated by: **Sarah Lian**

Calibration date: **15/05/2020**

Next calibration due: **14/07/2020**

Multi Parameter Water Meter

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Instrument **YSI Quatro Pro Plus**
Serial No. **18L102021**

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH	✓	
	2. mV	✓	
	3. EC	✓	
	4. D.O	✓	
	5. Temp	✓	
Alarms	Beeper		
	Settings		
Software	Version		
Data logger	Operation		
Download	Operation		
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Standard Solutions	Certified	Solution Bottle Number	Instrument Reading
1. pH 7.00		pH 7.00		330737	pH 7.01
2. pH 4.00		pH 4.00		330734	pH 4.20
3. pH 10.00		pH 10.00		352607	pH 9.55
3. mV		229.6mV		346052/342074	229.2mV
4. EC		2.76mS		333787	2.74mS
5. D.O		0.00ppm		1904288592	0.00ppm
6. Temp		22.2°C		MultiTherm	21.9°C

Calibrated by: **Eloise Carroll**

Calibration date: **12/06/2020**

Next calibration due: **12/07/2020**

Oil / Water Interface Meter

Instrument Geotech Interface Meter (60M)
Serial No. 3953

airmet
Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Compartment	✓	
	Capacity	✓	
Probe	Cleaned/Decon.	✓	
	Operation	✓	
Connectors	Condition	✓	
		✓	
Tape Check	Cleaned	✓	
Connectors	Checked for cuts	✓	
Instrument Test	At surface level	✓	

Certificate of Calibration

This is to certify that the above instrument has been cleaned and tested.

Calibrated by: **Sarah Lian**

Calibration date: **16/06/2020**

Next calibration due: **15/08/2020**

Appendix F
Groundwater purging sheets

Purging and Sampling Record

Bore ID: CSM_BH02

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 14/4/2020
- Round: April 2020

Sampling Information
- Purge Method: QED Microprge
- Sample Method: 4
- WQ Meter Type: YSI
- Flow Cell: Y / N
- Pump Depth: 24 m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge

Bore Information
- SWL: 20.365 m
- Logic Check: ✓
- Screen: From: ..... to ..... m
- Stick Up: ✓ m
- NAPL Check: ✓
- Bore Diam.: 50 mm
- Ref.datum: ✓
- Well Cap Secure? Yes
- Bore Depth: 33.235 m

Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (µS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
11:10	1	20.81	0.79	1033	6.55	77.7	21.2		Dam cloudy - no odour/sheen
11:14	2	20.96	0.47	1025	6.54	62.4	21.1		"
11:17	3	21.06	0.43	1027	6.56	62.2	21.1		"
11:20	4	21.14	0.43	1025	6.57	63.7	21.0		"
11:23	5	21.22	0.45	1025	6.58	64.8	21.0		"

Field QA Checks:
- Air bubbles in vials? Y / N
- Any violent reactions? Y / N
- Decontamination as per GHD procedure? Y / N
- Was sampling equipment pre-cleaned? Y / N
- COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottles, Metals + Fe2 filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: CSM_BH04

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 19/4/2020
- Round April 2020

Sampling Information
- Purge Method: QED Micropurge
- Sample Method: "
- WQ Meter Type: YSI
- Flow Cell: Y / N Pump Depth: 25 m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 20.970 m Logic Check: /
- Screen: From: ..... to: ..... m Stick Up: ..... m
- NAPL Check: / Bore Diam.: 50 mm
- Ref.datum: / Well Cap Secure? Yes
- Bore Depth: 33.91 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (mS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		stable	+/- 10%	+/- 3%	+/- 0.05 pH	+/- 10 mV	-		
10.10	3	21.35	0.30	478.4	5.72	45.2	21.7		light brown, turbid, no sheen/odour
10.13	4	21.35	0.28	480.3	5.72	42.7	21.7		SWL stable
10.16	5	21.34	0.22	485.6	5.74	437.7	21.7		
10.19	6	21.35	0.21	489.0	5.75	34.6	21.7		
10.22	7	21.34	0.21	492.1	5.79	31.1	21.7		Sampled

Field QA Checks:
- Air bubbles in vials? Y / N Any violent reactions? Y / N
- Decontamination as per GHD procedure? Y / N
- Was sampling equipment pre-cleaned? Y / N
- COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottles, Metals + Fe2+ filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: CSM_BH06

Job Information

Client: Laing O'Rouke / Sydney Metro
Project: Central Station Main Works
Proj. No.: 21-27234
Sampler: T. Nham / J. Vickers
Date: 14/4/2020
Round April 2020

Sampling Information

Purge Method: QED Micropurge
Sample Method:
WQ Meter Type: YSI
Flow Cell: Y / N
Pump Depth: 18M 25 m
WLevel Meter Type: Dip / Fox / Int.Fce / Gge
Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information

SWL: 20.830 m
Screen: From: / to: m
NAPL Check:
Ref.datum:
Bore Depth: 35.40 m
Logic Check: ✓
Stick Up: ✓ m
Bore Diam.: 50 mm
Well Cap Secure? Yes

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (.....)	Elec.Cond (µS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		stable	+/- 10%	+/- 3%	+/- 0.05 pH	+/- 10 mV	-		
9:06	1	20.85	0.45	952	6.25	14.2	22.5		Cloudy, no odour/sheen
9:11	2	20.88	0.32	954	6.30	9.6	22.5		"
9:14	3	20.88	0.30	955	6.30	7.5	22.6		"
9:17	4	20.88	0.27	956	6.28	8.4	22.6		"
9:20	5	20.88	0.27	957	6.26	7.7	22.6		

Field QA Checks:

Air bubbles in vials? Y / N Any violent reactions? Y / N
Decontamination as per GHD procedure? Y / N
Was sampling equipment pre-cleaned? Y / N
COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

DUP = QC01 9+5 bottles, Metals+EO4 filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: CSM_BH08

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 14/4/2020
- Round April 2020

Sampling Information
- Purge Method: QED Micropurge
- Sample Method: "
- WQ Meter Type: YSI
- Flow Cell: Y / N — Pump Depth: 25 m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 13.805 m — Logic Check: /
- Screen: From: ..... to ..... m — Stick Up: / m
- NAPL Check: / — Bore Diam.: 50 mm
- Ref.datum: / — Well Cap Secure? Yes
- Bore Depth: 34.98 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (uS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		stable	+/- 10%	+/- 3%	+/- 0.05 pH	+/- 10 mV	-		
8:07	1	13.81	1.39	540	7.49	-20.1	20.5		Grey cloudy no odour/sheen
8.07	2	13.81	0.50	540	6.95	-22.5	21.0		SWL "stable
8.10	3	13.81	0.44	540	6.74	-23.9	21.0		
8:13	4	13.81	0.41	537	6.67	-24.5	21.0		
8.16	5	13.81	0.44	533	6.58	-24.3	21.0		
8.19	6	13.81	0.50	521	6.53	-23.0	21.0		
8.22	7	13.81	0.48	520	6.51	-22.6	21.0		
8.25	8	13.81	0.46	520	6.50	-22.4	21.0		sampled

Field QA Checks:
- Air bubbles in vials? Y / (N) Any violent reactions? Y / (N)
- Decontamination as per GHD procedure? (Y) / N
- Was sampling equipment pre-cleaned? (Y) / N
- COC updated? Y / (N)

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottles, Metals + Fe^{2} filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: CSMBH095

Job Information
- Client: Laing O'Rouke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 16/4/2020
- Round April 2020

Sampling Information
- Purge Method: Peri
- Sample Method: Peri
- WQ Meter Type: YSI
- Flow Cell: Y / N Pump Depth: 6 m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 4.830 m Logic Check: ✓
- Screen: From: ..... to ..... m Stick Up: ✓ m
- NAPL Check: ✓ Bore Diam.: 50 mm
- Ref.datum: ..... Well Cap Secure? Yes
- Bore Depth: 6.59 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (µS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
9:14	1	4.99	1.78	610	6.64	-6.2	20.6		Drum, no odour/sheen
9:17	2	5.05	0.89	610	6.45	-5.1	20.5		"
9:20	3	5.11	0.43	598	6.30	-1.4	20.5		"
9:23	4	5.18	0.26	586	6.19	1.6	20.5		"
9:26	5	5.23	0.22	575	6.14	1.0	20.4		"
9:29	6	5.24	0.21	571	6.18	2.5	20.5		Sampled

Field QA Checks:
- Air bubbles in vials? Y / N Any violent reactions? Y / N
- Decontamination as per GHD procedure? Y / N
- Was sampling equipment pre-cleaned? Y / N
- COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottles, Metals + Fe2+ filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: CSM_BH105

Job Information

Client: Laing O'Rourke / Sydney Metro
Project: Central Station Main Works
Proj. No.: 21-27234
Sampler: T. Nham / J. Vickers
Date: 15/4/2020
Round April 2020

Sampling Information

Purge Method: Peri
Sample Method: Peri
WQ Meter Type: YSI
Flow Cell: Y / N Pump Depth: 9 m
WLevel Meter Type: Dip / Fox / Int.Fce / Gge
Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information

SWL: 4.040 m Logic Check: /
Screen: From: ..... to ..... m Stick Up: ..... m
NAPL Check: / Bore Diam.: 50 mm
Ref.datum: / Well Cap Secure? Yes
Bore Depth: 9.91 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (µS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
8:07	1	4.29	1.88	308.5	6.86	126.3	21.4		Brown cloudy, no odour/sheen
8:07	2	4.34	0.67	293.0	6.46	136.9	21.4		"
8:11	3	4.41	0.37	288.1	6.21	144.4	21.5		"
8:15	4	4.48	0.32	288.2	6.16	148.3	21.5		"
8:19	5	4.50	0.29	283.6	6.06	151.3	21.5		"
8:23	6	4.54	0.28	281.1	6.00	155.7	21.5		"

Field QA Checks:

Air bubbles in vials? Y / N Any violent reactions? Y / N
Decontamination as per GHD procedure? Y / N
Was sampling equipment pre-cleaned? Y / N
COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

DUP = QC02 9+5 bottles, Metal+Fe+ filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: SRT_BH047

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 15/4/2020
- Round April 2020

Sampling Information
- Purge Method: Peri
- Sample Method: Peri
- WQ Meter Type: YSI
- Flow Cell: Y / N Pump Depth: 6.8 m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 3.92 m Logic Check: /
- Screen: From: / to: m Stick Up: m
- NAPL Check: / Bore Diam.: 50 mm
- Ref.datum: Well Cap Secure? Y
- Bore Depth: 6.95 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (mS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
9.49	0.5	4.31	2.92	436.3	6.95	141.7	20.8		grey, slightly turbid, no odour/ sheen
9.53	1	4.54	2.13	439.4	6.99	135.0	20.8		
9.56	1.5	4.88	1.98	434.5	7.07	132.0	20.9		
9.59	2.0	5.13	2.02	431.3	7.10	129.9	20.9		stable, sampled

Field QA Checks:
- Air bubbles in vials? Y / N Any violent reactions? Y / N
- Decontamination as per GHD procedure? Y / N
- Was sampling equipment pre-cleaned? Y / N
- COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottles, Metal + Fe + filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: SRT_BH050

Job Information

Client: Laing O'Rourke / Sydney Metro
Project: Central Station Main Works
Proj. No.: 21-27234
Sampler: T. Nham / J. Vickers
Date: 15/9/2020
Round April 2020

Sampling Information

Purge Method: Peri
Sample Method: Peri
WQ Meter Type: YSI
Flow Cell: Y / N Pump Depth: 2.7 m
WLevel Meter Type: Dip / Fox / Int.Fce / Gge
Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information

SWL: 2.400 m Logic Check: /
Screen: From: / to: m Stick Up: / m
NAPL Check: / Bore Diam.: 50 mm
Ref.datum: / Well Cap Secure? Yes
Bore Depth: 2.76 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (.....)	Elec.Cond (.....)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
	Very little water, no purge done, grab sample taken								

Field QA Checks:

Air bubbles in vials? Y / N Any violent reactions? Y / N
Decontamination as per GHD procedure? Y / N
Was sampling equipment pre-cleaned? Y / N
COC updated? Y / N

Parameters / Preservatives	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottles, Metals + Cr VI filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: SRC_DH052

Job Information

Client: Laing O'Rourke / Sydney Metro
Project: Central Station Main Works
Proj. No.: 21-27234
Sampler: T. Nham / J. Vickers
Date: 15/4/2020
Round April 2020

Sampling Information

Purge Method: Peri
Sample Method: Peri
WQ Meter Type: YSI
Flow Cell: Y / N Pump Depth: 7.8 m
WLevel Meter Type: Dip / Fox / Int.Fce / Gge
Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information

SWL: 5.990 m Logic Check: /
Screen: From: /.. to ..... m Stick Up: ..... m
NAPL Check: / Bore Diam.: 50 mm
Ref.datum: ..... Well Cap Secure? Yes
Bore Depth: 7.92 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (µS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
9:13	1	6.28	4.81	308.9	6.42	145.7	20.7		Cloudy, no odour/sheen
9:16	2	6.45	5.35	297.1	6.33	148.4	20.7		"
9:19	3	6.58	5.62	282.0	6.26	151.3	20.7		"
9:22	4	6.72	5.80	265.9	6.13	155.8	20.7		"
9:26	5	6.94	5.84	263.6	5.99	162.6	20.7		"

Field QA Checks:

Air bubbles in vials? Y / N Any violent reactions? Y / N
Decontamination as per GHD procedure? Y / N
Was sampling equipment pre-cleaned? Y / N
COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottles, Metals + Fe2+ filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: SRT_BH059

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 15/4/2020
- Round April 2020

Sampling Information
- Purge Method: Peri
- Sample Method: Peri
- WQ Meter Type: YSI
- Flow Cell: Y / N Pump Depth: 5.8 m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 3.14 m Logic Check: /
- Screen: From: ..... to ..... m Stick Up: ..... m
- NAPL Check: / Bore Diam.: 50 mm
- Ref.datum: / Well Cap Secure? Yes
- Bore Depth: 6.00 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (mS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
11:25	1	3.41	2.97	344.1	7.05	137.3	21.4		Dam cloudy, no odour/sheen
11:28	2	3.52	2.58	343.1	6.89	138.2	21.4		"
11:31	3	3.68	2.27	341.5	6.90	138.9	21.4		"
11:34	4	3.86	2.11	341.4	6.89	139.1	21.5		"
11:37	5	4.01	2.10	341.5	6.87	137.2	21.6		"

Field QA Checks:
- Air bubbles in vials? Y / (N) Any violent reactions? Y / (N)
- Decontamination as per GHD procedure? (Y) / N
- Was sampling equipment pre-cleaned? (Y) / N
- COC updated? (Y) / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottles, Metal + 60ml filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: SRT_BH060

Job Information

Client: Laing O'Rourke / Sydney Metro
Project: Central Station Main Works
Proj. No.: 21-27234
Sampler: T. Nham / J. Vickers
Date: 15/4/2020
Round April 2020

Sampling Information

Purge Method: Peri
Sample Method: Peri
WQ Meter Type: YSI
Flow Cell: Y / N Pump Depth: 4.2 m
WLevel Meter Type: Dip / Fox / Int.Fce / Gge
Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information

SWL: 3.98 m Logic Check: /
Screen: From: / to: / m Stick Up: / m
NAPL Check: / Bore Diam.: 50 mm
Ref.datum: / Well Cap Secure? Yes
Bore Depth: 4.28 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (.....)	Elec.Cond (.....)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
	Very little water,								Soil sample taken

Field QA Checks:

Air bubbles in vials? Y / N Any violent reactions? Y / N
Decontamination as per GHD procedure? Y / N
Was sampling equipment pre-cleaned? Y / N
COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

8 bottles, Metals + Field filtered.
1x TRH bottle, TRH + Btex unpreserved not full due to limited water.

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: GASMBH7

Job Information	Sampling Information	Bore Information
Client: Laing O'Rouke / Sydney Metro	Purge Method:	SWL: DRY m — Logic Check:
Project: Central Station Main Works	Sample Method:	Screen: From: to: m — Stick Up: m
Proj. No.: 21-27234	WQ Meter Type: YSI	NAPL Check: — Bore Diam.: 50 mm
Sampler: T. Nham / J. Vickers	Flow Cell: Y / N — Pump Depth: m	Ref.datum: — Well Cap Secure? Yes
Date: 15/4/2020	WLevel Meter Type: Dip / Fox / Int.Fce / Gge	Bore Depth: 6.180 m
Round April 2020	Field Filtered? Y / N (filter vessel, disposable filter/syringe)	

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (.....)	Elec.Cond (.....)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
	DRY								

Field QA Checks:

Air bubbles in vials? Y / N Any violent reactions? Y / N
Decontamination as per GHD procedure? Y / N
Was sampling equipment pre-cleaned? Y / N
COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

DRY

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: GWL_BH10

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 14/4/2020
- Round April 2020

Sampling Information
- Purge Method: QED Micropurge
- Sample Method: "
- WQ Meter Type: YSI
- Flow Cell: Y / N
- Pump Depth: 22.22 m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 19.420 m
- Logic Check: /
- Screen: From: / to m
- Stick Up: / m
- NAPL Check: /
- Bore Diam.: 50 mm
- Ref.datum:
- Well Cap Secure? Yes
- Bore Depth: 25.00 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (µS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
12:32	1	20.25	1.64	1423	6.31	-57.3	21.7		Grey cloudy, organic odour / no sheen
12:35	2	20.54	1.07	1402	6.25	-58.5	21.7		"
12:38	3	20.90	0.51	1412	6.20	-59.6	21.5		"
12:41	4	21.27	0.33	1409	6.17	-56.8	21.5		"

Field QA Checks:
- Air bubbles in vials? Y / N Any violent reactions? Y / N
- Decontamination as per GHD procedure? Y / N
- Was sampling equipment pre-cleaned? Y / N
- COC updated? Y / N

Parameters / Preservatives	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottles, Metals + Feat filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: GNSW BH11

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 16/4/2020
- Round April 2020

Sampling Information
- Purge Method: Peri
- Sample Method: Peri
- WQ Meter Type: YSI
- Flow Cell: Y / N
- Pump Depth: 8 m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 7.090 m
- Screen: From: ..... to ..... m
- NAPL Check: /
- Ref.datum: /
- Bore Depth: 8.040 m
- Logic Check: /
- Stick Up: ..... m
- Bore Diam.: 50 mm
- Well Cap Secure? Yes

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (µS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
9.53	0.5	7.28	0.51	520	6.51	-42.2	21.3		Dark grey, silty, HC odour
9.56	1	7.34	0.42	437.3	6.39	-6.1	21.3		"
9.58	1.5	7.80	@1.00	362.7	6.32	21.8	21.3		SWL dropping fast, slow recharge + insufficient water for low flow. Sampled

Field QA Checks:
- Air bubbles in vials? Y / N Any violent reactions? Y / N
- Decontamination as per GHD procedure? Y / N
- Was sampling equipment pre-cleaned? Y / N
- COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottles, Metals + Fe 2+ filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: GASW-BH23

Job Information
- Client: Laing O'Rouke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 16/4/20
- Round April 2020

Sampling Information
- Purge Method: Peri
- Sample Method: Peri
- WQ Meter Type: YSI
- Flow Cell: Y / N
- Pump Depth: 3.9 m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 3.605 m
- Logic Check: /
- Screen: From: ..... to ..... m
- Stick Up: / m
- NAPL Check: /
- Bore Diam.: 50 mm
- Ref.datum: /
- Well Cap Secure? X
- Bore Depth: 3.91 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (uS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
1050	0.5	3.72	1.78	492.4	7.48	-110.8	23.7		Grey, sediment, strong NC odour / sheen
		Very little water, sample taken							

Field QA Checks:
- Air bubbles in vials? Y (N) Any violent reactions? Y / (N)
- Decontamination as per GHD procedure? (Y) / N
- Was sampling equipment pre-cleaned? (Y) / N
- COC updated? (Y) / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

7 bottles, Metal + Fe (F) filtered — 1x TRH No preservative plastic

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: GASW_BH25A

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 16/4/2020
- Round April 2020

Sampling Information
- Purge Method: Peri
- Sample Method: Peri
- WQ Meter Type: YSI
- Flow Cell: Y / N Pump Depth: 2.9 m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 2.015 m Logic Check: .....
- Screen: From:.....to..... m Stick Up: ..... m
- NAPL Check:..... Bore Diam.: 50 mm
- Ref.datum: ..... Well Cap Secure?....Y.....
- Bore Depth: 2.94 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (µS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		stable	+/- 10%	+/- 3%	+/- 0.05 pH	+/- 10 mV	-		
10:21	1	2.48	0.50	331.6	7.45	+145.7	22.3		Grey cloudy, NK odour, no sheen
10.25	2	2.61	0.15	367.5	7.43	-173.1	22.4		
10.28	~~2.5~~	2.61	0.13	378.6	7.40	-173.6	22.6		Slowed pump rate.

Field QA Checks:
- Air bubbles in vials? Y / N Any violent reactions? Y / N
- Decontamination as per GHD procedure? Y / N
- Was sampling equipment pre-cleaned? Y / N
- COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottles, Metals (Fe) filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: CSM_BH02

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 19/5/2020
- Round May 2020

Sampling Information
- Purge Method: QED Micropurge
- Sample Method: "
- WQ Meter Type: YSI
- Flow Cell: Y / N — Pump Depth: 24 m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 20.165 m — Logic Check: /
- Screen: From: ..... to ..... m — Stick Up: ..... m
- NAPL Check: / — Bore Diam.: 50 mm
- Ref.datum: / — Well Cap Secure? Yes
- Bore Depth: 33.245 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (µS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
10:05	1	20.62	0.41	994	6.66	126.0	20.3		Dam clouds, no odour/sheen
10:09	2	20.87	0.25	999	6.44	126.8	20.4		"
10:12	3	21.03	0.20	999	6.75	124.0	20.4		"
10:15	4	21.17	0.22	998	6.77	120.7	20.4		"
10:18	5	21.31	0.17	996	6.78	116.1	20.3		"

Field QA Checks:
- Air bubbles in vials? Y / N — Any violent reactions? Y / N
- Decontamination as per GHD procedure? Y / N
- Was sampling equipment pre-cleaned? Y / N
- COC updated? Y / N

Parameters / Preservatives	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottles, Metals + Fe2+ filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: CSM_BH04

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 19/5/2020
- Round May 2020

Sampling Information
- Purge Method: QED Micropurge
- Sample Method: "
- WQ Meter Type: YSI
- Flow Cell: Y / N Pump Depth: 24 m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 21.042 m Logic Check: /
- Screen: From: / to: m Stick Up: / m
- NAPL Check: / Bore Diam.: 50 mm
- Ref.datum: / Well Cap Secure?
- Bore Depth: 33.94 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (µs/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
9:15	1	21.31	0.60	451.7	6.34	122.2	20.9		Cloudy brown / moderate flow
9:18	2	21.38	0.38	455.8	6.03	124.3	21.0		"
9:21	3	21.41	0.36	459.1	6.01	125.3	21.0		"
9:24	4	21.42	0.28	461.1	6.03	125.6	21.1		"
9:27	5	21.45	0.23	466.0	6.03	125.7	21.1		"

Field QA Checks:
Air bubbles in vials? Y / N Any violent reactions? Y / N
Decontamination as per GHD procedure? Y / N
Was sampling equipment pre-cleaned? Y / N
COC updated? Y / N

Parameters / Preservatives	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottles, metals + ice + flood

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: CSM_BH06

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 19/5/2020
- Round May 2020

Sampling Information
- Purge Method: QED Megapy
- Sample Method: 4
- WQ Meter Type: YSI
- Flow Cell: Y / N
- Pump Depth: 24 m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 20.630 m
- Screen: From: ..... to ..... m
- NAPL Check: .....
- Ref.datum: .....
- Bore Depth: 25.65 m
- Logic Check: /
- Stick Up: / m
- Bore Diam.: 50 mm
- Well Cap Secure? Yes

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (uS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
10.01	3	20.68	0.16	929	6.26	71.9	22.5		slightly cloudy, clear, no sheen/odour
10.04	4	20.69	0.13	927	6.25	68.1	22.6		" good recharge
10.08	5	20.68	0.11	924	6.25	62.9	22.3		"
10.11	6	20.68	0.11	926	6.24	61.6	22.4		stable, sampled

Field QA Checks:
- Air bubbles in vials? Y / N Any violent reactions? Y / N
- Decontamination as per GHD procedure? Y / N
- Was sampling equipment pre-cleaned? Y / N
- COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottle, Metals + Ford filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

GHD MANAGEMENT ENGINEERING ENVIRONMENT

Purging and Sampling Record

Bore ID: CSM_BH08

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 18/5/20
- Round May 2020

Sampling Information
- Purge Method: QED Micropurge
- Sample Method: "
- WQ Meter Type: YSI
- Flow Cell: Y / N
- Pump Depth: 20 m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge

Bore Information
- SWL: 13.640 m
- Screen: From: / to: m
- NAPL Check:
- Ref.datum:
- Bore Depth: 35.38 m
- Logic Check: /
- Stick Up: / m
- Bore Diam.: 50 mm
- Well Cap Secure? Yes

Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (%.....)	Elec.Cond (.....)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
8:01	1	13.65	0.48	499.1	7.14	-67.8	20.8		Clear, no odour/sheen
8:05	2	13.62	0.28	503	6.72	-68.5	20.8		"
8:08	3	13.65	0.17	503	6.58	-69.5	20.8		"
8:11	4	13.65	0.16	502	6.48	-69.4	20.8		"
8:14	5	13.66	0.15	501	6.49	-67.7	20.8		"
8:17	6	13.67	0.18	500	6.42	-65.2	20.8		"

Field QA Checks:
- Air bubbles in vials? Y / N Any violent reactions? Y / N
- Decontamination as per GHD procedure? Y / N
- Was sampling equipment pre-cleaned? Y / N
- COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9+9 bottles, Metal+Rad DUP=RC01

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: CSM-BH09S

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 20/5/2020
- Round May 2020

Sampling Information
- Purge Method: Peri
- Sample Method: Peri
- WQ Meter Type: YSI
- Flow Cell: Y / N Pump Depth: 6.5 m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 5.046 m Logic Check: /
- Screen: From: ..... to ..... m Stick Up: ..... m
- NAPL Check: / Bore Diam.: 50 mm
- Ref.datum: / Well Cap Secure? Y/N
- Bore Depth: 6.61 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (µS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		stable	+/- 10%	+/- 3%	+/- 0.05 pH	+/- 10 mV	-		
9:28	1	5.26	0.44	604	6.05	98.6	19.9		Brown cloudy, no odour/sheen
9:32	2	5.33	0.36	576	5.90	97.3	20.1		"
9:36	3	5.44	0.23	560	5.87	99.6	20.0		"
9:40	4	5.48	0.17	558	5.86	100.5	20.0		"
9:44	5	5.54	0.13	553	5.85	102.0	20.1		"
9:48	6	5.58	0.12	547	5.86	102.6	20.1		"

Field QA Checks:
Air bubbles in vials? Y / N Any violent reactions? Y / N
Decontamination as per GHD procedure? Y / N
Was sampling equipment pre-cleaned? Y / N
COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottles, Metals + Fe2 filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

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Bore ID: CSM_DH0923

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 18/5/20
- Round May 2020

Sampling Information
- Purge Method: Pot
- Sample Method: Bail
- WQ Meter Type: YSI
- Flow Cell: Y / N Pump Depth: 8.0 m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 4.270 m Logic Check: /
- Screen: From: ..... to ..... m Stick Up: / m
- NAPL Check: ..... Bore Diam.: 50 mm
- Ref.datum: ..... Well Cap Secure? Yes
- Bore Depth: 9.865 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (uS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		stable	+/- 10%	+/- 3%	+/- 0.05 pH	+/- 10 mV	-		
12:01	1	4.45	0.32	308.7	6.10	115.9	21.4		cloudy brown, no odour/sheen
12:04	2	4.50	0.32	302.1	5.97	120.8	21.5		"
12:08	3	4.56	0.29	298.1	5.91	123.4	21.6		"
12:12	4	4.59	0.25	295.5	5.87	124.8	21.5		"
12:16	5	4.61	0.21	292.4	5.85	125.1	21.5		"

Field QA Checks:
- Air bubbles in vials? Y / N Any violent reactions? Y / N
- Decontamination as per GHD procedure? Y / N
- Was sampling equipment pre-cleaned? Y / N
- COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9+5 bottles, metals filtered after DUP=QC02

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: GASW_BH7

Job Information

Client: Laing O'Rourke / Sydney Metro
Project: Central Station Main Works
Proj. No.: 21-27234
Sampler: T. Nham / J. Vickers
Date: 22/5/2020
Round May 2020

Sampling Information

Purge Method:
Sample Method:
WQ Meter Type: YSI
Flow Cell: Y / N Pump Depth:.....m
WLevel Meter Type: Dip / Fox / Int.Fce / Gge
Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information

SWL: DRY m
Screen: From:.....to..... m
NAPL Check:.....
Ref.datum: .....
Bore Depth: 6.20 m
Logic Check: .....
Stick Up: ..... m
Bore Diam.: 50 mm
Well Cap Secure? Yes

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (.....)	Elec.Cond (.....)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
	DRY								

Field QA Checks:

Air bubbles in vials? Y / N Any violent reactions? Y / N
Decontamination as per GHD procedure? Y / N
Was sampling equipment pre-cleaned? Y / N
COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: GASW_BH10

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 19/5/20
- Round: May 2020

Sampling Information
- Purge Method: QED Micropurge
- Sample Method: "
- WQ Meter Type: YSI
- Flow Cell: Y / N — Pump Depth: 24 m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 19.305 m
- Screen: From: ..... to ..... m
- NAPL Check: .....
- Ref.datum: .....
- Bore Depth: 25.20 m
- Logic Check: .....
- Stick Up: ..... m
- Bore Diam.: 50 mm
- Well Cap Secure? Yes

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (uS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
10:54	1	20.16	0.43	1418	6.38	98.7	20.6		Cloudy/ DNAPL, slight odour/sheen
10:57	2	20.71	0.26	1418	6.31	102.7	20.6		"
11:00	3	21.28	0.18	1418	6.29	99.0	20.6		"
11:03	4	21.69	0.20	1417	6.29	91.5	20.6		"
11:07	5	22.50	0.22	1417	6.30	89.6	20.5		"

Field QA Checks:
- Air bubbles in vials? Y / N — Any violent reactions? Y / N
- Decontamination as per GHD procedure? Y / N
- Was sampling equipment pre-cleaned? Y / N
- COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottles, Metals + Fe2+ filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: GASW_BH11

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 22/5/2020
- Round: May 2020

Sampling Information
- Purge Method: Peri
- Sample Method: Peri
- WQ Meter Type: YSI
- Flow Cell: Y / N
- Pump Depth: 8 m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 7.120 m
- Screen: From: ..... to ..... m
- NAPL Check: /
- Ref.datum: /
- Bore Depth: 8.06 m
- Logic Check: /
- Stick Up: / m
- Bore Diam.: 50 mm
- Well Cap Secure? Ye

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (uS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		stable	+/- 10%	+/- 3%	+/- 0.05 pH	+/- 10 mV	-		
10:36	1	7.44	2.34	347.3	5.86	99.0	20.2		Dam clarity, no odour/sheen
11:40	2	7.74	1.75	340.8	5.72	104.3	20.2		"
		Very slow recharge, sample taken							

Field QA Checks:
- Air bubbles in vials? Y / N Any violent reactions? Y / N
- Decontamination as per GHD procedure? Y / N
- Was sampling equipment pre-cleaned? Y / N
- COC updated? Y / N

Parameters / Preservatives	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottles, Metals + field filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: GASV-BH23

Job Information

Client: Laing O'Rourke / Sydney Metro
Project: Central Station Main Works
Proj. No.: 21-27234
Sampler: T. Nham / J. Vickers
Date: 20/5/2020
Round May 2020

Sampling Information

Purge Method:
Sample Method: Peri
WQ Meter Type: YSI
Flow Cell: Y / N Pump Depth: 3.5 m
WLevel Meter Type: Dip / Fox / Int.Fce / Gge
Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information

SWL: 3.651 m
Screen: From: ..... to ..... m
NAPL Check: .....
Ref.datum: .....
Bore Depth: 3.94 m
Logic Check: /
Stick Up: / m
Bore Diam.: 50 mm
Well Cap Secure? Yes

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (.....)	Elec.Cond (.....)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
	Very little water sample taken								Grey cloudy, HC odour, no sheen

Field QA Checks:

Air bubbles in vials? Y / N Any violent reactions? Y / N
Decontamination as per GHD procedure? Y / N
Was sampling equipment pre-cleaned? Y / N
COC updated? Y / N

Parameters / Preservatives	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

6 bottles, Metals filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: GASL_BH25A

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 20/5/2020
- Round May 2020

Sampling Information
- Purge Method: Peri
- Sample Method: Peri
- WQ Meter Type: YSI
- Flow Cell: Y / N
- Pump Depth: 2.8 m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 2.150 m
- Logic Check: ✓
- Screen: From: / to: m
- Stick Up: ✓ m
- NAPL Check: ✓
- Bore Diam.: 50 mm
- Ref.datum:
- Well Cap Secure? Yes
- Bore Depth: 2.980 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (.....)	Elec.Cond (.....)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		stable	+/- 10%	+/- 3%	+/- 0.05 pH	+/- 10 mV	-		
11:14	1	2.75	0.34	401.8	6.75	101.3	21.0		Grey cloudy, strong HC odour, no sheen.
		Very little water recharge, sample taken.							

Field QA Checks:
- Air bubbles in vials? Y / N Any violent reactions? Y / N
- Decontamination as per GHD procedure? Y / N
- Was sampling equipment pre-cleaned? Y / N
- COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottles, Metals + ESB filtered.

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: SRT-BH047

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 18/5/20
- Round May 2020

Sampling Information
- Purge Method: Peri
- Sample Method: Peri
- WQ Meter Type: YSI
- Flow Cell: Y / N Pump Depth: —m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 4.45 m Logic Check: —
- Screen: From: — to: — m Stick Up: — m
- NAPL Check: Bore Diam.: 50 mm
- Ref.datum: — Well Cap Secure? Y
- Bore Depth: 8.955 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (µS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		stable	+/- 10%	+/- 3%	+/- 0.05 pH	+/- 10 mV	-		
10.07	1	4.47	1.48	418.3	7.32	59.8	20.2		cloudy, grey / light brown, no odour/sheen
10.10	1.5	5.14	1.41	416.7	7.35	58.6	20.3		"
10.13	2	5.40	1.35	413.3	7.33	58.0	20.4		"
10.16	2.5	5.57	1.40	409.1	7.30	57.8	20.4		Stable, sampled

Field QA Checks:
- Air bubbles in vials? Y / N Any violent reactions? Y / N
- Decontamination as per GHD procedure? Y / N
- Was sampling equipment pre-cleaned? Y / N
- COC updated? Y / N

Parameters / Preservatives	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

GHD | MANAGEMENT ENGINEERING ENVIRONMENT

Purging and Sampling Record

Bore ID: SKT_BH050

Job Information

Client: Laing O'Rouke / Sydney Metro
Project: Central Station Main Works
Proj. No.: 21-27234
Sampler: T. Nham / J. Vickers
Date: 18/5/20
Round May 2020

Sampling Information

Purge Method: —
Sample Method: —
WQ Meter Type: YSI
Flow Cell: Y / N Pump Depth:.....m
WLevel Meter Type: Dip / Fox / Int.Fce / Gge
Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information

SWL: Dry m Logic Check: —
Screen: From:.....to..... m Stick Up: ..... m
NAPL Check:..... Bore Diam.: 50 mm
Ref.datum: — Well Cap Secure? Y
Bore Depth: 2.77 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (.....)	Elec.Cond (.....)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
									Dry

Field QA Checks:

Air bubbles in vials? Y / N Any violent reactions? Y / N
Decontamination as per GHD procedure? Y / N
Was sampling equipment pre-cleaned? Y / N
COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: SRT_BH052

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 18/5/20
- Round May 2020

Sampling Information
- Purge Method: Peri
- Sample Method: Peri
- WQ Meter Type: YSI
- Flow Cell: Y / N Pump Depth: 7.5 m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 6.275 m Logic Check: /
- Screen: From: / to: m Stick Up: / m
- NAPL Check: / Bore Diam.: 50 mm
- Ref.datum: Well Cap Secure? Yes
- Bore Depth: 7.9J m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (µS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		stable	+/- 10%	+/- 3%	+/- 0.05 pH	+/- 10 mV	-		
9:21	1	6.68	2.62	321.2	6.39	74.8	20.2		clear, no odours/sheen
9:25	2	6.87	2.25	322.1	6.94	79.6	20.2		"
9:29	3	7.18	2.24	331.8	6.91	81.6	20.2		"
9:33	4	7.42	2.54	333.2	6.98	82.1	20.3		"

Field QA Checks:
- Air bubbles in vials? Y / N Any violent reactions? Y / N
- Decontamination as per GHD procedure? Y / N
- Was sampling equipment pre-cleaned? Y / N
- COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottles, metal + field filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: SRC BH059

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 18/5/20
- Round May 2020

Sampling Information
- Purge Method: Pump
- Sample Method: Pump
- WQ Meter Type: YSI
- Flow Cell: Y / N Pump Depth: 5.8 m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 4.885 m Logic Check: /
- Screen: From: ..... to ..... m Stick Up: ..... m
- NAPL Check: / Bore Diam.: 50 mm
- Ref.datum: / Well Cap Secure? Yes
- Bore Depth: 6.03 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (uS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		stable	+/- 10%	+/- 3%	+/- 0.05 pH	+/- 10 mV	-		
11:22	1	5.39	3.75	373.2	7.03	82.8	20.7		Clear/dark, no odour/sheen
	Very little water, sample taken								

Field QA Checks:
- Air bubbles in vials? Y / N Any violent reactions? Y / N
- Decontamination as per GHD procedure? Y / N
- Was sampling equipment pre-cleaned? Y / N
- COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottles, rebar + fence fitting

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: CSM-BH02

Job Information	Sampling Information	Bore Information
Client: Laing O'Rourke / Sydney Metro	Purge Method: Geo Micropge MP10	SWL: 20.120 m
Project: Central Station Main Works	Sample Method: "	Screen: From: ..... to ..... m
Proj. No.: 21-27234	WQ Meter Type: YSI	NAPL Check: .....
Sampler: T. Nham / J. Vickers	Flow Cell: Y / N Pump Depth: 25 m	Ref.datum: .....
Date: 19/6/2020	WLevel Meter Type: Dip / Fox / Int.Fce / Gge	Bore Depth: 33.15 m
Round June 2020	Field Filtered? Y / N (filter vessel, disposable filter/syringe)	Logic Check: / Stick Up: / Bore Diam.: 50 mm Well Cap Secure? Yes

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L.....)	Elec.Cond (uS/cm.....)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
12:51	1	20.39	1.38	930	6.66	-77.3	20.2		Brown cloudy, no odour/sheen
12:54	2	20.50	0.50	959	6.65	-92.8	20.2		"
12:57	3	20.66	0.35	958	6.64	-96.8	20.2		"
13:00	4	20.86	0.26	954	6.62	-96.7	20.1		"
13:03	5	20.99	0.27	945	6.60	-97.0	20.2		"
13:06	6	21.05	0.28	944	6.60	-97.8	20.1		"

Field QA Checks:

Air bubbles in vials? Y / N Any violent reactions? Y / N

Decontamination as per GHD procedure? Y / N

Was sampling equipment pre-cleaned? Y / N

COC updated? Y / N

Parameters / Preservatives	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

10+9 bottles, Metal/Steel Gland DUP = QC02

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: CSMBH04

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 18/6/2020
- Round June 2020

Sampling Information
- Purge Method: Micropurge MP10
- Sample Method:
- WQ Meter Type: YSI
- Flow Cell: Y / N — Pump Depth: 24 m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 21.30 m — Logic Check: ✓
- Screen: From: ..... to ..... m — Stick Up: ..... m
- NAPL Check: / — Bore Diam.: 50 mm
- Ref.datum: ..... — Well Cap Secure? Yes
- Bore Depth: 33.62 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (mS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		stable	+/- 10%	+/- 3%	+/- 0.05 pH	+/- 10 mV	-		
10:30	1	21.63	1.86	392.8	5.63	134.3	21.0		Red brown cloudy no odor/sheen
10:33	2	21.67	1.92	395.3	5.63	131.2	21.0		"
10:36	3	21.70	1.98	397.4	5.62	129.6	21.1		"
10:39	4	21.75	1.78	408.2	5.60	121.2	21.1		"
10:42	5	21.78	1.55	419.1	5.58	114.0	21.1		"
10:45	6	21.75	1.35	431.8	5.56	107.4	21.1		"
10:48	7	21.81	1.10	450.4	5.56	99.5	21.1		"
10:51	8	21.81	1.03	458.5	5.56	92.5	21.1		"
10:54	9	21.81	0.84	474.0	5.57	81.4	21.1		"
10:57	10	21.81	0.74	489.4	5.59	61.5	21.1		"
11:00	11	21.81	0.68	502	5.61	42.1	21.1		"
11:03	12	21.81	0.63	519	5.62	23.6	21.1		"

Field QA Checks:
- Air bubbles in vials? Y / N — Any violent reactions? Y / N
- Decontamination as per GHD procedure? Y / N
- Was sampling equipment pre-cleaned? Y / N
- COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

10 bottles, Metals + Eq filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: CSM_BH06

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 18/6/2020
- Round June 2020

Sampling Information
- Purge Method: QED Micropp MP10
- Sample Method:
- WQ Meter Type: YSI
- Flow Cell: Y / N Pump Depth: 25 m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 20.59 m Logic Check: ✓
- Screen: From: ..... to ..... m Stick Up: ..... m
- NAPL Check: ✓ Bore Diam.: 50 mm
- Ref.datum: ..... Well Cap Secure? Yes
- Bore Depth: 35.91 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (Cus/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
9.35	1	20.68	0.35	896	6.38	-8.2	21.7		clear / slightly cloudy, no odour / sheen
9.43	3	20.67	0.30	893	6.21	-7.6	21.7		" SWL stable
9.46	4	20.68	0.42	892	6.17	-7.6	21.7		"
9.49	5	20.68	0.34	889	6.14	-6.8	21.6		"
9.52	6	20.68	0.31	890	6.12	-8.8	21.6		"
9.55	7	20.68	0.28	890	6.11	-11.4	21.7		"
9.58	8	20.68	0.27	890	6.10	-12.5	21.7		Sampled

Field QA Checks:
- Air bubbles in vials? Y / N Any violent reactions? Y / N
- Decontamination as per GHD procedure? Y / N
- Was sampling equipment pre-cleaned? Y / N
- COC updated? Y / N

Parameters / Preservatives	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

10 bottles, Metals/As for filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: CSM_BH08

Job Information

Client: Laing O'Rourke / Sydney Metro
Project: Central Station Main Works
Proj. No.: 21-27234
Sampler: T. Nham / J. Vickers
Date: 17/06/2020
Round June 2020

Sampling Information

Purge Method: QED Micropurge MP10
Sample Method: "
WQ Meter Type: YSI
Flow Cell: Y / N Pump Depth: 25 m
WLevel Meter Type: Dip / Fox / Int.Fce / Gge
Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information

SWL: 13.615 m Logic Check: /
Screen: From:.....to..... m Stick Up: ..... m
NAPL Check: / Bore Diam.: 50 mm
Ref.datum: / Well Cap Secure? Yes
Bore Depth: 34.94 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (µS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	*-*		
7:55	1	13.63	0.45	501	6.60	-26.7	20.4		Grey cloudy, no odour/sheen
7:58	2	13.64	0.36	503	6.47	-25.7	20.5		"
8:01	3	13.64	0.33	503	6.37	-23.9	20.6		"
8:04	4	13.64	0.33	503	6.29	-21.5	20.6		"
8:08	5	13.64	0.32	502	6.26	-21.1	20.6		"

Field QA Checks:

Air bubbles in vials? Y / (N) Any violent reactions? Y / (N)
Decontamination as per GHD procedure? (Y) / N
Was sampling equipment pre-cleaned? (Y) / N
COC updated? (Y) / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

10+5 bottles, Metals filtered DUP = QC01

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: CSM-BH045

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 19/6/20
- Round June 2020

Sampling Information
- Purge Method: Peri
- Sample Method: Peri
- WQ Meter Type: YSI
- Flow Cell: Y / N Pump Depth: 6.5 m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 4.825 m Logic Check: -
- Screen: From: - to - m Stick Up: - m
- NAPL Check: - Bore Diam.: 50 mm
- Ref.datum: - Well Cap Secure? Y
- Bore Depth: 6.60 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (uS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		stable	+/- 10%	+/- 3%	+/- 0.05 pH	+/- 10 mV	-		
12:12	0.5	4.94	0.90	563	6.07	21.0	19.6		Clear, no odour/sheen
12:15	1	4.98	0.71	569	5.99	20.5	19.5		"
12:19	1.5	5.04	0.65	574	5.96	19.0	19.6		"
12:22	2	5.08	0.66	571	5.94	15.1	19.8		"
12:27	2.5	5.14	0.63	565	5.94	12.0	19.8		"
12:31	3	5.18	0.61	558	5.93	10.1	19.8		"

Field QA Checks:
- Air bubbles in vials? Y / N Any violent reactions? Y / N
- Decontamination as per GHD procedure? Y / N
- Was sampling equipment pre-cleaned? Y / N
- COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

10 bottles, Metals+TPH filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: CSM_BH105

Job Information

Client: Laing O'Rourke / Sydney Metro
Project: Central Station Main Works
Proj. No.: 21-27234
Sampler: T. Nham / J. Vickers
Date: 19/6/2020
Round June 2020

Sampling Information

Purge Method: Peri
Sample Method: Peri
WQ Meter Type: YSI
Flow Cell: Y / N Pump Depth: 8 m
WLevel Meter Type: Dip / Fox / Int.Fce / Gge
Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information

SWL: 3.84 m Logic Check: /
Screen: From: / to: ..... m Stick Up: ..... m
NAPL Check: / Bore Diam.: 50 mm
Ref.datum: ..... Well Cap Secure? Yes
Bore Depth: 9.94 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (uS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
9:02	1	4.10	1.60	397.9	6.57	97.7	20.2		Brown cloudy, no odour/sheen
9:06	2	4.13	1.57	397.9	6.35	102.5	20.0		"
9:09	3	4.14	1.57	390.5	6.25	108.5	20.0		"
9:12	4	4.15	1.69	389.5	6.27	113.4	19.8		"
9:15	5	4.18	1.64	386.0	6.15	124.1	20.1		"
9:20	6	4.20	1.68	382.2	6.10	129.6	20.1		"

Field QA Checks:

Air bubbles in vials? Y / N Any violent reactions? Y / N
Decontamination as per GHD procedure? Y / N
Was sampling equipment pre-cleaned? Y / N
COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

10 L Alb, Metals + Fe2 filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: GASV_BH7

Job Information

Client: Laing O'Rourke / Sydney Metro
Project: Central Station Main Works
Proj. No.: 21-27234
Sampler: T. Nham / J. Vickers
Date: 17/6/2020
Round June 2020

Sampling Information

Purge Method: —
Sample Method: —
WQ Meter Type: YSI
Flow Cell: Y / N Pump Depth:.....m
WLevel Meter Type: Dip / Fox / Int.Fce / Gge

Bore Information

SWL: DRY m Logic Check: /
Screen: From:.....to..... m Stick Up: ..... m
NAPL Check:..... Bore Diam.: 50 mm
Ref.datum: ..... Well Cap Secure? Yes
Bore Depth: 6.18 m

Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (.....)	Elec.Cond (.....)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
		DRY							

Field QA Checks:
Air bubbles in vials? Y / N Any violent reactions? Y / N
Decontamination as per GHD procedure? Y / N
Was sampling equipment pre-cleaned? Y / N
COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

DRY

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: CASV_BH10

Job Information	Sampling Information	Bore Information
Client: Laing O'Rourke / Sydney Metro	Purge Method: QED Micropurge MP10	SWL: 19.270 m — Logic Check: .....
Project: Central Station Main Works	Sample Method: QED	Screen: From:..... to..... m — Stick Up: ..... m
Proj. No.: 21-27234	WQ Meter Type: YSI	NAPL Check:..... — Bore Diam.: 50 mm
Sampler: T. Nham / J. Vickers	Flow Cell: Y / N — Pump Depth: 23 m	Ref.datum: ..... — Well Cap Secure? Yes
Date: 19/6/2020	WLevel Meter Type: Dip / Fox / Int.Fce / Gge	Bore Depth: 29.95 m
Round June 2020	Field Filtered? Y / N (filter vessel, disposable filter/syringe)	

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (Mg/L)	Elec.Cond (µs/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
11:40	1	20.31	0.75	1434	6.05	-96.0	20.0		lgt grey cloudy, organic odour no sheen
11:43	2	20.71	0.56	1441	6.05	-99.6	20.2		"
11:46	3	21.32	0.76	1444	6.09	-108.6	20.2		"
11:50	4	21.52	0.67	1449	6.08	-113.4	20.2		"

Field QA Checks:

Air bubbles in vials? Y / N Any violent reactions? Y / N
Decontamination as per GHD procedure? Y / N
Was sampling equipment pre-cleaned? Y / N
COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottles, Metal + Fe2 filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: GASW_BH11

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 19/6/2020
- Round June 2020

Sampling Information
- Purge Method: —
- Sample Method: Pen
- WQ Meter Type: YSI
- Flow Cell: Y / N Pump Depth: 8 m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 7.105 m Logic Check: /
- Screen: From: ..... to ..... m Stick Up: ..... m
- NAPL Check: / Bore Diam.: 50 mm
- Ref.datum: / Well Cap Secure? Yes
- Bore Depth: 8.05 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (uS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
10.19	1	7.46	2.62	314.0	6.07	55.1	18.4		brown, turbid, high sediment load, slight odour, slight sheen
10.22	1.5	7.605	2.60	302.0	5.95	72.6	18.7		no sheen. No recharge
10.25	2	7.72	2.61	296.8	5.86	81.5	18.8		grab sample taken

Field QA Checks:
- Air bubbles in vials? Y / N Any violent reactions? Y / N
- Decontamination as per GHD procedure? Y / N
- Was sampling equipment pre-cleaned? Y / N
- COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 Bottles, Metals + Fee filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: GASW_BH23

Job Information

Client: Laing O'Rourke / Sydney Metro
Project: Central Station Main Works
Proj. No.: 21-27234
Sampler: T. Nham / J. Vickers
Date: 17/6/2020
Round June 2020

Sampling Information

Purge Method: —
Sample Method: Bail
WQ Meter Type: YSI
Flow Cell: Y / N Pump Depth: 3.5 m
WLevel Meter Type: Dip / Fox / Int.Fce / Gge
Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information

SWL: 3.53 m Logic Check: /
Screen: From: ..... to ..... m Stick Up: ..... m
NAPL Check: / Bore Diam.: 50 mm
Ref.datum: ..... Well Cap Secure? Yes
Bore Depth: 3.91 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (.....)	Elec.Cond (.....)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
	Lay bottle water, grab sample taken.								19/6/20 - Partial grab sample taken (insufficient water)
	19/6/20 - SWL = 3.635								19/6/20 - Remainder of grab sample taken

Field QA Checks:

Air bubbles in vials? Y / N Any violent reactions? Y / N
Decontamination as per GHD procedure? Y / N
Was sampling equipment pre-cleaned? Y / N
COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

2 Lablay, Metals + EDD Fifford

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: GASH-BH254

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 19/6/20
- Round June 2020

Sampling Information
- Purge Method: Peri
- Sample Method: Peri
- WQ Meter Type: YSI
- Flow Cell: Y / N Pump Depth: ~~.....~~ m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 2.06 m Logic Check: ~~.....~~
- Screen: From: ~~.....~~ to ~~.....~~ m Stick Up: ~~.....~~ m
- NAPL Check: ~~.....~~ Bore Diam.: 50 mm
- Ref.datum: ~~.....~~ Well Cap Secure? Y
- Bore Depth: 2.94 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (mS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
10.33	0.1	2.21	0.28	302.0	7.78	-229.6	18.1		Strong hydrocarbon odour, no sheen.
10.36	0.2	2.26	0.14	303.2	7.83	-225.4	18.1		Black / dark grey, turbid. becoming less turbid
10.39	0.3	2.38	0.19	301.9	7.68	-207.2	18.2		Poor recharge, Sample taken

Field QA Checks:
- Air bubbles in vials? Y / N Any violent reactions? Y / N
- Decontamination as per GHD procedure? Y / N
- Was sampling equipment pre-cleaned? Y / N
- COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottles, Metals + Fe24 filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: SRT_BH047

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 17/6/20
- Round June 2020

Sampling Information
- Purge Method: Low flow Peri pump
- Sample Method: Peri pump
- WQ Meter Type: YSI
- Flow Cell: Y / N Pump Depth: 6.5 m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 3.652 m Logic Check: —
- Screen: From: — to — m Stick Up: — m
- NAPL Check: — Bore Diam.: 50 mm
- Ref.datum: — Well Cap Secure? Y
- Bore Depth: 6.95 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (µS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
10.04	0.5	4.125	2.08	384.2	6.91	103.0	20.0		clear to slightly cloudy, no sheen/odour
10.07	1	4.39	1.82	380.7	6.88	102.5	20.1		"
10:10	1.5	4.63	2.08	374.2	6.85	103.4	20.1		" Poor recharge
10-13	2.0	4.92	2.32	369.9	6.84	104.1	20.1		"
10.16	2.5	5.16	2.82	365.8	6.86	104.1	20.1		"
10-19	3.0	5.32	3.08	356.1	6.88	104.1	20.0		"
10.22	3.5	5.51	3.44	344.2	6.88	105.3	19.4		Sampled

Field QA Checks:
- Air bubbles in vials? Y / N Any violent reactions? Y / N
- Decontamination as per GHD procedure? Y / N
- Was sampling equipment pre-cleaned? Y / N
- COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

10 Lab, Metals + Ca filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: SRT_PH050

Job Information	Sampling Information	Bore Information
Client: Laing O'Rourke / Sydney Metro	Purge Method: —	SWL: 2.385 m Logic Check: ✓
Project: Central Station Main Works	Sample Method: Bail	Screen: From: ..... to ..... m Stick Up: ..... m
Proj. No.: 21-27234	WQ Meter Type: YSI	NAPL Check: ✓ Bore Diam.: 50 mm
Sampler: T. Nham / J. Vickers	Flow Cell: Y / N Pump Depth: 2.7 m	Ref.datum: ..... Well Cap Secure? Yes
Date: 17/6/2020	WLevel Meter Type: Dip / Fox / Int.Fce / Gge	Bore Depth: 2.77 m
Round June 2020	Field Filtered? Y / N (filter vessel, disposable filter/syringe)	

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (.....)	Elec.Cond (.....)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
		Very little water, grab sample taken							

Field QA Checks:

Air bubbles in vials? Y / N Any violent reactions? Y / N

Decontamination as per GHD procedure? Y / N

Was sampling equipment pre-cleaned? Y / N

COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottles, Metals + EA filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: SRT_BH052

Job Information

Client: Laing O'Rourke / Sydney Metro
Project: Central Station Main Works
Proj. No.: 21-27234
Sampler: T. Nham / J. Vickers
Date: 17/6/2020
Round June 2020

Sampling Information

Purge Method: Peri
Sample Method: Peri
WQ Meter Type: YSI
Flow Cell: Y / N Pump Depth: 7.5 m
WLevel Meter Type: Dip / Fox / Int.Fce / Gge
Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information

SWL: 6.080 m Logic Check: /
Screen: From: / to: m Stick Up: / m
NAPL Check: / Bore Diam.: 50 mm
Ref.datum: Well Cap Secure? Yes
Bore Depth: 7.88 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (uS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
9:16	1	6.36	4.56	400.9	6.52	86.1	18.7		Clear, no odor/film
9:20	2	6.51	4.12	398.6	6.80	90.7	19.9		"
9:24	3	6.63	4.35	392.6	6.74	93.1	20.0		"
9:28	4	6.77	4.91	365.1	6.53	107.5	19.5		"
9:32	5	7.04	4.01	319.2	6.23	131.8	19.9		"

Field QA Checks:

Air bubbles in vials? Y / (N) Any violent reactions? Y / (N)
Decontamination as per GHD procedure? (Y) / N
Was sampling equipment pre-cleaned? (Y) / N
COC updated? (Y) / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

10 bottles, Metals + Fe# filtered.

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: SRL B4059

Job Information

Client: Laing O'Rourke / Sydney Metro
Project: Central Station Main Works
Proj. No.: 21-27234
Sampler: T. Nham / J. Vickers
Date: 17/6/2020
Round June 2020

Sampling Information

Purge Method: —
Sample Method: Peri
WQ Meter Type: YSI
Flow Cell: Y / N Pump Depth: 6 m
WLevel Meter Type: Dip / Fox / Int.Fce / Gge
Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information

SWL: 5.00 m Logic Check: /
Screen: From: / to: m Stick Up: m
NAPL Check: / Bore Diam.: 50 mm
Ref.datum: Well Cap Secure? Yes
Bore Depth: 6.00 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (.....)	Elec.Cond (.....)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
		Little water,		prob sample taken					

Field QA Checks:

Air bubbles in vials? Y / N Any violent reactions? Y / N
Decontamination as per GHD procedure? Y / N
Was sampling equipment pre-cleaned? Y / N
COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

10 bottles, Metals + Fe2+ filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: CSM_01MW

Job Information	Sampling Information	Bore Information
Client: Laing O'Rourke / Sydney Metro	Purge Method: QED MP10	SWL: 20.020 m
Project: Central Station Main Works	Sample Method: "	Logic Check: ✓
Proj. No.: 21-27234	WQ Meter Type: YSI	Screen: From: / to: m
Sampler: T. Nham / J. Vickers	Flow Cell: Y / N	Pump Depth: 27 m	Stick Up: ✓ m
Date: 15/7/2020	WLevel Meter Type: Dip / Fox / Int.Fce / Gge	NAPL Check: /	Bore Diam.: 50 mm
Round July 2020	Field Filtered? Y / N (filter vessel, disposable filter/syringe)	Ref.datum:	Well Cap Secure? Yes
		Bore Depth: 37.11 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (mS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
9:12	1	20.63	0.70	900	5.61	45.0	19.8		Dam cloudy
9:15	2	20.75	0.95	885	5.61	35.2	19.6		"
9:18	3	20.87	1.22	884	5.58	28.0	19.8		good recharge
9:21	4	20.94	1.87	883	5.57	20.0	19.7		"
9:24	5	20.98	2.35	877	5.55	18.6	19.7		"
9:27	6	21	2.63	871	5.55	10.4	19.8		"
9:30	7	21.07	2.83	870	5.56	-27.4	19.8		sampled

Field QA Checks:

Air bubbles in vials? Y / (N) Any violent reactions? Y / (N)
Decontamination as per GHD procedure? (Y) / N
Was sampling equipment pre-cleaned? (Y) N
COC updated? (Y) N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottles, Metals filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: GST_BH04

Job Information

Client: Laing O'Rourke / Sydney Metro
Project: Central Station Main Works
Proj. No.: 21-27234
Sampler: T. Nham / J. Vickers
Date: 15/7/2020
Round July 2020

Sampling Information

Purge Method: QED MP10
Sample Method: 11
WQ Meter Type: YSI
Flow Cell: Y / N
Pump Depth: 25 m
WLevel Meter Type: Dip / Fox / Int.Fce / Gge
Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information

SWL: 21.42 m
Screen: From: ..... to ..... m
NAPL Check: /
Ref.datum: /
Bore Depth: 33.695 m
Logic Check: /
Stick Up: / m
Bore Diam.: 50 mm
Well Cap Secure? Yes

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (.....)	Elec.Cond (.....)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
11:03	1	21.69	1.71	387.7	5.85	79.1	20.6		Orangebrown cloudy/p
11:06	2	21.77	2.52	389.5	5.72	93.4	20.8		"
11:09	3	21.80	2.14	392.1	5.70	92.4	20.8		"
11:12	4	21.84	1.54	396.2	5.68	91.5	20.9		"
11:15	5	21.84	1.41	404.5	5.68	84.7	20.9		"
11:18	6	21.84	1.33	416.7	5.69	80.2	20.9		"

Field QA Checks:

Air bubbles in vials? Y (N) Any violent reactions? Y / N
Decontamination as per GHD procedure? Y / N
Was sampling equipment pre-cleaned? Y / N
COC updated? Y / N

Parameters / Preservatives	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

5 bottles, Metals + Ice + Blank

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: CSM_BH06

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 15/7/2020
- Round July 2020

Sampling Information
- Purge Method: QED mp10
- Sample Method: 11
- WQ Meter Type: YSI
- Flow Cell: Y / N
- Pump Depth: 25 m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 20.485 m
- Logic Check: .....
- Screen: From: ..... to ..... m
- Stick Up: ..... m
- NAPL Check: .....
- Bore Diam.: 50 mm
- Ref.datum: .....
- Well Cap Secure? Yes
- Bore Depth: 35.37 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (µS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
13.46	1	20.53	0.48	860	5.93	4.1	21.0		clear, no odour, no sheen
13.49	2	20.54	0.40	840	5.95	-2.8	21.0		"
13.52	3	20.54	0.32	840	5.95	-1.9	21.1		SWL stable
13.55	4	20.54	0.29	840	5.96	-4.9	21.1		"
13.58	5	20.54	0.29	842	5.96	-6.6	21.3		

Field QA Checks:
- Air bubbles in vials? Y / (N) Any violent reactions? Y / (N)
- Decontamination as per GHD procedure? (Y) / N
- Was sampling equipment pre-cleaned? (Y) / N
- COC updated? (Y) / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottles, metals + 60 filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: CSMBH08

Job Information	Sampling Information	Bore Information
Client: Laing O'Rourke / Sydney Metro	Purge Method: QED MP10	SWL: 13.125 m
Project: Central Station Main Works	Sample Method: "	Screen: From: ..... to ..... m
Proj. No.: 21-27234	WQ Meter Type: YSI	NAPL Check: .....
Sampler: T. Nham / J. Vickers	Flow Cell: Y / N	Pump Depth: 20 m
Date: 15/7/2020	WLevel Meter Type:	Dip / Fox / Int.Fce / Gge
Round July 2020	Field Filtered? Y / N (filter vessel, disposable filter/syringe)	

Logic Check:	Stick Up: ..... m
Ref.datum:	Bore Diam.: 50 mm
Bore Depth: 14.55 m	Well Cap Secure? Yes

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (ppm....)	Elec.Cond (mS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
8.00	1	13.13	0.48	538	6.35	-4.9	20.7		clear, no odour / sheen
8.03	2	13.13	0.32	544	6.31	-13.8	20.6		SWL stable
8.08	3	13.13	0.21	546	6.24	-23.3	20.7		"
8.11	5	13.13	0.17	549	6.24	-25.7	20.7		"
8.14	6	13.13	0.15	549	6.23	-30.8	20.8		"
									Sampled

Field QA Checks:

Air bubbles in vials? Y / (N) Any violent reactions? Y / (N)
Decontamination as per GHD procedure? (Y) / N
Was sampling equipment pre-cleaned? (Y) / N
COC updated? (Y) / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9+9 bottles
Metals + Fce Filtered

DUP = (QC0)

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: CSM_DH095

Job Information

Client: Laing O'Rourke / Sydney Metro
Project: Central Station Main Works
Proj. No.: 21-27234
Sampler: T. Nham / J. Vickers
Date: 16/7/2020
Round July 2020

Sampling Information

Purge Method: Peri
Sample Method: Peri
WQ Meter Type: YSI
Flow Cell: Y / N
Pump Depth: 6.5 m
WLevel Meter Type: Dip / Fox / Int.Fce / Gge
Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information

SWL: 4.805 m
Logic Check: /
Screen: From: /to m
Stick Up: / m
NAPL Check: /
Bore Diam.: 50 mm
Ref.datum: /
Well Cap Secure? Yes
Bore Depth: 6.59 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (C us/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings).	*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-			
9.24	0.5	4.945	0.37	564	5.94	28.8	19.2		brown, turbid, becoming clear, no odour
9.27	1	5.11	0.20	561	5.74	30.5	19.4		no sheen
9.30	1.5	5.175	0.22	552	5.76	38.0	19.3		"
9.33	2	5.25	0.28	549	5.74	35.4	19.4		"
9.36	2.5	5.31	0.24	544	5.74	34.9	19.5		" Sampled.

Field QA Checks:

Air bubbles in vials? Y / (N) Any violent reactions? Y (N)
Decontamination as per GHD procedure? (Y) / N
Was sampling equipment pre-cleaned? (Y) / N
COC updated? (Y) / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9+9 bottles, Metals+Ca acidified DUP = QA02

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: CSM-BH105

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 15/7/2020
- Round July 2020

Sampling Information
- Purge Method: QED MP10
- Sample Method:
- WQ Meter Type: YSI
- Flow Cell: Y / N — Pump Depth: 9 m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 3.99 m
- Screen: From: ..... to ..... m
- NAPL Check: .....
- Ref.datum: .....
- Bore Depth: 9.905 m
- Logic Check: /
- Stick Up: ..... m
- Bore Diam.: 50 mm
- Well Cap Secure? Yes

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (Mg/L)	Elec.Cond (µS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
11.45	1	4.30	0.80	244.1	5.22	157.2	20.2		brown, turbid, no odour/sheen
11.48	2	4.62	0.85	240.7	5.14	161.2	20.2		"
11.51	3	4.43	0.83	238.8	5.18	163.8	20.1		stable
11.54	4	4.44	0.83	238.5	5.17	165.0	20.1		sampled

Field QA Checks:
- Air bubbles in vials? Y / (N) Any violent reactions? Y / (N)
- Decontamination as per GHD procedure? (Y) / N
- Was sampling equipment pre-cleaned? (Y) / N
- COC updated? (Y) / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottles, Metals+F24 & Hexed

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: GASW_BH7

Job Information

Client: Laing O'Rouke / Sydney Metro
Project: Central Station Main Works
Proj. No.: 21-27234
Sampler: T. Nham / J. Vickers
Date: 15/7/20
Round July 2020

Sampling Information

Purge Method: —
Sample Method: —
WQ Meter Type: YSI
Flow Cell: Y / N Pump Depth: DRY m
WLevel Meter Type: Dip / Fox / Int.Fce / Gge
Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information

SWL: DRY m Logic Check: /
Screen: From: ..... to ..... m Stick Up: ..... m
NAPL Check: / Bore Diam.: 50 mm
Ref.datum: / Well Cap Secure? Yes
Bore Depth: 6.80 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (.....)	Elec.Cond (.....)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
		DRY							

Field QA Checks:

Air bubbles in vials? Y / N Any violent reactions? Y / N
Decontamination as per GHD procedure? Y / N
Was sampling equipment pre-cleaned? Y / N
COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

DRY

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: GASW_DH10

Job Information

Client: Laing O'Rourke / Sydney Metro
Project: Central Station Main Works
Proj. No.: 21-27234
Sampler: T. Nham / J. Vickers
Date: 15/7/2020
Round July 2020

Sampling Information

Purge Method: QED MP10
Sample Method: "
WQ Meter Type: YSI
Flow Cell: Y / N Pump Depth: 24 m
WLevel Meter Type: Dip / Fox / Int.Fce / Gge
Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information

SWL: 19.295 m Logic Check: .....
Screen: From: ..... to ..... m Stick Up: ..... m
NAPL Check: ..... Bore Diam.: 50 mm
Ref.datum: ..... Well Cap Secure? Yes
Bore Depth: 29.93 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (Cond)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
10.13	1	20.04	0.82	1426	6.23	-139.9	19.6		grey, organic odour, no sheen
10.16	2	20.475	0.82	1424	6.25	-148.2	19.7		"
10.19	3	21.18	0.87	1430	6.26	-140.4	19.8		Sampled

Field QA Checks:

Air bubbles in vials? Y / (N) Any violent reactions? Y / (N)
Decontamination as per GHD procedure? (Y) / N
Was sampling equipment pre-cleaned? (Y) / N
COC updated? (Y) / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottles, Metals + Fe2 filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: GASW-BH11

Job Information

Client: Laing O'Rourke / Sydney Metro
Project: Central Station Main Works
Proj. No.: 21-27234
Sampler: T. Nham / J. Vickers
Date: 16/7/2020
Round July 2020

Sampling Information

Purge Method: Peri
Sample Method: Peri
WQ Meter Type: YSI
Flow Cell: Y / N Pump Depth: 8 m
WLevel Meter Type: Dip / Fox / Int.Fce / Gge
Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information

SWL: 7.11 m Logic Check: /
Screen: From: / to: / m Stick Up: / m
NAPL Check: / Bore Diam.: 50 mm
Ref.datum: / Well Cap Secure? Yes
Bore Depth: 8.05 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (µS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
10.08	~~1.24~~	7.25	0.78	375.6	5.86	39.4	18.3		brown/grey, turbid, no odour/sheen
10.11	2	7.39	3.48	298.1	5.49	119.5	18.3		poor recharge
10.14	3	7.52	3.94	304.2	5.56	72.9	18.3		SWL low, sampled

Field QA Checks:

Air bubbles in vials? Y / (N) Any violent reactions? Y / (N)
Decontamination as per GHD procedure? (Y) / N
Was sampling equipment pre-cleaned? (Y) / N
COC updated? (Y) / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottles, metals + Fe2+ filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: GASW_BH23

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 16/7/20
- Round July 2020

Sampling Information
- Purge Method: Peri
- Sample Method: Peri
- WQ Meter Type: YSI
- Flow Cell: Y / N Pump Depth:.....m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 3.36 m Logic Check: ✓
- Screen: From:.....to..... m Stick Up: ✓ m
- NAPL Check: — Bore Diam.: 50 mm
- Ref.datum: — Well Cap Secure? ✓
- Bore Depth: 3.92 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (..mg/L..)	Elec.Cond (..µs/cm..)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
11.41	0.01	3.51	0.72	632	6.97	-62.9	17.1		SWL low, Sampled
									strong HC odour, no sheen
									dark grey, turbid, becoming clear
									grey

Field QA Checks:
- Air bubbles in vials? Y / N Any violent reactions? Y / N
- Decontamination as per GHD procedure? Y / N
- Was sampling equipment pre-cleaned? Y / N
- COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottles, Metals + Fe++ filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: GASW-BH25A

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 16/7/2020
- Round July 2020

Sampling Information
- Purge Method: Peri
- Sample Method: Peri
- WQ Meter Type: YSI
- Flow Cell: Y / N Pump Depth: 2.5 m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 1.880 m Logic Check: /
- Screen: From: ..... to ..... m Stick Up: ..... m
- NAPL Check: / Bore Diam.: 50 mm
- Ref.datum: / Well Cap Secure? Yes
- Bore Depth: 2.54 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (Cal/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		stable	+/- 10%	+/- 3%	+/- 0.05 pH	+/- 10 mV	-		
10.53 ~~10.53~~ 0.5		2.03	0.64	397.3	6.81	-53.7	16.9		Strong
10.56	1	2.11	0.47	397.8	6.92	-104.9	16.9		Hydrocarbon odour, no sheen, colour
10.59	1.5	2.13	0.43	415.3	6.98	-129.6	16.8		with slight grey sediments
11.02	2	2.14	0.37	422.9	7.02	-139.0	16.8		"
11.05	2.5	2.14	0.32	437.9	7.04	-150.3	16.8		"
11.08	3	2.15	0.30	444.5	7.05	-156.5	16.7		SWL stable
11.11	3.5	2.16	0.29	448	7.05	-160.7	16.8		sampled

Field QA Checks:
- Air bubbles in vials? Y / (N) Any violent reactions? Y / (N)
- Decontamination as per GHD procedure? (Y) / N
- Was sampling equipment pre-cleaned? (Y) / N
- COC updated? (Y) / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottles, Metals + Fe filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: SRT_BH047

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 17/7/2020
- Round July 2020

Sampling Information
- Purge Method: Pel
- Sample Method: Per
- WQ Meter Type: YSI
- Flow Cell: Y / N Pump Depth: 6.5 m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 3.785 m Logic Check: /
- Screen: From: ..... to ..... m Stick Up: ..... m
- NAPL Check: / Bore Diam.: 50 mm
- Ref.datum: ..... Well Cap Secure? .....
- Bore Depth: 6.55 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (%)	Elec.Cond (uS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		stable	+/- 10%	+/- 3%	+/- 0.05 pH	+/- 10 mV	-		
9:59	1	4.25	2.40	381.6	6.91	126.5	19.6		Cloudy.
10:02	2	4.515	2.42	382.3	6.95	124.0	19.7		"
10:06	3	4.88	2.41	382.7	6.96	122.1	19.7		"
10:10	4	5.26	2.48	382.7	6.98	119.7	19.7		"
10:14	5	5.55	2.43	383.1	6.99	118.7	19.7		"

Field QA Checks:
- Air bubbles in vials? Y / N Any violent reactions? Y / N
- Decontamination as per GHD procedure? Y / N
- Was sampling equipment pre-cleaned? Y / N
- COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 Labs, Metals + Fe2+ filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: SRT_BH050

Job Information	Sampling Information	Bore Information
Client: Laing O'Rourke / Sydney Metro	Purge Method: —	SWL: 2.523 m
Project: Central Station Main Works	Sample Method: Rei	Screen: From:..... to..... m
Proj. No.: 21-27234	WQ Meter Type: YSI	NAPL Check:.....
Sampler: T. Nham / J. Vickers	Flow Cell: Y / N Pump Depth: 27 m	Ref.datum: .....
Date: 17/7/2020	WLevel Meter Type: Dip / Fox / Int.Fce / Gge	Bore Depth: 2.76 m
Round July 2020	Field Filtered? Y / N (filter vessel, disposable filter/syringe)	Logic Check: ..... Stick Up: ..... m Bore Diam.: 50 mm Well Cap Secure?.....

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (.....)	Elec.Cond (.....)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
		Very little water, grab sample taken.							

Field QA Checks:

Air bubbles in vials? Y / N Any violent reactions? Y / N

Decontamination as per GHD procedure? Y / N

Was sampling equipment pre-cleaned? Y / N

COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

7 bottles, Metals + 69 filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: SRT_BH052

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 17/7/2020
- Round July 2020

Sampling Information
- Purge Method: Peri
- Sample Method: Peri
- WQ Meter Type: YSI
- Flow Cell: Y / N
- Pump Depth: 7.5 m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 6.160 m
- Screen: From: ..... to ..... m
- NAPL Check: .....
- Ref.datum: .....
- Bore Depth: 7.91 m
- Logic Check: /
- Stick Up: ..... m
- Bore Diam.: 50 mm
- Well Cap Secure? Yes

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (Cus/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
9.25	1	6.72	4.75	373.1	6.47	132.4	19.8		clear, slight sedimentation, no odour,
9.28	2	6.94	3.26	326.4	6.05	151.9	19.8		no sheen
9.31	3	7.19	3.03	322.4	5.94	158.9	19.9		
9.34	4	7.25	3.19	324.1	5.97	160.4	19.9		Low swl, sampled

Field QA Checks:
- Air bubbles in vials? Y / N Any violent reactions? Y / N
- Decontamination as per GHD procedure? Y / N
- Was sampling equipment pre-cleaned? Y / N
- COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottles, Mesh + GI Hood

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: SRT_BH055

Job Information
Client: Laing O'Rourke / Sydney Metro
Project: Central Station Main Works
Proj. No.: 21-27234
Sampler: T. Nham / J. Vickers
Date: .....
Round July 2020

Sampling Information
Purge Method:
Sample Method:
WQ Meter Type: YSI
Flow Cell: Y / N Pump Depth:.....m
WLevel Meter Type: Dip / Fox / Int.Fce / Gge
Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
SWL: 5.22 m Logic Check: .....
Screen: From:.....to..... m Stick Up: ..... m
NAPL Check:..... Bore Diam.: 50 mm
Ref.datum: ..... Well Cap Secure? Yes
Bore Depth: 6.00 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (Any Unit)	Elec.Cond (Conv)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
10.59	0.10	5.375	2.04	363.9	6.86	124.8	19.2		clear, no odour, no sheen
									insufficient SWL, sampled

Field QA Checks:
Air bubbles in vials? Y / (N) Any violent reactions? Y / (N)
Decontamination as per GHD procedure? Y / N
Was sampling equipment pre-cleaned? Y / N
COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 Labs, Metals + 504 filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: CSM-BH02

Job Information
- **Client:** Laing O'Rourke / Sydney Metro
- **Project:** Central Station Main Works
- **Proj. No.:** 21-27234
- **Sampler:** T. Nham / J. Vickers
- **Date:** 18/8/2020
- **Round** July 2020

Sampling Information
- **Purge Method:** QED MP10
- **Sample Method:** "
- **WQ Meter Type:** YSI
- **Flow Cell:** Y / N — **Pump Depth:** 23 m
- **WLevel Meter Type:** Dip / Fox / Int.Fce / Gge

Bore Information
- **SWL:** 20.030 m — **Logic Check:** /
- **Screen:** From:..... to..... m — **Stick Up:** ..... m
- **NAPL Check:** / — **Bore Diam.:** 50 mm
- **Ref.datum:** ..... — **Well Cap Secure?** Yes
- **Bore Depth:** 33.12 m

Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L...)	Elec.Cond (Cuscm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
9.37	1	20.37	1.71	556	6.20	112.9	19.9		light brown, moderate sediment load, no odour,
9.40	2	20.53	1.61	555	6.26	115.5	19.9		no sheen
9.43	3	20.59	1.65	554	6.32	113.6	20.0		"
9.46	4	20.67	1.57	556	6.33	113.9	20.0		"
9.49	5	20.72	1.48	556	6.27	118.0	19.9		"
9.52	6	20.76	1.41	557	6.25	119.6	20.0		"
9.55	7	20.78	1.45	558	6.24	119.0	20.0		stable, sample

Field QA Checks:
- Air bubbles in vials? Y / N — Any violent reactions? Y / N
- Decontamination as per GHD procedure? Y / N
- Was sampling equipment pre-cleaned? Y / N
- COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

5 Latte, Metals + Fe2+ filtered.

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: CSM_BH04

Job Information

Client: Laing O'Rourke / Sydney Metro
Project: Central Station Main Works
Proj. No.: 21-27234
Sampler: T. Nham / J. Vickers
Date: 17/8/20
Round July 2020

Sampling Information

Purge Method: QED MP10
Sample Method: "
WQ Meter Type: YSI
Flow Cell: Y / N Pump Depth: 25 m
WLevel Meter Type: Dip / Fox / Int.Fce / Gge
Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information

SWL: 21.705 m Logic Check: /
Screen: From: / to: m Stick Up: m
NAPL Check: / Bore Diam.: 50 mm
Ref.datum: Well Cap Secure? Yes
Bore Depth: 33.71 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (µS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
11.42	0.5	21.44	1.69	408.9	6.28	59.6	21.0		light brown, turbid, no odour / sheen
11.45	1.5	21.48	1.55	412.3	6.03	58.7	21.0		"
11.48	3	21.49	1.28	423.6	5.94	55.5	21.0		"
11.52	4	21.49	1.02	426.8	5.92	53.5	21.0		SWL stable
11.55	5	21.49	0.98	433.0	5.91	50.0	21.0		Stable, Sampled

Field QA Checks:

Air bubbles in vials? Y (N) Any violent reactions? Y / (N)
Decontamination as per GHD procedure? (Y) N
Was sampling equipment pre-cleaned? (Y) / N
COC updated? (Y) N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottles, Metals + Fe filtered.

DUP = QC01

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: CSM_BH06

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 18/8/2020
- Round July 2020

Sampling Information
- Purge Method: QED MP0
- Sample Method: "
- WQ Meter Type: YSI
- Flow Cell: Y / N Pump Depth: 2T m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 20.480 m
- Screen: From: ..... to ..... m
- NAPL Check: .....
- Ref.datum: .....
- Bore Depth: 35.415 m
- Logic Check: .....
- Stick Up: ..... m
- Bore Diam.: 50 mm
- Well Cap Secure? Yes

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (Cu/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		stable	+/- 10%	+/- 3%	+/- 0.05 pH	+/- 10 mV	-		
11.16	0.5	21.54	6.75	884	6.15	-13.2	22.1		clear, cloudy, no odour no sheen
11.19	1	21.54	0.40	891	6.12	-17.5	22.2		"
11.22	1.5	21.54	0.32	891	6.10	-18.5	22.2		"
11.25	2.5	21.54	0.24	891	6.09	-19.6	22.2		"
11.28	3.5	21.54	0.25	891	6.09	-20.1	22.2		"
11.31	4.5	21.54	0.23	891	6.09	-19.2	22.2		Stable, Sampled

Field QA Checks:
- Air bubbles in vials? Y / (N)
- Any violent reactions? Y / (N)
- Decontamination as per GHD procedure? (Y) / N
- Was sampling equipment pre-cleaned? (Y) / N
- COC updated? (Y) / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 Lab, Metals + Fe2+

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: Csm_BH08

Job Information	Sampling Information	Bore Information
Client: Laing O'Rourke / Sydney Metro	Purge Method: MP10	SWL: 13.445 m
Project: Central Station Main Works	Sample Method: MP10	Screen: From: ..... to ..... m
Proj. No.: 21-27234	WQ Meter Type: YSI	NAPL Check: .....
Sampler: T. Nham / J. Vickers	Flow Cell: Y / N	Pump Depth: 22 m
Date: 13/8/2020	WLevel Meter Type:	Dip / Fox / Int.Fce / Gge
Round July 2020		Bore Depth: 34.95 m
		Logic Check: ✓
		Stick Up: ..... m
		Bore Diam.: 50 mm
		Ref.datum: .....
		Well Cap Secure? Y

Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (uS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
8.45	1	13.47	1.07	385.9	8.16	83.9	20.7		clear, no odour, no sheen
8.48	2	13.45	0.97	386.8	7.80	92.1	20.8		"
8.51	3	13.46	0.48	485.8	6.84	-41.2	20.8		"
8.54	4	13.46	0.42	499.9	6.61	-36.6	20.8		✓ SWL stable
8.57	5	13.46	0.38	507	6.50	-33.5	20.8		"
9.00	6	13.46	0.31	514	6.35	-29.5	20.8		"
9.03	7	13.46	0.29	520	6.27	-27.8	20.8		"
9.06	8	13.46	0.28	525	6.22	-27.7	20.8		"
9.09	9	13.46	0.27	533	6.18	-27.8	20.8		"
9.12	10	13.46	0.26	535	6.17	-28.2	20.8		stable, sampled

Field QA Checks:

Air bubbles in vials? Y / (N) Any violent reactions? Y / (N)
Decontamination as per GHD procedure? (Y) / N
Was sampling equipment pre-cleaned? (Y) / N
COC updated? (Y) / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottles, Metals + Fe^{2+} filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: CSM_BH095

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 18/8/2020
- Round July 2020

Sampling Information
- Purge Method: Peri
- Sample Method: Peri
- WQ Meter Type: YSI
- Flow Cell: Y / N Pump Depth: 6.5 m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 4.705 m Logic Check: .....
- Screen: From: ..... to ..... m Stick Up: ..... m
- NAPL Check: ..... Bore Diam.: 50 mm
- Ref.datum: ..... Well Cap Secure? Yes
- Bore Depth: 6.590 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (µS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		stable	+/- 10%	+/- 3%	+/- 0.05 pH	+/- 10 mV	-		
8.22	1	4.885	0.42	554	6.08	100.3	18.9		brown to orange, no odour, no sheen
8.25	2	4.965	0.22	563	5.84	92.2	18.9		low sediment load
8.28	3	5.04	0.19	566	5.77	81.5	19.1		"
8.31	4	5.125	0.20	564	5.76	78.5	19.1		"
8.34	5	5.17	0.18	565	5.77	71.0	19.2		stable, sampled

Field QA Checks:
- Air bubbles in vials? Y / N Any violent reactions? Y / N
- Decontamination as per GHD procedure? Y / N
- Was sampling equipment pre-cleaned? Y / N
- COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

2 bottles, metals + Fe2+ filtered

DUP = QC02

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: CSM_BH185

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 17/8/20
- Round July 2020

Sampling Information
- Purge Method: Peri
- Sample Method: Peri
- WQ Meter Type: YSI
- Flow Cell: Y / N Pump Depth:.....m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 3.775 m Logic Check: —
- Screen: From:—to— m Stick Up: — m
- NAPL Check:— Bore Diam.: 50 mm
- Ref.datum: — Well Cap Secure? Y
- Bore Depth: 9.90 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (uS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
12.08	1	4.04	0.69	2740	5.67	137.5	20.8		clear, no odour no sheen
12.11	2	4.08	0.44	270.8	5.53	157.6	20.8		"
12.14	3	4.12	0.42	270.8	5.49	162.1	20.8		"
12.17	4	4.16	0.41	270.9	5.48	164.1	20.9		Stable, sampled

Field QA Checks:
- Air bubbles in vials? Y / N Any violent reactions? Y / N
- Decontamination as per GHD procedure? Y / N
- Was sampling equipment pre-cleaned? Y / N
- COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottles, Metals + Fe 2+ filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: GASW_BH7

Job Information

Client: Laing O'Rourke / Sydney Metro
Project: Central Station Main Works
Proj. No.: 21-27234
Sampler: T. Nham / J. Vickers
Date: 17/8/10
Round July 2020

Sampling Information

Purge Method: —
Sample Method: DRY
WQ Meter Type: YSI
Flow Cell: Y / N Pump Depth:.....m
WLevel Meter Type: Dip / Fox / Int.Fce / Gge
Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information

SWL: DRY m Logic Check: —
Screen: From:.....to..... m Stick Up: Y m
NAPL Check:..... Bore Diam.: 50 mm
Ref.datum: — Well Cap Secure? Y
Bore Depth: 6.19 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (.....)	Elec.Cond (.....)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
	DRY								Dry

Field QA Checks:
Air bubbles in vials? Y / N Any violent reactions? Y / N
Decontamination as per GHD procedure? Y / N
Was sampling equipment pre-cleaned? Y / N
COC updated? Y / N

Parameters / Preservatives	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

DRY No sample

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: GASW_BH10

Job Information	Sampling Information	Bore Information
Client: Laing O'Rourke / Sydney Metro	**Purge Method:** QSample	**SWL:** 19.08 m — **Logic Check:** /
Project: Central Station Main Works	**Sample Method:** QSample	**Screen:** From: / to m — **Stick Up:** m
Proj. No.: 21-27234	**WQ Meter Type:** YSI	**NAPL Check:** / — **Bore Diam.:** 50 mm
Sampler: T. Nham / J. Vickers	**Flow Cell:** Y / N — **Pump Depth:** 27 m	**Ref.datum:** — **Well Cap Secure?** Yes
Date: 17/9/2020	**WLevel Meter Type:** Dip / Fox / Int.Fce / Gge	**Bore Depth:** 24.91 m
Round July 2020	**Field Filtered?** Y / N (filter vessel, disposable filter/syringe)	

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (µS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
8.51	1	20.06	0.50	1405	6.63	-159.9	19.5		grey, sulphuric odour, no sheen
8.55	2	20.78	0.31	1398	6.43	-164.2	19.6		"
9.00	3	21.27	0.30	1395	6.39	-166.9	19.6		"
9.06	4	21.54	0.29	1394	6.58	-166.3	19.8		Paras stable, sampled

Field QA Checks:

Air bubbles in vials? Y / (N) Any violent reactions? Y / (N)
Decontamination as per GHD procedure? (Y) / N
Was sampling equipment pre-cleaned? (Y) / N
COC updated? (Y) / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottles, Metals + Fe2 filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: GASW_BH11

Job Information

Client: Laing O'Rourke / Sydney Metro
Project: Central Station Main Works
Proj. No.: 21-27234
Sampler: T. Nham / J. Vickers
Date: 17/8/20
Round July 2020

Sampling Information

Purge Method: Peri
Sample Method: Peri
WQ Meter Type: YSI
Flow Cell: Y / N Pump Depth:.....m
WLevel Meter Type: Dip / Fox / Int.Fce / Gge
Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information

SWL: 7.195 m Logic Check: —
Screen: From:—to— m Stick Up: — m
NAPL Check:— Bore Diam.: 50 mm
Ref.datum: — Well Cap Secure?: Y
Bore Depth: 8.05 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (µS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
9.35	1	7.88	4.60	287.1	7.05	85.3	18.3		grey to brown, light sediment load,
9.38	2	7.96	3.68	282.1	6.61	100.2	18.4		no odour / sheen.
9.41	3	8.01	3.47	277.6	6.47	45.9	18.4		purged dry

Field QA Checks:

Air bubbles in vials? Y / (N) Any violent reactions? Y / (N)
Decontamination as per GHD procedure? (Y) / N
Was sampling equipment pre-cleaned? (Y) / N
COC updated? (Y) / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

6 bottles, Metals+Fe2+ filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: GASW_BH23

Job Information

Client: Laing O'Rourke / Sydney Metro
Project: Central Station Main Works
Proj. No.: 21-27234
Sampler: T. Nham / J. Vickers
Date: 17/8/20
Round July 2020

Sampling Information

Purge Method: Peri
Sample Method: Peri
WQ Meter Type: YSI
Flow Cell: Y / N Pump Depth: 3.9 m
WLevel Meter Type: Dip / Fox / Int.Fce / Gge
Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information

SWL: 3.515 m Logic Check: ✓
Screen: From: ——— to ——— m Stick Up: ✓ m
NAPL Check: ——— Bore Diam.: 50 mm
Ref.datum: ——— Well Cap Secure? ✓
Bore Depth: 3.91 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (.....)	Elec.Cond (.....)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
	Very little water, grab samples taken.								Black, strong hydrocarbon odour. No sheen. Becoming clean
									Low sml, sample taken

Field QA Checks:

Air bubbles in vials? Y / (N) Any violent reactions? Y / (N)
Decontamination as per GHD procedure? (Y) / N
Was sampling equipment pre-cleaned? (Y) / N
COC updated? (Y) / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

6 bottles, Metals + Ferr filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

BH

Purging and Sampling Record

Bore ID: GASW-25A

Job Information	Sampling Information	Bore Information
Client: Laing O'Rourke / Sydney Metro	Purge Method: Peri	SWL: 2.053 m — Logic Check: ✓
Project: Central Station Main Works	Sample Method: Peri	Screen: From:.....to..... m — Stick Up: ✓ m
Proj. No.: 21-27234	WQ Meter Type: YSI	NAPL Check: ✓ — Bore Diam.: 50 mm
Sampler: T. Nham / J. Vickers	Flow Cell: Y / N — Pump Depth: 2.9 m	Ref.datum: ✓ — Well Cap Secure? Y
Date: 7/8/20	WLevel Meter Type: Dip / Fox / Int.Fce / Gge	Bore Depth: 2.945 m
Round July 2020	Field Filtered? Y / N (filter vessel, disposable filter/syringe)	

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (.....)	Elec.Cond (.....)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
9:50	1	2.30	0.24	3805	7.06	-222.7	16.6		Dark grey, cloudy, sediment, HC odour.
	Very little water, grab sample taken								

Field QA Checks:

Air bubbles in vials? Y / N — Any violent reactions? Y / N

Decontamination as per GHD procedure? Y / N

Was sampling equipment pre-cleaned? Y / N

COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottles, Metals + Fe2+ filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: STT_BH047

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 4/8/20
- Round July 2020

Sampling Information
- Purge Method: Peri
- Sample Method: Peri
- WQ Meter Type: YSI
- Flow Cell: Y / N Pump Depth: 6.5 m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 4.02 m Logic Check: —
- Screen: From: — to — m Stick Up: — m
- NAPL Check: — Bore Diam.: 50 mm
- Ref.datum: — Well Cap Secure? Y
- Bore Depth: 6.96 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (µS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
11:23	1	4.56	2.45	391.7	6.88	102.0	19.8		Dark clouds / no odour / clear
11:27	2	5.19	2.54	390.1	6.97	96.1	19.7		"
11:31	3	5.35	2.50	390.2	6.99	90.2	19.7		"
11:36	4	5.67	2.45	390.3	7.03	89.5	19.7		"
11:40	5	5.97	2.36	391.2	7.07	86.3	19.8		"

Field QA Checks:
- Air bubbles in vials? Y / (N) Any violent reactions? Y / (N)
- Decontamination as per GHD procedure? (Y) / N
- Was sampling equipment pre-cleaned? (Y) / N
- COC updated? (Y) / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 Lable, Metals + Food Hazard

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: SKT_BH050

Job Information

Client: Laing O'Rourke / Sydney Metro
Project: Central Station Main Works
Proj. No.: 21-27234
Sampler: T. Nham / J. Vickers
Date: 19/8/20
Round July 2020

Sampling Information

Purge Method: Per
Sample Method: Per
WQ Meter Type: YSI
Flow Cell: Y / N Pump Depth: 27 m
WLevel Meter Type: Dip / Fox / Int.Fce / Gge

Bore Information

SWL: 2.47 m Logic Check: —
Screen: From: —— to —— m Stick Up: — m
NAPL Check: — Bore Diam.: 50 mm
Ref.datum: — Well Cap Secure? Y
Bore Depth: 2.785 m

Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (.....)	Elec.Cond (.....)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
	very little water, grab sample taken.								

Field QA Checks:

Air bubbles in vials? Y / N Any violent reactions? Y / N
Decontamination as per GHD procedure? Y / N
Was sampling equipment pre-cleaned? Y / N
COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

8 bottles, Metals + Fe 2+ filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: SRT_BH052

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 19/8/2020
- Round July 2020

Sampling Information
- Purge Method: peri
- Sample Method: Bail
- WQ Meter Type: YSI
- Flow Cell: Y / N — Pump Depth: 7.8 m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 5.965 m — Logic Check: /
- Screen: From: ..... to ..... m — Stick Up: ..... m
- NAPL Check: / — Bore Diam.: 50 mm
- Ref.datum: ..... — Well Cap Secure? Ye
- Bore Depth: 7.925 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (Melt.....)	Elec.Cond (.....)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
10:28	1	6.17	5.31	407.1	6.66	90.1	19.9		Brown cloudy, no odour/sheen
10:34	2	6.38	4.53	401.4	6.57	99.1	20.0		"
10:39	3	6.52	4.98	388.6	6.55	100.5	20.0		"
10:42	4	6.62	5.01	367.4	6.50	111.1	20.0		"
10:46	5	6.86	5.70	307.4	6.08	148.8	20.0		"
10:49	6	7.01	5.50	298.3	6.00	155.2	20.0		"
10:52	7	7.18	5.38	272.3	5.99	159.8	20.0		"

Field QA Checks:
- Air bubbles in vials? Y / (N) Any violent reactions? Y (N)
- Decontamination as per GHD procedure? (Y) / N
- Was sampling equipment pre-cleaned? (Y) / N
- COC updated? (Y) / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

MS 9 L bottles, Metals + Feo filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: SMT_BH059

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 19/8/20
- Round July 2020

Sampling Information
- Purge Method: Peri
- Sample Method: Peri
- WQ Meter Type: YSI
- Flow Cell: Y / N Pump Depth: 5.5 m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 5.170 m Logic Check: ~
- Screen: From: ~ to ..... m Stick Up: ~ m
- NAPL Check: ~ Bore Diam.: 50 mm
- Ref.datum: ~ Well Cap Secure? Y
- Bore Depth: 6.07 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (Mg/L)	Elec.Cond (µS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
12:06	—	—	4.15	378.4	7.01	103.7	20.0		Clear, no odour/sheen
	Very little water, post sample taken.								

Field QA Checks:
- Air bubbles in vials? Y / N Any violent reactions? Y / N
- Decontamination as per GHD procedure? Y / N
- Was sampling equipment pre-cleaned? Y / N
- COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottles, Metals + Fe2 filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: CSM_BH02

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 14/9/2020
- Round: September 2020

Sampling Information
- Purge Method: QED mp10
- Sample Method: 4
- WQ Meter Type: YSI
- Flow Cell: Y / N
- Pump Depth: 29 m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 20.025 m
- Logic Check: ✓
- Screen: From: ..... to ..... m
- Stick Up: ..... m
- NAPL Check: /
- Bore Diam.: 50 mm
- Ref.datum: /
- Well Cap Secure? Yes
- Bore Depth: 33.03 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (Mg/L)	Elec.Cond (µS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
9:52	1	20.28	1.09	719	6.58	-3.5	20.3		Light, clear, no odour/sheen
9:55	2	20.45	0.49	728	6.61	-17.6	20.2		"
9.58	3	20.494	0.36	729	6.64	-22.9	20.2		"
10:01	4	20.544	0.34	730	6.63	-21.3	20.2		"
10:04	5	20.580	0.32	727	6.61	-17.7	20.3		Stable - Sampled

Field QA Checks:
- Air bubbles in vials? Y / N Any violent reactions? Y / N
- Decontamination as per GHD procedure? Y / N
- Was sampling equipment pre-cleaned? Y / N
- COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 + 5 bottle, Metals + Fe2+ Filtered DUP = QC02

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: CSM_BH04

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 14/9/2020
- Round: September 2020

Sampling Information
- Purge Method: Peri
- Sample Method: Peri
- WQ Meter Type: YSI
- Flow Cell: Y / N Pump Depth:.....m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 21.10 m Logic Check: —
- Screen: From:—to..... m Stick Up: — m
- NAPL Check: — Bore Diam.: 50 mm
- Ref.datum: — Well Cap Secure?: Y
- Bore Depth: 33.675 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (µS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		stable	+/- 10%	+/- 3%	+/- 0.05 pH	+/- 10 mV	-		
8.57	2	~~0.48~~ 21.50	0.48	462.0	5.64	97.5	20.8		mild turbidity, brown, n odour no sheen
9.00	3	21.45	0.57	463.1	5.63	98.0	20.7		adjusted pump speed lower
9.03	4	21.43	0.64	472.9	5.72	86.1	20.7		
9.06	5	21.42	0.73	474.2	5.70	86.2	20.7		
9:09	6	21.41	0.85	478.3	5.62	94.3	20.7		
9:12	7	21.41	0.89	481.5	5.59	96.2	20.8		
9:15	8	21.41	0.50	486.4	5.59	94.6	20.8		

Field QA Checks:
- Air bubbles in vials? Y / N Any violent reactions? Y / N
- Decontamination as per GHD procedure? Y / N
- Was sampling equipment pre-cleaned? Y / N
- COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottles, Metals + Ecoli filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: CSM-BH06

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 14/9/2020
- Round: September 2020

Sampling Information
- Purge Method: QED MP10
- Sample Method: U
- WQ Meter Type: YSI
- Flow Cell: Y / N
- Pump Depth: 28 m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 20.490 m
- Screen: From: ..... to ..... m
- NAPL Check: .....
- Ref.datum: .....
- Bore Depth: 35.26 m
- Logic Check: .....
- Stick Up: ..... m
- Bore Diam.: 50 mm
- Well Cap Secure? Yes

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (uS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		stable	+/- 10%	+/- 3%	+/- 0.05 pH	+/- 10 mV	-		
11.42	2	20.54	0.30	845	6.26	-11.0	22.7		Slowy slightly turbid, no odour, no sheen
11.45	3	20.57	0.24	846	6.24	-11.6	22.6		"
11.49	4	20.57	0.22	836	6.23	-13.7	22.2		SWL stable
11:52	5	20.57	0.26	836	6.23	-13.7	22.2		
11:55	6	20.57	0.25	837	6.22	-13.7	22.2		"

Field QA Checks:
- Air bubbles in vials? Y / N Any violent reactions? Y / N
- Decontamination as per GHD procedure? Y / N
- Was sampling equipment pre-cleaned? Y / N
- COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottles, metals + Fe2+ filtered.

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: CSMBH08

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 14/9/2020
- Round: September 2020

Sampling Information
- Purge Method: QED MP10
- Sample Method: "
- WQ Meter Type: YSI
- Flow Cell: Y / N — Pump Depth: 21 m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 13.467 m
- Screen: From: ..... to ..... m
- NAPL Check: .....
- Ref.datum: .....
- Bore Depth: 34.52 m
- Logic Check: .....
- Stick Up: ..... m
- Bore Diam.: 50 mm
- Well Cap Secure? Yes

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (u/c)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		stable	+/- 10%	+/- 3%	+/- 0.05 pH	+/- 10 mV	-		
7:42	1	13.48	0.33	535	6.70	5.0	20.6		Clear, no odour/flow
7:45	2	13.48	0.25	540	6.67	-5.2	20.6		"
7:48	3	13.48	0.20	551	6.62	-14.6	20.7		"
7:51	4	13.48	0.21	552	6.60	-19.4	20.7		"
7:54	5	13.48	0.17	550	6.58	-25.5	20.7		"
7:57	6	13.48	0.15	549	6.57	-30.2	20.7		"
8:00	7	13.48	0.15	548	6.57	-32.5	20.7		"
8203	8	13.48	0.14	548	6.57	-34.5	20.7		"

Field QA Checks:
- Air bubbles in vials? Y / N
- Any violent reactions? Y / N
- Decontamination as per GHD procedure? Y / N
- Was sampling equipment pre-cleaned? Y / N
- COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 + 5 bottles, Metals + Fe filtered DUP = QC01

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: CSM_BH045

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 16/9/20
- Round September 2020

Sampling Information
- Purge Method: Peri
- Sample Method: Peri
- WQ Meter Type: YSI
- Flow Cell: Y / N Pump Depth: 6 m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 4.92 m Logic Check: —
- Screen: From: — to — m Stick Up: — m
- NAPL Check: — Bore Diam.: 50 mm
- Ref.datum: — Well Cap Secure? Y
- Bore Depth: 6.59 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (uS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
9.15	1	5.16	0.21	432.9	5.98	76.9	19.7		clear - slightly turbid, light brown,
9.18	2	5.28	0.25	444.0	5.93	68.4	19.8		no odour, no sheen
9.21	3	5.36	0.16	449.6	5.95	52.3	19.8		"
9.24	4	5.42	0.15	451.6	5.97	45.4	19.8		"
9.27	5	5.495	0.15	453.8	5.98	~~53.3~~ 45.3	19.8		stable, sampled

Field QA Checks:
- Air bubbles in vials? Y / (N) Any violent reactions? Y / (N)
- Decontamination as per GHD procedure? (Y) / N
- Was sampling equipment pre-cleaned? (Y) / N
- COC updated? (Y) / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottles, Metals + ED filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: CSM-BH105

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 15/9/2020
- Round September 2020

Sampling Information
- Purge Method: Peri
- Sample Method: Peri
- WQ Meter Type: YSI
- Flow Cell: Y / N Pump Depth: 9 m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 4.120 m Logic Check: .....
- Screen: From: ..... to ..... m Stick Up: ..... m
- NAPL Check: ..... Bore Diam.: 50 mm
- Ref.datum: ..... Well Cap Secure? Yes
- Bore Depth: 9.84 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (uS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
11:35	1	4.36	0.42	253.6	5.50	209.0	20.7		Dam dark, no odour/sheen
11:42	2	4.40	0.40	251.5	5.35	217.6	20.6		"
11:45	3	4.45	0.35	252.2	5.35	221.5	20.6		"
11:48	4	4.50	0.31	252.9	5.33	224.7	20.7		"
11:51	5	4.55	0.30	253.7	5.31	226.7	20.7		"
11:55	6	4.58	0.28	255.2	5.32	227.8	20.7		"
11:59	7	4.61	0.29	256.3	5.33	228.0	20.7		"

Field QA Checks:
- Air bubbles in vials? Y / N Any violent reactions? Y / N
- Decontamination as per GHD procedure? Y / N
- Was sampling equipment pre-cleaned? Y / N
- COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottles, Metals + EDD filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: CSMBH115

Job Information

Client: Laing O'Rourke / Sydney Metro
Project: Central Station Main Works
Proj. No.: 21-27234
Sampler: T. Nham / J. Vickers
Date: 15/9/2020
Round September 2020

Sampling Information

Purge Method:
Sample Method:
WQ Meter Type: YSI
Flow Cell: Y / N Pump Depth:.....m
WLevel Meter Type: Dip / Fox / Int.Fce / Gge
Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information

SWL: DRY m Logic Check: .....
Screen: From:.....to..... m Stick Up: ..... m
NAPL Check:..... Bore Diam.: 50 mm
Ref.datum: ..... Well Cap Secure? Y
Bore Depth: 5.685 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (.....)	Elec.Cond (.....)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
	DRY								

Field QA Checks:

Air bubbles in vials? Y / N Any violent reactions? Y / N
Decontamination as per GHD procedure? Y / N
Was sampling equipment pre-cleaned? Y / N
COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: GASV_BH7

Job Information

Client: Laing O'Rourke / Sydney Metro
Project: Central Station Main Works
Proj. No.: 21-27234
Sampler: T. Nham / J. Vickers
Date: 15/9/2020
Round September 2020

Sampling Information

Purge Method: —
Sample Method: —
WQ Meter Type: YSI
Flow Cell: Y / N Pump Depth:.....m
WLevel Meter Type: Dip / Fox / Int.Fce / Gge
Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information

SWL: DRY m
Screen: From:..... to..... m
NAPL Check:.....
Ref.datum:.....
Bore Depth: 6.20 m
Logic Check: .....
Stick Up: ..... m
Bore Diam.: 50 mm
Well Cap Secure? Yes

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (.....)	Elec.Cond (.....)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
	DRY								

Field QA Checks:

Air bubbles in vials? Y / N Any violent reactions? Y / N
Decontamination as per GHD procedure? Y / N
Was sampling equipment pre-cleaned? Y / N
COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: GASW-BH10

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 14/9/2020
- Round: September 2020

Sampling Information
- Purge Method: QED MPTO
- Sample Method: "
- WQ Meter Type: YSI
- Flow Cell: Y / N
- Pump Depth: 24 m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 19.102 m
- Logic Check: /
- Screen: From: ..... to ..... m
- Stick Up: ..... m
- NAPL Check: /
- Bore Diam.: 50 mm
- Ref.datum: /
- Well Cap Secure? Y
- Bore Depth: 24.87 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (µS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		stable	+/- 10%	+/- 3%	+/- 0.05 pH	+/- 10 mV	-		
10:46	1	19.85	0.50	1123	6.48	-93.1	20.0		Grey clouds, organic odour / no sheen
10:49	2	20.26	0.40	1118	6.48	-98.4	19.9		"
10:51	3	20.05	0.37	1117	6.48	-99.6	19.9		"
10:54	4	20.90	0.33	1117	6.48	-104.0	19.8		"
10:57	5	21.45	0.35	1118	6.49	-106.7	19.8		"
11:01	6	21.88	0.44	1122	6.49	-108.5	19.8		"

Field QA Checks:
- Air bubbles in vials? Y / N Any violent reactions? Y / N
- Decontamination as per GHD procedure? Y / N
- Was sampling equipment pre-cleaned? Y / N
- COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottles, Metals + PFAS filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: GASVL_BH11

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 16/9/2020
- Round: September 2020

Sampling Information
- Purge Method: Pera
- Sample Method: Peri
- WQ Meter Type: YSI
- Flow Cell: Y / N Pump Depth: 8 m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 7.225 m Logic Check: .....
- Screen: From: ..... to ..... m Stick Up: ..... m
- NAPL Check: ..... Bore Diam.: 50 mm
- Ref.datum: ..... Well Cap Secure? Yes
- Bore Depth: 8.05 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (.....)	Elec.Cond (.....)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
			3.16	265.8	5.91	131.1	18.8		Warm cloudy, no darkness
	Very little water, sample taken.								

Field QA Checks:
- Air bubbles in vials? Y / N Any violent reactions? Y / N
- Decontamination as per GHD procedure? Y / N
- Was sampling equipment pre-cleaned? Y / N
- COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottles, Metals + Fes filtered.

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: GASL_BH23

Job Information

Client: Laing O'Rourke / Sydney Metro
Project: Central Station Main Works
Proj. No.: 21-27234
Sampler: T. Nham / J. Vickers
Date: 15/9/20
Round September 2020

Sampling Information

Purge Method: Peri
Sample Method:
WQ Meter Type: YSI
Flow Cell: Y / N Pump Depth: 3.5 m
WLevel Meter Type: Dip / Fox / Int.Fce / Gge
Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information

SWL: 3.65J m Logic Check: ✓
Screen: From: ✓ to: ..... m Stick Up: ✓ m
NAPL Check: ✓ Bore Diam.: 50 mm
Ref.datum: ✓ Well Cap Secure? .....
Bore Depth: 3.91 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (.....)	Elec.Cond (.....)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
	Dry	little	water,	sample	taken				

Field QA Checks:

Air bubbles in vials? Y / N Any violent reactions? Y / N
Decontamination as per GHD procedure? Y / N
Was sampling equipment pre-cleaned? Y / N
COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

8 bottles, Metals + field filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: GASV_BH25A

Job Information

Client: Laing O'Rourke / Sydney Metro
Project: Central Station Main Works
Proj. No.: 21-27234
Sampler: T. Nham / J. Vickers
Date: 16/9/2020
Round September 2020

Sampling Information

Purge Method: Peri
Sample Method: Peri
WQ Meter Type: YSI
Flow Cell: Y / N Pump Depth: 2.5 m
WLevel Meter Type: Dip / Fox / Int.Fce / Gge
Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information

SWL: 2.290 m Logic Check: .....
Screen: From: ..... to ..... m Stick Up: ..... m
NAPL Check: ..... Bore Diam.: 50 mm
Ref.datum: ..... Well Cap Secure? Yes
Bore Depth: 2.950 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (.....)	Elec.Cond (.....)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
	by	[illegible] water,	sample	taken					

Field QA Checks:

Air bubbles in vials? Y / N Any violent reactions? Y / N
Decontamination as per GHD procedure? Y / N
Was sampling equipment pre-cleaned? Y / N
COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottles, Metals + Fe2 filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: SRT_BH047

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 15/9/2020
- Round September 2020

Sampling Information
- Purge Method: Peri
- Sample Method: Peri
- WQ Meter Type: YSI
- Flow Cell: Y / N Pump Depth: 6.8 m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 4.965 m Logic Check: /
- Screen: From: / to: m Stick Up: / m
- NAPL Check: / Bore Diam.: 50 mm
- Ref.datum: / Well Cap Secure? Yes
- Bore Depth: 6.54 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (µS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
9.41	1	5.405	1.81	371.4	7.29	126.4	19.6		grey, cloudy, turbidity hi, odour no sheen
9.44	2	5.775	1.74	369.9	7.35	123.8	19.6		"
9.47	3	5.98	1.79	368.5	7.38	122.4	19.5		"
9.50	3	6.315	1.80	368.0	7.40	119.9	19.5		stable, sampled

Field QA Checks:
- Air bubbles in vials? Y / N Any violent reactions? Y / N
- Decontamination as per GHD procedure? Y / N
- Was sampling equipment pre-cleaned? Y / N
- COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottles, Metal + Fe* filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: SKTDN050

Job Information

Client: Laing O'Rourke / Sydney Metro
Project: Central Station Main Works
Proj. No.: 21-27234
Sampler: T. Nham / J. Vickers
Date: 15/9/2020
Round September 2020

Sampling Information

Purge Method: —
Sample Method: —
WQ Meter Type: YSI
Flow Cell: Y / N Pump Depth:.....m
WLevel Meter Type: Dip / Fox / Int.Fce / Gge
Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information

SWL: DRY m
Screen: From:.....to..... m
NAPL Check:.....
Ref.datum:.....
Bore Depth: 2.775 m
Logic Check: /
Stick Up: / m
Bore Diam.: 50 mm
Well Cap Secure? Y/N

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (.....)	Elec.Cond (.....)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
	DRY								
	/								

Field QA Checks:

Air bubbles in vials? Y / N Any violent reactions? Y / N
Decontamination as per GHD procedure? Y / N
Was sampling equipment pre-cleaned? Y / N
COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: SRTBH052

Job Information
- Client: Laing O'Rourke / Sydney Metro
- Project: Central Station Main Works
- Proj. No.: 21-27234
- Sampler: T. Nham / J. Vickers
- Date: 15/9/2020
- Round September 2020

Sampling Information
- Purge Method: Peri
- Sample Method: Peri
- WQ Meter Type: YSI
- Flow Cell: Y / N Pump Depth: 7.8 m
- WLevel Meter Type: Dip / Fox / Int.Fce / Gge
- Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information
- SWL: 6.295 m
- Screen: From:.....to..... m
- NAPL Check:.....
- Ref.datum:.....
- Bore Depth: 7.915 m
- Logic Check: .....
- Stick Up: ..... m
- Bore Diam.: 50 mm
- Well Cap Secure?: Yes

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (Cuscm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
8.43	1	6.505	2.18	327.8	6.36	148.3	19.5		clear to slightly cloudy, no odour no sheen
8.46	2	6.604	2.00	323.7	6.18	156.2	19.6		"
8.49	3	6.77	2.01	328.2	6.21	157.3	19.6		"
8.52	4	6.851	2.01	329.9	6.22	158.3	19.7		"
9.02	5	7.065	2.24	328.5	6.24	159.0	19.7		lowered pump in well
9.05	6	7.26	2.16	330.6	6.23	160.1	19.8		
9.08	7	7.375	2.23	331.0	6.22	160.5	19.8		

Field QA Checks:
- Air bubbles in vials? Y / N Any violent reactions? Y / N
- Decontamination as per GHD procedure? Y / N
- Was sampling equipment pre-cleaned? Y / N
- COC updated? Y / N

Parameters / Preservatives	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottles, Metals + Fe2+ filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Purging and Sampling Record

Bore ID: SRLBH059

Job Information

Client: Laing O'Rourke / Sydney Metro
Project: Central Station Main Works
Proj. No.: 21-27234
Sampler: T. Nham / J. Vickers
Date: 15/9/2020
Round September 2020

Sampling Information

Purge Method: Peri
Sample Method: Peri
WQ Meter Type: YSI
Flow Cell: Y / N Pump Depth: 6 m
WLevel Meter Type: Dip / Fox / Int.Fce / Gge
Field Filtered? Y / N (filter vessel, disposable filter/syringe)

Bore Information

SWL: 5.365 m Logic Check: /
Screen: From: / to ..... m Stick Up: ..... m
NAPL Check: / Bore Diam.: 50 mm
Ref.datum: ..... Well Cap Secure? Yes
Bore Depth: 6.06 m

Time (.....)	Volume (L)	SWL mbtoc	Dis.Oxygen (mg/L)	Elec.Cond (µS/cm)	pH (pH units)	Ox-Red Pt. (± mV)	Temp (°C)	(.....)	Comment: Colour, turbidity, sediment load, sheen, odour, flow rate, purged dry?
Stable when (3 consecutive readings):		*stable*	*+/- 10%*	*+/- 3%*	*+/- 0.05 pH*	*+/- 10 mV*	-		
			2.88	351.3	7.17	133.9	19.6		Brown cloudy, no odour, flow
		log into water, sample taken.							

Field QA Checks:

Air bubbles in vials? Y / N Any violent reactions? Y / N
Decontamination as per GHD procedure? Y / N
Was sampling equipment pre-cleaned? Y / N
COC updated? Y / N

Parameters	BTEX	TPH	PAH	CHC	PCB	OCP	OPP	Tot. Metal	Biol.				
Preservatives													

Comment: Duplicate samples collected, bottles used, access, condition of headworks etc

9 bottles, metal + Fe ++ filtered

Purge Volumes

Casing Int. Dia (mm)	50	100	150
Vol (L/m of casing)	2.0	7.9	17.7

*Double for gravel pack

Appendix G
Laboratory analytical reports

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☑ **Sydney**
Unit F3 - 6 Building F, 16 Mars Road, Lane Cove
Phone: +612 9900 8400
Email: enviro.syd@mgtlabmark.com.au

☐ **Brisbane**
Unit 1-21 Smallwood Place, Murrarie
Phone: +617 3902 4600
Email: enviro.bris@mgtlabmark.com.au

☐ **Melbourne**
2 Kingston Town Close, Oakleigh, VIC 3166
Phone: +613 8564 5000 Fax: +613 8564 5090
Email: enquiries.melb@mgtlabmark.com.au

CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name : GHD Pty Ltd, Sydney
Office Address : Level 15, 133 Castlereagh Street, Sydney NSW 2000
Special Directions & Comments :
Eurofins | mgt DI water batch number:

Contact Name : Terry Nham
Project Manager : Henry Luo
Email for results : terry.nham@ghd.com henry.luo@ghd.com

Purchase Order :
PROJECT Number : 21-27234
PROJECT Name : Central

COC Number :
Eurofins | mgt quote ID : GHD Rates 2020
Data output format: ESDAT

Analytes

	Sample ID	Date	Matrix	TRH, BTEXN, 8 Metals (Dissolved) (Suite B6)	PAH - Trace LOR	Phenols	OCP, OPP, PCB (Suite B15)	TRH (with Silica Gel Cleanup)	Cyanide - Trace Level (<0.004 mg/L)	Ammonia	Major Anions and Cations		Ferrous Iron	Manganese	pH	TDS	TSS		TRH C6-C10 / BTEX	8 Metals (Total)					
1	CSM_BH02	14/4	Water	X	X	X	X	X	X	X	X		X	X	X	X	X								
2	CSM_BH04	14/4	Water	X	X	X	X	X	X	X	X		X	X	X	X	X								
3	CSM_BH06	14/4	Water	X	X	X	X	X	X	X	X		X	X	X	X	X								
4	CSM_BH08	14/4	Water	X	X	X	X	X	X	X	X		X	X	X	X	X								
5	CSM_BH09S	16/4	Water	X	X	X	X	X	X	X	X		X	X	X	X	X								
6	CSM_BH10S	15/4	Water	X	X	X	X	X	X	X	X		X	X	X	X	X								
7	SRT_BH047	15/4	Water	X	X	X	X	X	X	X	X		X	X	X	X	X								
8	SRT_BH052	15/4	Water	X	X	X	X	X	X	X	X		X	X	X	X	X								
9	SRT_BH059	15/4	Water	X	X	X	X	X	X	X	X		X	X	X	X	X								
10	~~GASW_BH7~~	~~16/4~~	~~Water~~	~~X~~	~~X~~	~~X~~		~~X~~	~~X~~	~~X~~	~~X~~		~~X~~	~~X~~	~~X~~	~~X~~	~~X~~								
11	GASW_BH10	14/4	Water	X	X	X		X	X	X	X		X	X	X	X	X								
12	GASW_BH11	16/4	Water	X	X	X		X	X	X	X		X	X	X	X	X								
13	GASW_BH23	16/4	Water	X	X	X		X	X	X	X		X	X	X	X	X								
14	GASW_BH25a	16/4	Water	X	X	X		X	X	X	X		X	X	X	X	X								
15	~~QC01~~	~~14/4~~	~~Water~~	~~PLEASE SEND TO ALS WITH ATTACHED COC~~																					
16	QC02	15/4	Water	X	X																				

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

	500P	250P	60P	1LA	40mL vial	200mL A	Jar	Bag	Sample comments:
1	1		4		2	2			
2	1		4		2	2			
3	1		4		2	2			
4	1		4		2	2			
5	1		4		2	2			
6	1		4		2	2			
7	1		4		2	2			
8	1		4		2	2			
9	1		4		2	2			
10	1		4		2	2			
11	~~1~~		~~4~~		~~2~~	~~2~~			
12	1		4		2	2			
13	1		4		2	2			
14	1		4		2	2			
15	~~1~~		4		2	~~2~~ 1			
16	~~1~~		~~4~~		~~2~~	~~2~~			
	1		4		2	2			

Relinquished By: Terry Nham - GHD
Date & Time : 16/4/2020
Signature:

Laboratory Staff
Received By: Anson Lee
Date & Time : 16/4 , 1:42PM
Signature:

Turn around time
1 DAY ☐ 2 DAY ☐ 3 DAY ☐
5 DAY ☑ 10 DAY ☐ Other:

Method Of Shipment
☐ Courier
☑ Hand Delivered
☐ Postal
Courier Consignment # :

Temperature on arrival: 8.00 °C

Report number: # 714027

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☑ **Sydney**
Unit F3 - 6 Building F, 16 Mars Road, Lane Cove
Phone: +612 9900 8400
Email: enviro.syd@mgtlabmark.com.au

☐ **Brisbane**
Unit 1-21 Smallwood Place, Murrarie
Phone: +617 3902 4600
Email: enviro.bris@mgtlabmark.com.au

☐ **Melbourne**
2 Kingston Town Close, Oakleigh, VIC 3166
Phone: +613 8564 5000 Fax: +613 8564 5090
Email: enquiries.melb@mgtlabmark.com.au

CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name : GHD Pty Ltd, Sydney	Contact Name : Terry Nham	Purchase Order :	COC Number :
Office Address :	Project Manager : Henry Luo	PROJECT Number : 21-27234	Eurofins | mgt quote ID : GHD Rates 2020
Level 15, 133 Castlereagh Street, Sydney NSW 2000	Email for results : terry.nham@ghd.com henry.luo@ghd.com	PROJECT Name : Central	Data output format: ESDAT

Special Directions & Comments :

Eurofins | mgt DI water batch number:

Analytes

	Sample ID	Date	Matrix	TRH, BTEXN, 8 Metals (Dissolved) (Suite B6)	PAH - Trace LOR	Phenols	OCP, OPP, PCB (Suite B15)	TRH (with Silica Gel Cleanup)	Cyanide - Trace Level (<0.004 mg/L)	Ammonia	Major Anions and Cations		Ferrous Iron	Manganese	pH	TDS	TSS		TRH C6-C10 / BTEX	8 Metals (Total)					
1	RB01	15/4	Water																	X					
2	Trip Blank	14/4	Water																X						
3	Trip Spike	14/4	Water																X						
4	SRT_BH050	15/4	Water	X	X	X	X	X	X	X	X		X	X	X	X	X								
5	SRT_BH060	15/4	Water	X	X	X	X	X	X	X	X		X	X	X	X	X								
6																									
7																									
8																									
9																									
10																									
11																									
12																									
13																									
14																									
15																									
16																									

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

	500P	250P	60P	1LA	40mL vial	200mL A	Jar	Bag	Sample comments:
1			1						
2					2				
3					2				
4	1		4		2	2			
5	1		4		2	1			
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									

Laboratory Staff

Relinquished By: Terry Nham - GHD
Date & Time : 16/4/2020
Signature:

Received By:
Date & Time :
Signature:

Turn around time

1 DAY ☐ 2 DAY ☐ 3 DAY ☐
5 DAY ☑ 10 DAY ☐ Other:

Method Of Shipment

☐ Courier
☑ Hand Delivered
☐ Postal
Courier Consignment # :

Temperature on arrival:

Report number:

eurofins | Environment Testing

Melbourne
6 Monterey Road
Dandenong South Vic 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com web : www.eurofins.com.au

Sample Receipt Advice

Company name:	**GHD Pty Ltd NSW**
Contact name:	Henry Luo
Project name:	CENTRAL
Project ID:	21-27234
COC number:	Not provided
Turn around time:	5 Day
Date/Time received:	Apr 16, 2020 1:42 PM
Eurofins reference:	**714027**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ Sample Temperature of a random sample selected from the batch as recorded by Eurofins Sample Receipt : 8 degrees Celsius.

☑ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☑ Appropriately preserved sample containers have been used.

☑ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Appropriate sample containers have been used.

☑ Sample containers for volatile analysis received with zero headspace.

☒ Split sample sent to requested external lab.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Alena Bounkeua on Phone : or by e.mail: AlenaBounkeua@eurofins.com

Results will be delivered electronically via e.mail to Henry Luo - henry.luo@ghd.com.

Note: A copy of these results will also be delivered to the general GHD Pty Ltd NSW email address.

eurofins | Environment Testing

ABN – 50 005 085 521 web : www.eurofins.com.au e.mail : EnviroSales@eurofins.com

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: GHD Pty Ltd NSW
Address: Level 15, 133 Castlereagh Street
Sydney
NSW 2000

Project Name: CENTRAL
Project ID: 21-27234

Order No.:
Report #: 714027
Phone: 02 9239 7100
Fax: 02 9239 7199

Received: Apr 16, 2020 1:42 PM
Due: Apr 23, 2020
Priority: 5 Day
Contact Name: Henry Luo

Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail						Ammonia (as N)	Cyanide (total)	Ferrous Iron - Fe2+	Manganese (filtered)	pH (at 25°C)	Total Suspended Solids Dried at 103–105°C	Metals M8	Phenols (IWRG 621)	Eurofins | mgt Suite B15	Major Anions	Major Cations	TRH (after Silica Gel cleanup)	Eurofins | mgt Suite B6 (filtered metals)	BTEXN and Volatile TRH	Polycyclic Aromatic Hydrocarbons (Trace level)	Total Dissolved Solids Dried at 180°C ± 2°C
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217																		X	X		
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
External Laboratory																					
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																
1	CSM_BH02	Apr 14, 2020		Water	S20-Ap22623		X	X	X	X	X		X	X	X	X	X	X		X	X
2	CSM_BH04	Apr 14, 2020		Water	S20-Ap22624		X	X	X	X	X		X	X	X	X	X	X		X	X
3	CSM_BH06	Apr 14, 2020		Water	S20-Ap22625		X	X	X	X	X		X	X	X	X	X	X		X	X
4	CSM_BH08	Apr 14, 2020		Water	S20-Ap22626		X	X	X	X	X		X	X	X	X	X	X		X	X
5	CSM_BH09S	Apr 16, 2020		Water	S20-Ap22627		X	X	X	X	X		X	X	X	X	X	X		X	X
6	CSM_BH10S	Apr 15, 2020		Water	S20-Ap22628		X	X	X	X	X		X	X	X	X	X	X		X	X
7	SRT_BH047	Apr 15, 2020		Water	S20-Ap22629		X	X	X	X	X		X	X	X	X	X	X		X	X
8	SRT_BH052	Apr 15, 2020		Water	S20-Ap22630		X	X	X	X	X		X	X	X	X	X	X		X	X
9	SRT_BH059	Apr 15, 2020		Water	S20-Ap22631		X	X	X	X	X		X	X	X	X	X	X		X	X
10	GASW_BH10	Apr 14, 2020		Water	S20-Ap22632		X	X	X	X	X		X		X	X	X	X		X	X

eurofins | Environment Testing

ABN – 50 005 085 521 web : www.eurofins.com.au e.mail : EnviroSales@eurofins.com

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: GHD Pty Ltd NSW
Address: Level 15, 133 Castlereagh Street
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Sample Detail						Ammonia (as N)	Cyanide (total)	Ferrous Iron - Fe2+	Manganese (filtered)	pH (at 25°C)	Total Suspended Solids Dried at 103–105°C	Metals M8	Phenols (IWRG 621)	Eurofins | mgt Suite B15	Major Anions	Major Cations	TRH (after Silica Gel cleanup)	Eurofins | mgt Suite B6 (filtered metals)	BTEXN and Volatile TRH	Polycyclic Aromatic Hydrocarbons (Trace level)	Total Dissolved Solids Dried at 180°C ± 2°C
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217																		X	X		
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
11	GASW_BH11	Apr 16, 2020		Water	S20-Ap22633		X	X	X	X	X		X		X	X	X	X		X	X
12	GASW_BH23	Apr 16, 2020		Water	S20-Ap22634	X	X	X	X				X				X	X		X	
13	GASW_BH25A	Apr 16, 2020		Water	S20-Ap22635		X	X	X	X	X		X		X	X	X	X		X	X
14	SRT_BH050	Apr 15, 2020		Water	S20-Ap22636		X	X	X	X	X		X	X	X	X	X	X		X	X
15	SRT_BH060	Apr 15, 2020		Water	S20-Ap22637		X	X	X	X	X		X	X	X	X	X	X		X	X
16	QC02	Apr 15, 2020		Water	S20-Ap22638													X		X	
17	RB01	Apr 15, 2020		Water	S20-Ap22639							X									
18	TRIP BLANK	Apr 14, 2020		Water	S20-Ap22640														X		
19	TRIP SPIKE	Apr 14, 2020		Water	S20-Ap22641														X		
Test Counts						1	15	15	15	14	14	1	15	11	14	14	15	16	2	16	14

GHD Pty Ltd NSW
Level 15, 133 Castlereagh Street
Sydney
NSW 2000

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Attention: **Henry Luo**

Report **714027-W**
Project name CENTRAL
Project ID 21-27234
Received Date Apr 16, 2020

Client Sample ID			**CSM_BH02**	**CSM_BH04**	**CSM_BH06**	**CSM_BH08**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**S20-Ap22623**	**S20-Ap22624**	**S20-Ap22625**	**S20-Ap22626**
Date Sampled			**Apr 14, 2020**	**Apr 14, 2020**	**Apr 14, 2020**	**Apr 14, 2020**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	71	104	102	106
Organochlorine Pesticides						
Chlordanes - Total	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
4.4'-DDD	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
4.4'-DDE	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
4.4'-DDT	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
a-BHC	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Aldrin	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
b-BHC	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
d-BHC	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Dieldrin	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Endosulfan I	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Endosulfan II	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Endosulfan sulphate	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001

Client Sample ID			CSM_BH02	CSM_BH04	CSM_BH06	CSM_BH08
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Ap22623	S20-Ap22624	S20-Ap22625	S20-Ap22626
Date Sampled			Apr 14, 2020	Apr 14, 2020	Apr 14, 2020	Apr 14, 2020
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Endrin	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Endrin aldehyde	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Endrin ketone	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
g-BHC (Lindane)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Heptachlor	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Heptachlor epoxide	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Hexachlorobenzene	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Methoxychlor	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Toxaphene	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Aldrin and Dieldrin (Total)*	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
DDT + DDE + DDD (Total)*	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Vic EPA IWRG 621 OCP (Total)*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Vic EPA IWRG 621 Other OCP (Total)*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibutylchlorendate (surr.)	1	%	76	60	59	72
Tetrachloro-m-xylene (surr.)	1	%	66	58	59	58
Organophosphorus Pesticides						
Azinphos-methyl	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Bolstar	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Chlorfenvinphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Chlorpyrifos	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Chlorpyrifos-methyl	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Coumaphos	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Demeton-S	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Demeton-O	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Diazinon	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Dichlorvos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Dimethoate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Disulfoton	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
EPN	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ethion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ethoprop	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ethyl parathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Fenitrothion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Fensulfothion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Fenthion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Malathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Merphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Methyl parathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Mevinphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Monocrotophos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Naled	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Omethoate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Phorate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Pirimiphos-methyl	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Pyrazophos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ronnel	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Terbufos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Tetrachlorvinphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Tokuthion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002

Client Sample ID			CSM_BH02	CSM_BH04	CSM_BH06	CSM_BH08
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Ap22623	S20-Ap22624	S20-Ap22625	S20-Ap22626
Date Sampled			Apr 14, 2020	Apr 14, 2020	Apr 14, 2020	Apr 14, 2020
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Trichloronate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Triphenylphosphate (surr.)	1	%	67	56	92	67
Polychlorinated Biphenyls						
Aroclor-1016	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Aroclor-1221	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Aroclor-1232	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Aroclor-1242	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Aroclor-1248	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Aroclor-1254	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Aroclor-1260	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PCB*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibutylchlorendate (surr.)	1	%	76	60	59	72
Tetrachloro-m-xylene (surr.)	1	%	66	58	59	58
Phenols (Halogenated)						
2-Chlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.6-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachlorophenols - Total	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Total Halogenated Phenol*	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2-Nitrophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4-Dimethylphenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006	< 0.006	< 0.006	< 0.006
4-Nitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Dinoseb	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
Total Non-Halogenated Phenol*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol-d6 (surr.)	1	%	35	32	33	36
TRH - 2013 NEPM Fractions (after silica gel clean-up)						
TRH >C10-C16 (after silica gel clean-up)	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C16-C34 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C34-C40 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH - 1999 NEPM Fractions (after silica gel clean-up)						
TRH C10-C36 (Total) (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C10-C14 (after silica gel clean-up)	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH C15-C28 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C29-C36 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID			CSM_BH02	CSM_BH04	CSM_BH06	CSM_BH08
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Ap22623	S20-Ap22624	S20-Ap22625	S20-Ap22626
Date Sampled			Apr 14, 2020	Apr 14, 2020	Apr 14, 2020	Apr 14, 2020
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons (Trace level)						
Acenaphthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Acenaphthylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benz(a)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(a)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(b&j)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(g.h.i)perylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(k)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Chrysene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Dibenz(a.h)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	0.00007	0.00003
Fluorene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Indeno(1.2.3-cd)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Naphthalene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Phenanthrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Pyrene	0.00001	mg/L	< 0.00001	< 0.00001	0.00010	0.00003
Total PAH*	0.00001	mg/L	< 0.00001	< 0.00001	0.00017	0.00006
2-Fluorobiphenyl (surr.)	1	%	88	72	50	72
p-Terphenyl-d14 (surr.)	1	%	55	90	94	57
Ammonia (as N)	0.01	mg/L	0.05	0.11	0.07	0.08
Chloride	1	mg/L	190	140	250	120
Cyanide (total)	0.004	mg/L	< 0.004	< 0.004	< 0.004	< 0.004
Ferrous Iron - Fe2+	0.05	mg/L	< 0.05	7.8	5.0	4.6
Nitrate (as N)	0.02	mg/L	< 0.02	2.6	< 0.02	0.20
pH (at 25°C)	0.1	pH Units	6.6	5.9	5.9	6.0
Sulphate (as SO4)	5	mg/L	28	34	28	40
Total Dissolved Solids Dried at 180°C ± 2°C	10	mg/L	490	260	540	300
Total Suspended Solids Dried at 103–105°C	1	mg/L	2000	950	86	120
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	380	110	150	120
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10	< 10	< 10	< 10
Alkali Metals						
Calcium	0.5	mg/L	63	9.5	41	12
Magnesium	0.5	mg/L	51	18	39	17
Potassium	0.5	mg/L	8.6	5.0	6.7	6.4
Sodium	0.5	mg/L	150	92	140	95
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	0.002	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.002	< 0.001	0.005	0.002
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Manganese (filtered)	0.005	mg/L	0.090	0.35	0.27	0.31
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.004	0.006	0.007	0.002
Zinc (filtered)	0.005	mg/L	0.015	0.018	0.054	0.019

Client Sample ID			CSM_BH09S	CSM_BH10S	SRT_BH047	SRT_BH052
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Ap22627	S20-Ap22628	S20-Ap22629	S20-Ap22630
Date Sampled			Apr 16, 2020	Apr 15, 2020	Apr 15, 2020	Apr 15, 2020
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	104	102	105	101
Organochlorine Pesticides						
Chlordanes - Total	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
4.4'-DDD	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
4.4'-DDE	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
4.4'-DDT	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
a-BHC	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Aldrin	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
b-BHC	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
d-BHC	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Dieldrin	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Endosulfan I	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Endosulfan II	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Endosulfan sulphate	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Endrin	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Endrin aldehyde	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Endrin ketone	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
g-BHC (Lindane)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Heptachlor	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Heptachlor epoxide	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Hexachlorobenzene	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Methoxychlor	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Toxaphene	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Aldrin and Dieldrin (Total)*	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
DDT + DDE + DDD (Total)*	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Vic EPA IWRG 621 OCP (Total)*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Vic EPA IWRG 621 Other OCP (Total)*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibutylchlorendate (surr.)	1	%	69	61	83	67
Tetrachloro-m-xylene (surr.)	1	%	95	80	60	53

Client Sample ID			CSM_BH09S	CSM_BH10S	SRT_BH047	SRT_BH052
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Ap22627	S20-Ap22628	S20-Ap22629	S20-Ap22630
Date Sampled			Apr 16, 2020	Apr 15, 2020	Apr 15, 2020	Apr 15, 2020
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Azinphos-methyl	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Bolstar	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Chlorfenvinphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Chlorpyrifos	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Chlorpyrifos-methyl	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Coumaphos	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Demeton-S	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Demeton-O	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Diazinon	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Dichlorvos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Dimethoate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Disulfoton	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
EPN	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ethion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ethoprop	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ethyl parathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Fenitrothion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Fensulfothion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Fenthion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Malathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Merphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Methyl parathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Mevinphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Monocrotophos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Naled	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Omethoate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Phorate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Pirimiphos-methyl	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Pyrazophos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ronnel	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Terbufos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Tetrachlorvinphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Tokuthion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Trichloronate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Triphenylphosphate (surr.)	1	%	63	59	74	62
Polychlorinated Biphenyls						
Aroclor-1016	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Aroclor-1221	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Aroclor-1232	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Aroclor-1242	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Aroclor-1248	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Aroclor-1254	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Aroclor-1260	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PCB*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibutylchlorendate (surr.)	1	%	69	61	83	67
Tetrachloro-m-xylene (surr.)	1	%	95	80	60	53

Client Sample ID			CSM_BH09S	CSM_BH10S	SRT_BH047	SRT_BH052
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Ap22627	S20-Ap22628	S20-Ap22629	S20-Ap22630
Date Sampled			Apr 16, 2020	Apr 15, 2020	Apr 15, 2020	Apr 15, 2020
Test/Reference	LOR	Unit				
Phenols (Halogenated)						
2-Chlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.6-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachlorophenols - Total	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Total Halogenated Phenol*	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2-Nitrophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4-Dimethylphenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006	< 0.006	< 0.006	< 0.006
4-Nitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Dinoseb	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
Total Non-Halogenated Phenol*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol-d6 (surr.)	1	%	48	46	51	44
TRH - 2013 NEPM Fractions (after silica gel clean-up)						
TRH >C10-C16 (after silica gel clean-up)	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C16-C34 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C34-C40 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH - 1999 NEPM Fractions (after silica gel clean-up)						
TRH C10-C36 (Total) (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C10-C14 (after silica gel clean-up)	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH C15-C28 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C29-C36 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Polycyclic Aromatic Hydrocarbons (Trace level)						
Acenaphthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Acenaphthylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benz(a)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(a)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(b&j)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(g.h.i)perylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(k)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Chrysene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Dibenz(a.h)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Fluorene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Indeno(1.2.3-cd)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Naphthalene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Phenanthrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Total PAH*	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001

Client Sample ID			CSM_BH09S	CSM_BH10S	SRT_BH047	SRT_BH052
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Ap22627	S20-Ap22628	S20-Ap22629	S20-Ap22630
Date Sampled			Apr 16, 2020	Apr 15, 2020	Apr 15, 2020	Apr 15, 2020
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons (Trace level)						
2-Fluorobiphenyl (surr.)	1	%	94	85	53	90
p-Terphenyl-d14 (surr.)	1	%	55	98	61	53
Ammonia (as N)	0.01	mg/L	0.07	0.02	0.03	0.03
Chloride	1	mg/L	59	33	64	52
Cyanide (total)	0.004	mg/L	< 0.004	< 0.004	< 0.004	< 0.004
Ferrous Iron - Fe2+	0.05	mg/L	9.2	< 0.05	< 0.05	< 0.05
Nitrate (as N)	0.02	mg/L	< 0.02	1.8	20	< 0.1
pH (at 25°C)	0.1	pH Units	5.8	7.4	6.5	7.8
Sulphate (as SO4)	5	mg/L	130	47	11	15
Total Dissolved Solids Dried at 180°C ± 2°C	10	mg/L	320	180	320	210
Total Suspended Solids Dried at 103–105°C	1	mg/L	74	44	9.2	120
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	79	67	130	61
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10	< 10	< 10	< 10
Alkali Metals						
Calcium	0.5	mg/L	4.0	18	46	13
Magnesium	0.5	mg/L	8.0	7.5	11	3.3
Potassium	0.5	mg/L	5.1	6.0	1.0	0.9
Sodium	0.5	mg/L	130	40	38	49
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.001	< 0.001	0.011	0.012
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Manganese (filtered)	0.005	mg/L	0.82	0.46	0.006	0.008
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.005	< 0.001	0.007	0.003
Zinc (filtered)	0.005	mg/L	0.028	< 0.005	0.036	0.037

Client Sample ID			SRT_BH059	GASW_BH10	GASW_BH11	[R16]GASW_BH23
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Ap22631	S20-Ap22632	S20-Ap22633	S20-Ap22634
Date Sampled			Apr 15, 2020	Apr 14, 2020	Apr 16, 2020	Apr 16, 2020
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.5
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	2.7
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02	0.67
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	0.36	0.12
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	< 0.05	0.36	< 0.5
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1	0.1	1.2
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	< 0.1	0.46	1.32

Client Sample ID			SRT_BH059	GASW_BH10	GASW_BH11	[R16]GASW_BH23
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Ap22631	S20-Ap22632	S20-Ap22633	S20-Ap22634
Date Sampled			Apr 15, 2020	Apr 14, 2020	Apr 16, 2020	Apr 16, 2020
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	2.5
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	0.18	0.07
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	0.3	1.0
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	< 0.1	0.3
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	< 0.1	0.48	1.37
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	1.4
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	0.36
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	0.064
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	0.14
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	0.068
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	< 0.003	0.21
4-Bromofluorobenzene (surr.)	1	%	102	103	101	115
Organochlorine Pesticides						
Chlordanes - Total	0.001	mg/L	< 0.001	-	-	-
4.4'-DDD	0.0001	mg/L	< 0.0001	-	-	-
4.4'-DDE	0.0001	mg/L	< 0.0001	-	-	-
4.4'-DDT	0.0001	mg/L	< 0.0001	-	-	-
a-BHC	0.0001	mg/L	< 0.0001	-	-	-
Aldrin	0.0001	mg/L	< 0.0001	-	-	-
b-BHC	0.0001	mg/L	< 0.0001	-	-	-
d-BHC	0.0001	mg/L	< 0.0001	-	-	-
Dieldrin	0.0001	mg/L	< 0.0001	-	-	-
Endosulfan I	0.0001	mg/L	< 0.0001	-	-	-
Endosulfan II	0.0001	mg/L	< 0.0001	-	-	-
Endosulfan sulphate	0.0001	mg/L	< 0.0001	-	-	-
Endrin	0.0001	mg/L	< 0.0001	-	-	-
Endrin aldehyde	0.0001	mg/L	< 0.0001	-	-	-
Endrin ketone	0.0001	mg/L	< 0.0001	-	-	-
g-BHC (Lindane)	0.0001	mg/L	< 0.0001	-	-	-
Heptachlor	0.0001	mg/L	< 0.0001	-	-	-
Heptachlor epoxide	0.0001	mg/L	< 0.0001	-	-	-
Hexachlorobenzene	0.0001	mg/L	< 0.0001	-	-	-
Methoxychlor	0.0001	mg/L	< 0.0001	-	-	-
Toxaphene	0.01	mg/L	< 0.01	-	-	-
Aldrin and Dieldrin (Total)*	0.0001	mg/L	< 0.0001	-	-	-
DDT + DDE + DDD (Total)*	0.0001	mg/L	< 0.0001	-	-	-
Vic EPA IWRG 621 OCP (Total)*	0.001	mg/L	< 0.001	-	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.001	mg/L	< 0.001	-	-	-
Dibutylchlorendate (surr.)	1	%	92	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	70	-	-	-
Organophosphorus Pesticides						
Azinphos-methyl	0.002	mg/L	< 0.002	-	-	-
Bolstar	0.002	mg/L	< 0.002	-	-	-
Chlorfenvinphos	0.002	mg/L	< 0.002	-	-	-
Chlorpyrifos	0.02	mg/L	< 0.02	-	-	-
Chlorpyrifos-methyl	0.002	mg/L	< 0.002	-	-	-
Coumaphos	0.02	mg/L	< 0.02	-	-	-
Demeton-S	0.02	mg/L	< 0.02	-	-	-

Client Sample ID			SRT_BH059	GASW_BH10	GASW_BH11	[R16]GASW_BH23
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Ap22631	S20-Ap22632	S20-Ap22633	S20-Ap22634
Date Sampled			Apr 15, 2020	Apr 14, 2020	Apr 16, 2020	Apr 16, 2020
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Demeton-O	0.002	mg/L	< 0.002	-	-	-
Diazinon	0.002	mg/L	< 0.002	-	-	-
Dichlorvos	0.002	mg/L	< 0.002	-	-	-
Dimethoate	0.002	mg/L	< 0.002	-	-	-
Disulfoton	0.002	mg/L	< 0.002	-	-	-
EPN	0.002	mg/L	< 0.002	-	-	-
Ethion	0.002	mg/L	< 0.002	-	-	-
Ethoprop	0.002	mg/L	< 0.002	-	-	-
Ethyl parathion	0.002	mg/L	< 0.002	-	-	-
Fenitrothion	0.002	mg/L	< 0.002	-	-	-
Fensulfothion	0.002	mg/L	< 0.002	-	-	-
Fenthion	0.002	mg/L	< 0.002	-	-	-
Malathion	0.002	mg/L	< 0.002	-	-	-
Merphos	0.002	mg/L	< 0.002	-	-	-
Methyl parathion	0.002	mg/L	< 0.002	-	-	-
Mevinphos	0.002	mg/L	< 0.002	-	-	-
Monocrotophos	0.002	mg/L	< 0.002	-	-	-
Naled	0.002	mg/L	< 0.002	-	-	-
Omethoate	0.002	mg/L	< 0.002	-	-	-
Phorate	0.002	mg/L	< 0.002	-	-	-
Pirimiphos-methyl	0.02	mg/L	< 0.02	-	-	-
Pyrazophos	0.002	mg/L	< 0.002	-	-	-
Ronnel	0.002	mg/L	< 0.002	-	-	-
Terbufos	0.002	mg/L	< 0.002	-	-	-
Tetrachlorvinphos	0.002	mg/L	< 0.002	-	-	-
Tokuthion	0.002	mg/L	< 0.002	-	-	-
Trichloronate	0.002	mg/L	< 0.002	-	-	-
Triphenylphosphate (surr.)	1	%	85	-	-	-
Polychlorinated Biphenyls						
Aroclor-1016	0.001	mg/L	< 0.001	-	-	-
Aroclor-1221	0.001	mg/L	< 0.001	-	-	-
Aroclor-1232	0.001	mg/L	< 0.001	-	-	-
Aroclor-1242	0.001	mg/L	< 0.001	-	-	-
Aroclor-1248	0.001	mg/L	< 0.001	-	-	-
Aroclor-1254	0.001	mg/L	< 0.001	-	-	-
Aroclor-1260	0.001	mg/L	< 0.001	-	-	-
Total PCB*	0.001	mg/L	< 0.001	-	-	-
Dibutylchlorendate (surr.)	1	%	92	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	70	-	-	-
Phenols (Halogenated)						
2-Chlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.6-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachlorophenols - Total	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Total Halogenated Phenol*	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01

Client Sample ID			SRT_BH059	GASW_BH10	GASW_BH11	R16GASW_BH23
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Ap22631	S20-Ap22632	S20-Ap22633	S20-Ap22634
Date Sampled			Apr 15, 2020	Apr 14, 2020	Apr 16, 2020	Apr 16, 2020
Test/Reference	LOR	Unit				
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	< 0.003	< 0.003	0.005
2-Nitrophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4-Dimethylphenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	0.007
2.4-Dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006	0.060	< 0.006	< 0.006
4-Nitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Dinoseb	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	0.015
Total Non-Halogenated Phenol*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol-d6 (surr.)	1	%	66	90	49	58
TRH - 2013 NEPM Fractions (after silica gel clean-up)						
TRH >C10-C16 (after silica gel clean-up)	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C16-C34 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	0.7
TRH >C34-C40 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH - 1999 NEPM Fractions (after silica gel clean-up)						
TRH C10-C36 (Total) (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	0.7
TRH C10-C14 (after silica gel clean-up)	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH C15-C28 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	0.5
TRH C29-C36 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	0.2
Polycyclic Aromatic Hydrocarbons (Trace level)						
Acenaphthene	0.00001	mg/L	< 0.00001	< 0.00001	0.00006	0.00082
Acenaphthylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	0.00007
Anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	0.00030
Benz(a)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	0.00010
Benzo(a)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	0.00009
Benzo(b&j)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	0.00006
Benzo(g.h.i)perylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	0.00004
Benzo(k)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	0.00005
Chrysene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	0.00014
Dibenz(a.h)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	0.00006	0.00054
Fluorene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	0.0010
Indeno(1.2.3-cd)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	0.00004
Naphthalene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	0.0017
Phenanthrene	0.00001	mg/L	< 0.00001	< 0.00001	0.00004	0.00078
Pyrene	0.00001	mg/L	< 0.00001	< 0.00001	0.00004	0.00067
Total PAH*	0.00001	mg/L	< 0.00001	< 0.00001	0.0002	0.0064
2-Fluorobiphenyl (surr.)	1	%	64	97	57	66
p-Terphenyl-d14 (surr.)	1	%	72	87	57	69
Ammonia (as N)	0.01	mg/L	0.05	0.10	0.26	0.98
Chloride	1	mg/L	57	360	77	-
Cyanide (total)	0.004	mg/L	< 0.004	< 0.004	< 0.004	0.079
Ferrous Iron - Fe2+	0.05	mg/L	< 0.05	7.6	1.7	0.23
Nitrate (as N)	0.02	mg/L	1.4	< 0.02	< 0.02	-
pH (at 25°C)	0.1	pH Units	6.7	6.4	6.3	-

Client Sample ID			SRT_BH059	GASW_BH10	GASW_BH11	[R16]GASW_BH23
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Ap22631	S20-Ap22632	S20-Ap22633	S20-Ap22634
Date Sampled			Apr 15, 2020	Apr 14, 2020	Apr 16, 2020	Apr 16, 2020
Test/Reference	LOR	Unit				
Sulphate (as SO4)	5	mg/L	5.9	< 5	39	-
Total Dissolved Solids Dried at 180°C ± 2°C	10	mg/L	210	950	320	-
Total Suspended Solids Dried at 103–105°C	1	mg/L	31	240	8000	-
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	180	490	270	-
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10	< 10	< 10	-
Alkali Metals						
Calcium	0.5	mg/L	69	110	26	-
Magnesium	0.5	mg/L	6.5	66	6.7	-
Potassium	0.5	mg/L	8.5	17	4.9	-
Sodium	0.5	mg/L	12	180	49	-
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	0.002	0.011
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.002	0.001	0.012	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Manganese (filtered)	0.005	mg/L	< 0.005	0.36	0.31	0.053
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	< 0.001	0.038	0.006	< 0.001
Zinc (filtered)	0.005	mg/L	< 0.005	0.049	0.086	< 0.005

Client Sample ID			[R16]GASW_BH25A	SRT_BH050	SRT_BH060	QC02
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Ap22635	S20-Ap22636	S20-Ap22637	S20-Ap22638
Date Sampled			Apr 16, 2020	Apr 15, 2020	Apr 15, 2020	Apr 15, 2020
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	< 4	< 0.01	< 0.01	< 0.01
TRH C6-C10	0.02	mg/L	46	< 0.02	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	0.10	< 0.02	< 0.02	< 0.02
TRH >C10-C16	0.05	mg/L	2.3	< 0.05	< 0.05	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 4	< 0.05	< 0.05	< 0.05
TRH >C16-C34	0.1	mg/L	23	< 0.1	< 0.1	< 0.1
TRH >C34-C40	0.1	mg/L	1.3	< 0.1	< 0.1	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	26.6	< 0.1	< 0.1	< 0.1
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	46	< 0.02	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	2.5	< 0.05	< 0.05	< 0.05
TRH C15-C28	0.1	mg/L	20	< 0.1	< 0.1	< 0.1
TRH C29-C36	0.1	mg/L	6.4	< 0.1	< 0.1	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	28.9	< 0.1	< 0.1	< 0.1

Client Sample ID			R16GASW_BH25A	SRT_BH050	SRT_BH060	QC02
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Ap22635	S20-Ap22636	S20-Ap22637	S20-Ap22638
Date Sampled			Apr 16, 2020	Apr 15, 2020	Apr 15, 2020	Apr 15, 2020
Test/Reference	LOR	Unit				
BTEX						
Benzene	0.001	mg/L	29	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	12	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	1.2	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	2.5	< 0.002	< 0.002	< 0.002
o-Xylene	0.001	mg/L	1.2	< 0.001	< 0.001	< 0.001
Xylenes - Total*	0.003	mg/L	3.8	< 0.003	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	127	101	102	105
Organochlorine Pesticides						
Chlordanes - Total	0.001	mg/L	-	< 0.001	< 0.001	-
4.4'-DDD	0.0001	mg/L	-	< 0.0001	< 0.0001	-
4.4'-DDE	0.0001	mg/L	-	< 0.0001	< 0.0001	-
4.4'-DDT	0.0001	mg/L	-	< 0.0001	< 0.0001	-
a-BHC	0.0001	mg/L	-	< 0.0001	< 0.0001	-
Aldrin	0.0001	mg/L	-	< 0.0001	< 0.0001	-
b-BHC	0.0001	mg/L	-	< 0.0001	< 0.0001	-
d-BHC	0.0001	mg/L	-	< 0.0001	< 0.0001	-
Dieldrin	0.0001	mg/L	-	< 0.0001	< 0.0001	-
Endosulfan I	0.0001	mg/L	-	< 0.0001	< 0.0001	-
Endosulfan II	0.0001	mg/L	-	< 0.0001	< 0.0001	-
Endosulfan sulphate	0.0001	mg/L	-	< 0.0001	< 0.0001	-
Endrin	0.0001	mg/L	-	< 0.0001	< 0.0001	-
Endrin aldehyde	0.0001	mg/L	-	< 0.0001	< 0.0001	-
Endrin ketone	0.0001	mg/L	-	< 0.0001	< 0.0001	-
g-BHC (Lindane)	0.0001	mg/L	-	< 0.0001	< 0.0001	-
Heptachlor	0.0001	mg/L	-	< 0.0001	< 0.0001	-
Heptachlor epoxide	0.0001	mg/L	-	< 0.0001	< 0.0001	-
Hexachlorobenzene	0.0001	mg/L	-	< 0.0001	< 0.0001	-
Methoxychlor	0.0001	mg/L	-	< 0.0001	< 0.0001	-
Toxaphene	0.01	mg/L	-	< 0.01	< 0.01	-
Aldrin and Dieldrin (Total)*	0.0001	mg/L	-	< 0.0001	< 0.0001	-
DDT + DDE + DDD (Total)*	0.0001	mg/L	-	< 0.0001	< 0.0001	-
Vic EPA IWRG 621 OCP (Total)*	0.001	mg/L	-	< 0.001	< 0.001	-
Vic EPA IWRG 621 Other OCP (Total)*	0.001	mg/L	-	< 0.001	< 0.001	-
Dibutylchlorendate (surr.)	1	%	-	124	144	-
Tetrachloro-m-xylene (surr.)	1	%	-	89	85	-
Organophosphorus Pesticides						
Azinphos-methyl	0.002	mg/L	-	< 0.002	< 0.002	-
Bolstar	0.002	mg/L	-	< 0.002	< 0.002	-
Chlorfenvinphos	0.002	mg/L	-	< 0.002	< 0.002	-
Chlorpyrifos	0.02	mg/L	-	< 0.02	< 0.02	-
Chlorpyrifos-methyl	0.002	mg/L	-	< 0.002	< 0.002	-
Coumaphos	0.02	mg/L	-	< 0.02	< 0.02	-
Demeton-S	0.02	mg/L	-	< 0.02	< 0.02	-
Demeton-O	0.002	mg/L	-	< 0.002	< 0.002	-
Diazinon	0.002	mg/L	-	< 0.002	< 0.002	-
Dichlorvos	0.002	mg/L	-	< 0.002	< 0.002	-
Dimethoate	0.002	mg/L	-	< 0.002	< 0.002	-
Disulfoton	0.002	mg/L	-	< 0.002	< 0.002	-
EPN	0.002	mg/L	-	< 0.002	< 0.002	-

Client Sample ID			R16GASW_BH25A	SRT_BH050	SRT_BH060	QC02
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Ap22635	S20-Ap22636	S20-Ap22637	S20-Ap22638
Date Sampled			Apr 16, 2020	Apr 15, 2020	Apr 15, 2020	Apr 15, 2020
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Ethion	0.002	mg/L	-	< 0.002	< 0.002	-
Ethoprop	0.002	mg/L	-	< 0.002	< 0.002	-
Ethyl parathion	0.002	mg/L	-	< 0.002	< 0.002	-
Fenitrothion	0.002	mg/L	-	< 0.002	< 0.002	-
Fensulfothion	0.002	mg/L	-	< 0.002	< 0.002	-
Fenthion	0.002	mg/L	-	< 0.002	< 0.002	-
Malathion	0.002	mg/L	-	< 0.002	< 0.002	-
Merphos	0.002	mg/L	-	< 0.002	< 0.002	-
Methyl parathion	0.002	mg/L	-	< 0.002	< 0.002	-
Mevinphos	0.002	mg/L	-	< 0.002	< 0.002	-
Monocrotophos	0.002	mg/L	-	< 0.002	< 0.002	-
Naled	0.002	mg/L	-	< 0.002	< 0.002	-
Omethoate	0.002	mg/L	-	< 0.002	< 0.002	-
Phorate	0.002	mg/L	-	< 0.002	< 0.002	-
Pirimiphos-methyl	0.02	mg/L	-	< 0.02	< 0.02	-
Pyrazophos	0.002	mg/L	-	< 0.002	< 0.002	-
Ronnel	0.002	mg/L	-	< 0.002	< 0.002	-
Terbufos	0.002	mg/L	-	< 0.002	< 0.002	-
Tetrachlorvinphos	0.002	mg/L	-	< 0.002	< 0.002	-
Tokuthion	0.002	mg/L	-	< 0.002	< 0.002	-
Trichloronate	0.002	mg/L	-	< 0.002	< 0.002	-
Triphenylphosphate (surr.)	1	%	-	122	76	-
Polychlorinated Biphenyls						
Aroclor-1016	0.001	mg/L	-	< 0.001	< 0.001	-
Aroclor-1221	0.001	mg/L	-	< 0.001	< 0.001	-
Aroclor-1232	0.001	mg/L	-	< 0.001	< 0.001	-
Aroclor-1242	0.001	mg/L	-	< 0.001	< 0.001	-
Aroclor-1248	0.001	mg/L	-	< 0.001	< 0.001	-
Aroclor-1254	0.001	mg/L	-	< 0.001	< 0.001	-
Aroclor-1260	0.001	mg/L	-	< 0.001	< 0.001	-
Total PCB*	0.001	mg/L	-	< 0.001	< 0.001	-
Dibutylchlorendate (surr.)	1	%	-	124	144	-
Tetrachloro-m-xylene (surr.)	1	%	-	89	85	-
Phenols (Halogenated)						
2-Chlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
2.4-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
2.6-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
Pentachlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
Tetrachlorophenols - Total	0.03	mg/L	< 0.03	< 0.03	< 0.03	-
Total Halogenated Phenol*	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	-
2-Methylphenol (o-Cresol)	0.003	mg/L	0.010	< 0.003	< 0.003	-
2-Nitrophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
2.4-Dimethylphenol	0.003	mg/L	0.005	< 0.003	< 0.003	-

Client Sample ID			R16GASW_BH25A	SRT_BH050	SRT_BH060	QC02
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Ap22635	S20-Ap22636	S20-Ap22637	S20-Ap22638
Date Sampled			Apr 16, 2020	Apr 15, 2020	Apr 15, 2020	Apr 15, 2020
Test/Reference	LOR	Unit				
Phenols (non-Halogenated)						
2.4-Dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	-
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	0.007	< 0.006	< 0.006	-
4-Nitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	-
Dinoseb	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
Phenol	0.003	mg/L	0.035	< 0.003	< 0.003	-
Total Non-Halogenated Phenol*	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
Phenol-d6 (surr.)	1	%	56	84	80	-
TRH - 2013 NEPM Fractions (after silica gel clean-up)						
TRH >C10-C16 (after silica gel clean-up)	0.05	mg/L	0.47	< 0.05	< 0.05	-
TRH >C16-C34 (after silica gel clean-up)	0.1	mg/L	0.2	< 0.1	< 0.1	-
TRH >C34-C40 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
TRH - 1999 NEPM Fractions (after silica gel clean-up)						
TRH C10-C36 (Total) (after silica gel clean-up)	0.1	mg/L	1.9	< 0.1	< 0.1	-
TRH C10-C14 (after silica gel clean-up)	0.05	mg/L	1.6	< 0.05	< 0.05	-
TRH C15-C28 (after silica gel clean-up)	0.1	mg/L	0.3	< 0.1	< 0.1	-
TRH C29-C36 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
Polycyclic Aromatic Hydrocarbons (Trace level)						
Acenaphthene	0.00001	mg/L	0.00093	< 0.00001	< 0.00001	< 0.00001
Acenaphthylene	0.00001	mg/L	0.00056	< 0.00001	< 0.00001	< 0.00001
Anthracene	0.00001	mg/L	0.00073	< 0.00001	0.00002	< 0.00001
Benz(a)anthracene	0.00001	mg/L	0.00016	< 0.00001	< 0.00001	< 0.00001
Benzo(a)pyrene	0.00001	mg/L	0.00021	< 0.00001	< 0.00001	< 0.00001
Benzo(b&j)fluoranthene	0.00001	mg/L	0.00014	< 0.00001	< 0.00001	< 0.00001
Benzo(g.h.i)perylene	0.00001	mg/L	0.00009	< 0.00001	< 0.00001	< 0.00001
Benzo(k)fluoranthene	0.00001	mg/L	0.00014	< 0.00001	< 0.00001	< 0.00001
Chrysene	0.00001	mg/L	0.00028	< 0.00001	< 0.00001	< 0.00001
Dibenz(a.h)anthracene	0.00001	mg/L	0.00003	< 0.00001	< 0.00001	< 0.00001
Fluoranthene	0.00001	mg/L	0.00091	< 0.00001	0.00007	< 0.00001
Fluorene	0.00001	mg/L	0.0020	< 0.00001	< 0.00001	< 0.00001
Indeno(1.2.3-cd)pyrene	0.00001	mg/L	0.00007	< 0.00001	< 0.00001	< 0.00001
Naphthalene	0.00001	mg/L	0.026	< 0.00001	< 0.00001	< 0.00001
Phenanthrene	0.00001	mg/L	0.0036	< 0.00001	0.00004	< 0.00001
Pyrene	0.00001	mg/L	0.0015	< 0.00001	0.00009	< 0.00001
Total PAH*	0.00001	mg/L	0.03735	< 0.00001	0.00022	< 0.00001
2-Fluorobiphenyl (surr.)	1	%	68	106	109	110
p-Terphenyl-d14 (surr.)	1	%	75	119	123	118
Ammonia (as N)	0.01	mg/L	0.61	0.04	0.04	-
Chloride	1	mg/L	26	52	73	-
Cyanide (total)	0.004	mg/L	0.14	< 0.004	< 0.004	-
Ferrous Iron - Fe2+	0.05	mg/L	0.55	< 0.05	< 0.05	-
Nitrate (as N)	0.02	mg/L	< 0.02	0.26	7.0	-
pH (at 25°C)	0.1	pH Units	6.3	3.9	8.0	-
Sulphate (as SO4)	5	mg/L	43	45	39	-
Total Dissolved Solids Dried at 180°C ± 2°C	10	mg/L	250	130	280	-
Total Suspended Solids Dried at 103–105°C	1	mg/L	120	480	34000	-
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	160	< 20	I/S	-
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10	< 10	I/S	-

Client Sample ID			[R16]GASW_BH25A	SRT_BH050	SRT_BH060	QC02
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Ap22635	S20-Ap22636	S20-Ap22637	S20-Ap22638
Date Sampled			Apr 16, 2020	Apr 15, 2020	Apr 15, 2020	Apr 15, 2020
Test/Reference	LOR	Unit				
Alkali Metals						
Calcium	0.5	mg/L	76	18	38	-
Magnesium	0.5	mg/L	5.3	2.5	2.3	-
Potassium	0.5	mg/L	7.7	7.2	9.6	-
Sodium	0.5	mg/L	27	17	18	-
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	0.010	< 0.001	< 0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	< 0.001	0.002	0.008	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Manganese (filtered)	0.005	mg/L	0.075	0.024	0.009	-
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	< 0.001	0.001	0.006	< 0.001
Zinc (filtered)	0.005	mg/L	< 0.005	0.012	0.025	< 0.005

Client Sample ID			RB01	TRIP BLANK	[R20]TRIP SPIKE
Sample Matrix			Water	Water	Water
Eurofins Sample No.			S20-Ap22639	S20-Ap22640	S20-Ap22641
Date Sampled			Apr 15, 2020	Apr 14, 2020	Apr 14, 2020
Test/Reference	LOR	Unit			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
Naphthalene[N02]	0.01	mg/L	-	< 0.01	100
TRH C6-C10	0.02	mg/L	-	< 0.02	82
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	-	< 0.02	-
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					
TRH C6-C9	0.02	mg/L	-	< 0.02	85
BTEX					
Benzene	0.001	mg/L	-	< 0.001	96
Toluene	0.001	mg/L	-	< 0.001	96
Ethylbenzene	0.001	mg/L	-	< 0.001	97
m&p-Xylenes	0.002	mg/L	-	< 0.002	94
o-Xylene	0.001	mg/L	-	< 0.001	100
Xylenes - Total*	0.003	mg/L	-	< 0.003	96
4-Bromofluorobenzene (surr.)	1	%	-	109	107
Heavy Metals					
Arsenic	0.001	mg/L	< 0.001	-	-
Cadmium	0.0002	mg/L	< 0.0002	-	-
Chromium	0.001	mg/L	< 0.001	-	-
Copper	0.001	mg/L	< 0.001	-	-
Lead	0.001	mg/L	< 0.001	-	-
Mercury	0.0001	mg/L	< 0.0001	-	-
Nickel	0.001	mg/L	< 0.001	-	-
Zinc	0.005	mg/L	< 0.005	-	-

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Apr 17, 2020	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons	Sydney	Apr 16, 2020	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Apr 17, 2020	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Melbourne	Apr 17, 2020	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Eurofins | mgt Suite B6 (filtered metals)			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Apr 17, 2020	
- Method: LTM-ORG-2010 TRH C6-C40			
Metals M8 filtered	Melbourne	Apr 17, 2020	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Eurofins | mgt Suite B15			
Organochlorine Pesticides	Melbourne	Apr 17, 2020	7 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8270)			
Organophosphorus Pesticides	Melbourne	Apr 17, 2020	7 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS (USEPA 8081)			
Polychlorinated Biphenyls	Melbourne	Apr 17, 2020	7 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8082)			
Phenols (IWRG 621)			
Phenols (Halogenated)	Melbourne	Apr 17, 2020	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (non-Halogenated)	Melbourne	Apr 17, 2020	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
TRH - 2013 NEPM Fractions (after silica gel clean-up)	Melbourne	Apr 17, 2020	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
TRH - 1999 NEPM Fractions (after silica gel clean-up)	Melbourne	Apr 17, 2020	7 Days
- Method: TRH C6-C36 (Silica Gel Cleanup) - MGT 100A			
Polycyclic Aromatic Hydrocarbons (Trace level)	Melbourne	Apr 17, 2020	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water (trace)			
Cyanide (total)	Melbourne	Apr 17, 2020	14 Days
- Method: LTM-INO-4020 Total Free WAD Cyanide by CFA			
Ferrous Iron - Fe2+	Melbourne	Apr 17, 2020	7 Days
- Method: LTM-INO-4190 Ferrous Iron in Water by Discrete Analyser			
pH (at 25°C)	Melbourne	Apr 17, 2020	0 Hours
- Method: LTM-GEN-7090 pH in water by ISE			
Total Suspended Solids Dried at 103–105°C	Melbourne	Apr 17, 2020	7 Days
- Method: LTM-INO-4070 Analysis of Suspended Solids in Water by Gravimetry			
Metals M8	Melbourne	Apr 17, 2020	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Heavy Metals (filtered)	Melbourne	Apr 17, 2020	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Major Cations			
Ammonia (as N)	Melbourne	Apr 22, 2020	28 Days
- Method: LTM-INO-4200 Ammonia by Discrete Analyser			
Alkali Metals	Melbourne	Apr 17, 2020	180 Days
- Method: LTM-MET-3010 Alkali Metals Sulfur Silicon Phosphorus by ICP-AES			
Major Anions			
Chloride	Melbourne	Apr 17, 2020	28 Days

Description	Testing Site	Extracted	Holding Time
- Method: LTM-INO-4090 Chloride by Discrete Analyser			
Nitrate (as N)	Melbourne	Apr 22, 2020	28 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Sulphate (as SO4)	Melbourne	Apr 17, 2020	28 Days
- Method: LTM-INO-4110 Sulfate by Discrete Analyser			
Alkalinity (speciated)	Melbourne	Apr 17, 2020	14 Days
- Method: LTM-INO-4250 Alkalinity by Electrometric Titration			
Total Dissolved Solids Dried at 180°C ± 2°C	Melbourne	Apr 17, 2020	7 Days
- Method: LTM-INO-4170 Total Dissolved Solids in Water			

eurofins | Environment Testing

ABN – 50 005 085 521 web : www.eurofins.com.au e.mail : EnviroSales@eurofins.com

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: GHD Pty Ltd NSW
Address: Level 15, 133 Castlereagh Street
Sydney
NSW 2000

Project Name: CENTRAL
Project ID: 21-27234

Order No.:
Report #: 714027
Phone: 02 9239 7100
Fax: 02 9239 7199

Received: Apr 16, 2020 1:42 PM
Due: Apr 23, 2020
Priority: 5 Day
Contact Name: Henry Luo

Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail						Ammonia (as N)	Cyanide (total)	Ferrous Iron - Fe2+	Manganese (filtered)	pH (at 25°C)	Total Suspended Solids Dried at 103–105°C	Metals M8	Phenols (IWRG 621)	Eurofins | mgt Suite B15	Major Anions	Major Cations	TRH (after Silica Gel cleanup)	Eurofins | mgt Suite B6 (filtered metals)	BTEXN and Volatile TRH	Polycyclic Aromatic Hydrocarbons (Trace level)	Total Dissolved Solids Dried at 180°C ± 2°C
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217																		X	X		
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
External Laboratory																					
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																
1	CSM_BH02	Apr 14, 2020		Water	S20-Ap22623		X	X	X	X	X		X	X	X	X	X	X		X	X
2	CSM_BH04	Apr 14, 2020		Water	S20-Ap22624		X	X	X	X	X		X	X	X	X	X	X		X	X
3	CSM_BH06	Apr 14, 2020		Water	S20-Ap22625		X	X	X	X	X		X	X	X	X	X	X		X	X
4	CSM_BH08	Apr 14, 2020		Water	S20-Ap22626		X	X	X	X	X		X	X	X	X	X	X		X	X
5	CSM_BH09S	Apr 16, 2020		Water	S20-Ap22627		X	X	X	X	X		X	X	X	X	X	X		X	X
6	CSM_BH10S	Apr 15, 2020		Water	S20-Ap22628		X	X	X	X	X		X	X	X	X	X	X		X	X
7	SRT_BH047	Apr 15, 2020		Water	S20-Ap22629		X	X	X	X	X		X	X	X	X	X	X		X	X
8	SRT_BH052	Apr 15, 2020		Water	S20-Ap22630		X	X	X	X	X		X	X	X	X	X	X		X	X
9	SRT_BH059	Apr 15, 2020		Water	S20-Ap22631		X	X	X	X	X		X	X	X	X	X	X		X	X
10	GASW_BH10	Apr 14, 2020		Water	S20-Ap22632		X	X	X	X	X		X		X	X	X	X		X	X

eurofins | Environment Testing

ABN – 50 005 085 521 web : www.eurofins.com.au e.mail : EnviroSales@eurofins.com

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: GHD Pty Ltd NSW
Address: Level 15, 133 Castlereagh Street
Sydney
NSW 2000

Project Name: CENTRAL
Project ID: 21-27234

Order No.:
Report #: 714027
Phone: 02 9239 7100
Fax: 02 9239 7199

Received: Apr 16, 2020 1:42 PM
Due: Apr 23, 2020
Priority: 5 Day
Contact Name: Henry Luo

Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail						Ammonia (as N)	Cyanide (total)	Ferrous Iron - Fe2+	Manganese (filtered)	pH (at 25°C)	Total Suspended Solids Dried at 103–105°C	Metals M8	Phenols (IWRG 621)	Eurofins | mgt Suite B15	Major Anions	Major Cations	TRH (after Silica Gel cleanup)	Eurofins | mgt Suite B6 (filtered metals)	BTEXN and Volatile TRH	Polycyclic Aromatic Hydrocarbons (Trace level)	Total Dissolved Solids Dried at 180°C ± 2°C
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217																		X	X		
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
11	GASW_BH11	Apr 16, 2020		Water	S20-Ap22633		X	X	X	X	X		X		X	X	X	X		X	X
12	GASW_BH23	Apr 16, 2020		Water	S20-Ap22634	X	X	X	X				X				X	X		X	
13	GASW_BH25A	Apr 16, 2020		Water	S20-Ap22635		X	X	X	X	X		X		X	X	X	X		X	X
14	SRT_BH050	Apr 15, 2020		Water	S20-Ap22636		X	X	X	X	X		X	X	X	X	X	X		X	X
15	SRT_BH060	Apr 15, 2020		Water	S20-Ap22637		X	X	X	X	X		X	X	X	X	X	X		X	X
16	QC02	Apr 15, 2020		Water	S20-Ap22638													X		X	
17	RB01	Apr 15, 2020		Water	S20-Ap22639							X									
18	TRIP BLANK	Apr 14, 2020		Water	S20-Ap22640														X		
19	TRIP SPIKE	Apr 14, 2020		Water	S20-Ap22641														X		
Test Counts						1	15	15	15	14	14	1	15	11	14	14	15	16	2	16	14

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
ug/L: micrograms per litre
ppm: Parts per million
ppb: Parts per billion
%: Percentage
org/100mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.01			0.01	Pass	
Naphthalene	mg/L	< 0.01			0.01	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total*	mg/L	< 0.003			0.003	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/L	< 0.001			0.001	Pass	
4.4'-DDD	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDE	mg/L	< 0.0001			0.0001	Pass	
4.4'-DDT	mg/L	< 0.0001			0.0001	Pass	
a-BHC	mg/L	< 0.0001			0.0001	Pass	
Aldrin	mg/L	< 0.0001			0.0001	Pass	
b-BHC	mg/L	< 0.0001			0.0001	Pass	
d-BHC	mg/L	< 0.0001			0.0001	Pass	
Dieldrin	mg/L	< 0.0001			0.0001	Pass	
Endosulfan I	mg/L	< 0.0001			0.0001	Pass	
Endosulfan II	mg/L	< 0.0001			0.0001	Pass	
Endosulfan sulphate	mg/L	< 0.0001			0.0001	Pass	
Endrin	mg/L	< 0.0001			0.0001	Pass	
Endrin aldehyde	mg/L	< 0.0001			0.0001	Pass	
Endrin ketone	mg/L	< 0.0001			0.0001	Pass	
g-BHC (Lindane)	mg/L	< 0.0001			0.0001	Pass	
Heptachlor	mg/L	< 0.0001			0.0001	Pass	
Heptachlor epoxide	mg/L	< 0.0001			0.0001	Pass	
Hexachlorobenzene	mg/L	< 0.0001			0.0001	Pass	
Methoxychlor	mg/L	< 0.0001			0.0001	Pass	
Toxaphene	mg/L	< 0.01			0.01	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/L	< 0.002			0.002	Pass	
Bolstar	mg/L	< 0.002			0.002	Pass	
Chlorfenvinphos	mg/L	< 0.002			0.002	Pass	
Chlorpyrifos	mg/L	< 0.02			0.02	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chlorpyrifos-methyl	mg/L	< 0.002			0.002	Pass	
Coumaphos	mg/L	< 0.02			0.02	Pass	
Demeton-S	mg/L	< 0.02			0.02	Pass	
Demeton-O	mg/L	< 0.002			0.002	Pass	
Diazinon	mg/L	< 0.002			0.002	Pass	
Dichlorvos	mg/L	< 0.002			0.002	Pass	
Dimethoate	mg/L	< 0.002			0.002	Pass	
Disulfoton	mg/L	< 0.002			0.002	Pass	
EPN	mg/L	< 0.002			0.002	Pass	
Ethion	mg/L	< 0.002			0.002	Pass	
Ethoprop	mg/L	< 0.002			0.002	Pass	
Ethyl parathion	mg/L	< 0.002			0.002	Pass	
Fenitrothion	mg/L	< 0.002			0.002	Pass	
Fensulfothion	mg/L	< 0.002			0.002	Pass	
Fenthion	mg/L	< 0.002			0.002	Pass	
Malathion	mg/L	< 0.002			0.002	Pass	
Merphos	mg/L	< 0.002			0.002	Pass	
Methyl parathion	mg/L	< 0.002			0.002	Pass	
Mevinphos	mg/L	< 0.002			0.002	Pass	
Monocrotophos	mg/L	< 0.002			0.002	Pass	
Naled	mg/L	< 0.002			0.002	Pass	
Omethoate	mg/L	< 0.002			0.002	Pass	
Phorate	mg/L	< 0.002			0.002	Pass	
Pirimiphos-methyl	mg/L	< 0.02			0.02	Pass	
Pyrazophos	mg/L	< 0.002			0.002	Pass	
Ronnel	mg/L	< 0.002			0.002	Pass	
Terbufos	mg/L	< 0.002			0.002	Pass	
Tetrachlorvinphos	mg/L	< 0.002			0.002	Pass	
Tokuthion	mg/L	< 0.002			0.002	Pass	
Trichloronate	mg/L	< 0.002			0.002	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/L	< 0.001			0.001	Pass	
Aroclor-1221	mg/L	< 0.001			0.001	Pass	
Aroclor-1232	mg/L	< 0.001			0.001	Pass	
Aroclor-1242	mg/L	< 0.001			0.001	Pass	
Aroclor-1248	mg/L	< 0.001			0.001	Pass	
Aroclor-1254	mg/L	< 0.001			0.001	Pass	
Aroclor-1260	mg/L	< 0.001			0.001	Pass	
Total PCB*	mg/L	< 0.001			0.001	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/L	< 0.003			0.003	Pass	
2.4-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
2.4.5-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.4.6-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.6-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
4-Chloro-3-methylphenol	mg/L	< 0.01			0.01	Pass	
Pentachlorophenol	mg/L	< 0.01			0.01	Pass	
Tetrachlorophenols - Total	mg/L	< 0.03			0.03	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	mg/L	< 0.1			0.1	Pass	
2-Methyl-4.6-dinitrophenol	mg/L	< 0.03			0.03	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2-Methylphenol (o-Cresol)	mg/L	< 0.003			0.003	Pass	
2-Nitrophenol	mg/L	< 0.01			0.01	Pass	
2.4-Dimethylphenol	mg/L	< 0.003			0.003	Pass	
2.4-Dinitrophenol	mg/L	< 0.03			0.03	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/L	< 0.006			0.006	Pass	
4-Nitrophenol	mg/L	< 0.03			0.03	Pass	
Dinoseb	mg/L	< 0.1			0.1	Pass	
Phenol	mg/L	< 0.003			0.003	Pass	
Method Blank							
TRH - 2013 NEPM Fractions (after silica gel clean-up)							
TRH >C10-C16 (after silica gel clean-up)	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34 (after silica gel clean-up)	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40 (after silica gel clean-up)	mg/L	< 0.1			0.1	Pass	
Method Blank							
TRH - 1999 NEPM Fractions (after silica gel clean-up)							
TRH C10-C14 (after silica gel clean-up)	mg/L	< 0.05			0.05	Pass	
TRH C15-C28 (after silica gel clean-up)	mg/L	< 0.1			0.1	Pass	
TRH C29-C36 (after silica gel clean-up)	mg/L	< 0.1			0.1	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons (Trace level)							
Acenaphthene	mg/L	< 0.00001			0.00001	Pass	
Acenaphthylene	mg/L	< 0.00001			0.00001	Pass	
Anthracene	mg/L	< 0.00001			0.00001	Pass	
Benz(a)anthracene	mg/L	< 0.00001			0.00001	Pass	
Benzo(a)pyrene	mg/L	< 0.00001			0.00001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.00001			0.00001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.00001			0.00001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.00001			0.00001	Pass	
Chrysene	mg/L	< 0.00001			0.00001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.00001			0.00001	Pass	
Fluoranthene	mg/L	< 0.00001			0.00001	Pass	
Fluorene	mg/L	< 0.00001			0.00001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	0.00001			0.00001	Pass	
Naphthalene	mg/L	< 0.00001			0.00001	Pass	
Phenanthrene	mg/L	< 0.00001			0.00001	Pass	
Pyrene	mg/L	< 0.00001			0.00001	Pass	
Method Blank							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Chloride	mg/L	< 1			1	Pass	
Cyanide (total)	mg/L	< 0.004			0.004	Pass	
Ferrous Iron - Fe2+	mg/L	< 0.05			0.05	Pass	
Nitrate (as N)	mg/L	< 0.02			0.02	Pass	
Sulphate (as SO4)	mg/L	< 5			5	Pass	
Total Dissolved Solids Dried at 180°C ± 2°C	mg/L	< 10			10	Pass	
Total Suspended Solids Dried at 103–105°C	mg/L	< 1			1	Pass	
Method Blank							
Alkalinity (speciated)							
Bicarbonate Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Carbonate Alkalinity (as CaCO3)	mg/L	< 10			10	Pass	
Method Blank							
Alkali Metals							
Calcium	mg/L	< 0.5			0.5	Pass	
Magnesium	mg/L	< 0.5			0.5	Pass	
Potassium	mg/L	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Sodium	mg/L	< 0.5			0.5	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	93			70-130	Pass	
TRH C6-C10	%	103			70-130	Pass	
TRH >C10-C16	%	73			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	119			70-130	Pass	
TRH C10-C14	%	78			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	99			70-130	Pass	
Toluene	%	105			70-130	Pass	
Ethylbenzene	%	101			70-130	Pass	
m&p-Xylenes	%	120			70-130	Pass	
Xylenes - Total*	%	113			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	86			70-130	Pass	
4.4'-DDD	%	99			70-130	Pass	
4.4'-DDE	%	127			70-130	Pass	
4.4'-DDT	%	80			70-130	Pass	
a-BHC	%	106			70-130	Pass	
Aldrin	%	106			70-130	Pass	
b-BHC	%	110			70-130	Pass	
d-BHC	%	111			70-130	Pass	
Dieldrin	%	111			70-130	Pass	
Endosulfan I	%	106			70-130	Pass	
Endosulfan II	%	96			70-130	Pass	
Endosulfan sulphate	%	87			70-130	Pass	
Endrin	%	87			70-130	Pass	
Endrin aldehyde	%	94			70-130	Pass	
Endrin ketone	%	100			70-130	Pass	
g-BHC (Lindane)	%	127			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Heptachlor	%	94			70-130	Pass	
Heptachlor epoxide	%	102			70-130	Pass	
Hexachlorobenzene	%	105			70-130	Pass	
Methoxychlor	%	81			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	121			70-130	Pass	
Dimethoate	%	83			70-130	Pass	
Ethion	%	91			70-130	Pass	
Fenitrothion	%	105			70-130	Pass	
Methyl parathion	%	97			70-130	Pass	
Mevinphos	%	71			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1260	%	110			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	81			30-130	Pass	
2.4-Dichlorophenol	%	89			30-130	Pass	
2.4.5-Trichlorophenol	%	70			30-130	Pass	
2.4.6-Trichlorophenol	%	89			30-130	Pass	
2.6-Dichlorophenol	%	84			30-130	Pass	
4-Chloro-3-methylphenol	%	74			30-130	Pass	
Pentachlorophenol	%	68			30-130	Pass	
Tetrachlorophenols - Total	%	87			30-130	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	%	75			30-130	Pass	
2-Methyl-4.6-dinitrophenol	%	44			30-130	Pass	
2-Methylphenol (o-Cresol)	%	81			30-130	Pass	
2-Nitrophenol	%	74			30-130	Pass	
2.4-Dimethylphenol	%	98			30-130	Pass	
2.4-Dinitrophenol	%	55			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	%	81			30-130	Pass	
4-Nitrophenol	%	77			30-130	Pass	
Dinoseb	%	56			30-130	Pass	
Phenol	%	55			30-130	Pass	
LCS - % Recovery							
TRH - 2013 NEPM Fractions (after silica gel clean-up)							
TRH >C10-C16 (after silica gel clean-up)	%	73			70-130	Pass	
LCS - % Recovery							
TRH - 1999 NEPM Fractions (after silica gel clean-up)							
TRH C10-C14 (after silica gel clean-up)	%	78			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons (Trace level)							
Acenaphthene	%	105			70-130	Pass	
Acenaphthylene	%	102			70-130	Pass	
Anthracene	%	79			70-130	Pass	
Benz(a)anthracene	%	82			70-130	Pass	
Benzo(a)pyrene	%	109			70-130	Pass	
Benzo(b&j)fluoranthene	%	92			70-130	Pass	
Benzo(g.h.i)perylene	%	84			70-130	Pass	
Benzo(k)fluoranthene	%	101			70-130	Pass	
Chrysene	%	97			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Dibenz(a.h)anthracene	%	76			70-130	Pass	
Fluoranthene	%	105			70-130	Pass	
Fluorene	%	104			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	88			70-130	Pass	
Naphthalene	%	94			70-130	Pass	
Phenanthrene	%	86			70-130	Pass	
Pyrene	%	103			70-130	Pass	
LCS - % Recovery							
Ammonia (as N)	%	96			70-130	Pass	
Chloride	%	112			70-130	Pass	
Cyanide (total)	%	96			70-130	Pass	
Ferrous Iron - Fe2+	%	82			70-130	Pass	
Nitrate (as N)	%	84			70-130	Pass	
Sulphate (as SO4)	%	111			70-130	Pass	
Total Dissolved Solids Dried at 180°C ± 2°C	%	96			70-130	Pass	
Total Suspended Solids Dried at 103–105°C	%	101			70-130	Pass	
LCS - % Recovery							
Alkalinity (speciated)							
Carbonate Alkalinity (as CaCO3)	%	73			70-130	Pass	
LCS - % Recovery							
Alkali Metals							
Calcium	%	109			70-130	Pass	
Magnesium	%	104			70-130	Pass	
Potassium	%	114			70-130	Pass	
Sodium	%	115			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	101			80-120	Pass	
Cadmium	%	103			80-120	Pass	
Chromium	%	102			80-120	Pass	
Copper	%	101			80-120	Pass	
Lead	%	101			80-120	Pass	
Mercury	%	105			75-125	Pass	
Nickel	%	102			80-120	Pass	
Zinc	%	104			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic (filtered)	S20-Ap22625	CP	%	103			70-130	Pass	
Cadmium (filtered)	S20-Ap22625	CP	%	102			70-130	Pass	
Chromium (filtered)	S20-Ap22625	CP	%	100			70-130	Pass	
Copper (filtered)	S20-Ap22625	CP	%	96			70-130	Pass	
Lead (filtered)	S20-Ap22625	CP	%	99			70-130	Pass	
Manganese (filtered)	S20-Ap22625	CP	%	68			70-130	Fail	Q08
Mercury (filtered)	S20-Ap22625	CP	%	81			70-130	Pass	
Nickel (filtered)	S20-Ap22625	CP	%	98			70-130	Pass	
Zinc (filtered)	S20-Ap22625	CP	%	93			70-130	Pass	
Spike - % Recovery									
Alkali Metals				Result 1					
Calcium	S20-Ap22626	CP	%	116			70-130	Pass	
Magnesium	S20-Ap22626	CP	%	117			70-130	Pass	
Potassium	S20-Ap22626	CP	%	119			70-130	Pass	
Sodium	S20-Ap22626	CP	%	113			70-130	Pass	
Spike - % Recovery									

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
				Result 1					
Total Suspended Solids Dried at 103–105°C	S20-Ap22628	CP	%	80			70-130	Pass	
Spike - % Recovery									
Alkalinity (speciated)				Result 1					
Bicarbonate Alkalinity (as CaCO3)	M20-Ap27228	NCP	%	75			70-130	Pass	
Spike - % Recovery									
				Result 1					
Cyanide (total)	S20-Ap22629	CP	%	101			70-130	Pass	
Ferrous Iron - Fe2+	S20-Ap22629	CP	%	86			70-130	Pass	
Spike - % Recovery									
				Result 1					
Chloride	S20-Ap22630	CP	%	92			70-130	Pass	
Sulphate (as SO4)	S20-Ap22630	CP	%	105			70-130	Pass	
Spike - % Recovery									
Alkalinity (speciated)				Result 1					
Carbonate Alkalinity (as CaCO3)	M20-Ap20314	NCP	%	97			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S20-Ap22633	CP	%	73			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	S20-Ap22633	CP	%	77			70-130	Pass	
Spike - % Recovery									
Phenols (Halogenated)				Result 1					
2-Chlorophenol	S20-Ap22633	CP	%	70			30-130	Pass	
2.4-Dichlorophenol	S20-Ap22633	CP	%	70			30-130	Pass	
2.4.5-Trichlorophenol	S20-Ap22633	CP	%	69			30-130	Pass	
2.4.6-Trichlorophenol	S20-Ap22633	CP	%	69			30-130	Pass	
2.6-Dichlorophenol	S20-Ap22633	CP	%	69			30-130	Pass	
4-Chloro-3-methylphenol	S20-Ap22633	CP	%	71			30-130	Pass	
Pentachlorophenol	S20-Ap22633	CP	%	70			30-130	Pass	
Spike - % Recovery									
Phenols (non-Halogenated)				Result 1					
2-Cyclohexyl-4.6-dinitrophenol	S20-Ap22633	CP	%	61			30-130	Pass	
2-Methyl-4.6-dinitrophenol	S20-Ap22633	CP	%	46			30-130	Pass	
2-Methylphenol (o-Cresol)	S20-Ap22633	CP	%	72			30-130	Pass	
2-Nitrophenol	S20-Ap22633	CP	%	67			30-130	Pass	
2.4-Dimethylphenol	S20-Ap22633	CP	%	91			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	S20-Ap22633	CP	%	69			30-130	Pass	
4-Nitrophenol	S20-Ap22633	CP	%	46			30-130	Pass	
Dinoseb	S20-Ap22633	CP	%	67			30-130	Pass	
Phenol	S20-Ap22633	CP	%	60			30-130	Pass	
Spike - % Recovery									
TRH - 2013 NEPM Fractions (after silica gel clean-up)				Result 1					
TRH >C10-C16 (after silica gel clean-up)	S20-Ap22633	CP	%	73			70-130	Pass	
Spike - % Recovery									
TRH - 1999 NEPM Fractions (after silica gel clean-up)				Result 1					
TRH C10-C14 (after silica gel clean-up)	S20-Ap22633	CP	%	77			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons (Trace level)				Result 1					
Acenaphthene	S20-Ap22633	CP	%	75			70-130	Pass	
Acenaphthylene	S20-Ap22633	CP	%	74			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Anthracene	S20-Ap22633	CP	%	85			70-130	Pass	
Benz(a)anthracene	S20-Ap22633	CP	%	72			70-130	Pass	
Benzo(a)pyrene	S20-Ap22633	CP	%	89			70-130	Pass	
Benzo(b&j)fluoranthene	S20-Ap22633	CP	%	85			70-130	Pass	
Benzo(g.h.i)perylene	S20-Ap22633	CP	%	96			70-130	Pass	
Benzo(k)fluoranthene	S20-Ap22633	CP	%	78			70-130	Pass	
Chrysene	S20-Ap22633	CP	%	93			70-130	Pass	
Dibenz(a.h)anthracene	S20-Ap22633	CP	%	77			70-130	Pass	
Fluoranthene	S20-Ap22633	CP	%	78			70-130	Pass	
Fluorene	S20-Ap22633	CP	%	75			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S20-Ap22633	CP	%	73			70-130	Pass	
Naphthalene	S20-Ap22633	CP	%	71			70-130	Pass	
Phenanthrene	S20-Ap22633	CP	%	98			70-130	Pass	
Pyrene	S20-Ap22633	CP	%	78			70-130	Pass	
Spike - % Recovery									
				Result 1					
Ammonia (as N)	S20-Ap22633	CP	%	103			70-130	Pass	
Nitrate (as N)	S20-Ap22633	CP	%	98			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic (filtered)	S20-Ap22635	CP	%	101			70-130	Pass	
Cadmium (filtered)	S20-Ap22635	CP	%	103			70-130	Pass	
Chromium (filtered)	S20-Ap22635	CP	%	99			70-130	Pass	
Copper (filtered)	S20-Ap22635	CP	%	98			70-130	Pass	
Lead (filtered)	S20-Ap22635	CP	%	100			70-130	Pass	
Manganese (filtered)	S20-Ap22635	CP	%	93			70-130	Pass	
Nickel (filtered)	S20-Ap22635	CP	%	100			70-130	Pass	
Zinc (filtered)	S20-Ap22635	CP	%	102			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S20-Ap21783	NCP	%	100			75-125	Pass	
Cadmium	S20-Ap21783	NCP	%	93			75-125	Pass	
Chromium	S20-Ap21783	NCP	%	96			75-125	Pass	
Copper	S20-Ap21783	NCP	%	89			75-125	Pass	
Lead	S20-Ap21783	NCP	%	93			75-125	Pass	
Mercury	S20-Ap21783	NCP	%	100			70-130	Pass	
Nickel	S20-Ap21783	NCP	%	92			75-125	Pass	
Zinc	S20-Ap21783	NCP	%	92			75-125	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S20-Ap21946	NCP	%	113			70-130	Pass	
TRH C6-C10	S20-Ap21946	NCP	%	110			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S20-Ap21946	NCP	%	112			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S20-Ap21946	NCP	%	117			70-130	Pass	
Toluene	S20-Ap21946	NCP	%	119			70-130	Pass	
Ethylbenzene	S20-Ap21946	NCP	%	121			70-130	Pass	
m&p-Xylenes	S20-Ap21946	NCP	%	122			70-130	Pass	
o-Xylene	S20-Ap21946	NCP	%	121			70-130	Pass	
Xylenes - Total*	S20-Ap21946	NCP	%	122			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
				Result 1	Result 2	RPD			
Ferrous Iron - Fe2+	S20-Ap22625	CP	mg/L	5.0	4.8	5.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic (filtered)	S20-Ap22625	CP	mg/L	0.002	0.002	7.0	30%	Pass	
Cadmium (filtered)	S20-Ap22625	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium (filtered)	S20-Ap22625	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	S20-Ap22625	CP	mg/L	0.005	0.005	2.0	30%	Pass	
Lead (filtered)	S20-Ap22625	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese (filtered)	S20-Ap22625	CP	mg/L	0.27	0.26	<1	30%	Pass	
Mercury (filtered)	S20-Ap22625	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel (filtered)	S20-Ap22625	CP	mg/L	0.007	0.007	1.0	30%	Pass	
Zinc (filtered)	S20-Ap22625	CP	mg/L	0.054	0.053	2.0	30%	Pass	
Duplicate									
Alkali Metals				Result 1	Result 2	RPD			
Calcium	S20-Ap22626	CP	mg/L	12	12	2.0	30%	Pass	
Magnesium	S20-Ap22626	CP	mg/L	17	17	3.0	30%	Pass	
Potassium	S20-Ap22626	CP	mg/L	6.4	5.9	9.0	30%	Pass	
Sodium	S20-Ap22626	CP	mg/L	95	98	4.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chloride	S20-Ap22628	CP	mg/L	33	28	15	30%	Pass	
Sulphate (as SO4)	S20-Ap22628	CP	mg/L	47	49	5.0	30%	Pass	
Total Suspended Solids Dried at 103–105°C	S20-Ap22628	CP	mg/L	44	42	5.0	30%	Pass	
Duplicate									
Alkalinity (speciated)				Result 1	Result 2	RPD			
Bicarbonate Alkalinity (as CaCO3)	B20-Ap23953	NCP	mg/L	37	44	17	30%	Pass	
Carbonate Alkalinity (as CaCO3)	B20-Ap23953	NCP	mg/L	< 10	< 10	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Cyanide (total)	S20-Ap22629	CP	mg/L	< 0.004	< 0.004	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	S20-Ap22632	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	S20-Ap22632	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	S20-Ap22632	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	S20-Ap22632	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	S20-Ap22632	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	S20-Ap22632	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S20-Ap22632	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
4.4'-DDD	S20-Ap22632	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
4.4'-DDE	S20-Ap22632	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
4.4'-DDT	S20-Ap22632	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
a-BHC	S20-Ap22632	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Aldrin	S20-Ap22632	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
b-BHC	S20-Ap22632	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
d-BHC	S20-Ap22632	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Dieldrin	S20-Ap22632	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endosulfan I	S20-Ap22632	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Endosulfan II	S20-Ap22632	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endosulfan sulphate	S20-Ap22632	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endrin	S20-Ap22632	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endrin aldehyde	S20-Ap22632	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endrin ketone	S20-Ap22632	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
g-BHC (Lindane)	S20-Ap22632	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Heptachlor	S20-Ap22632	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Heptachlor epoxide	S20-Ap22632	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Hexachlorobenzene	S20-Ap22632	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Methoxychlor	S20-Ap22632	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	S20-Ap22632	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Bolstar	S20-Ap22632	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Chlorfenvinphos	S20-Ap22632	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Chlorpyrifos	S20-Ap22632	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Chlorpyrifos-methyl	S20-Ap22632	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Coumaphos	S20-Ap22632	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Demeton-S	S20-Ap22632	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Demeton-O	S20-Ap22632	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Diazinon	S20-Ap22632	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Dichlorvos	S20-Ap22632	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Dimethoate	S20-Ap22632	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Disulfoton	S20-Ap22632	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
EPN	S20-Ap22632	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethion	S20-Ap22632	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethoprop	S20-Ap22632	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethyl parathion	S20-Ap22632	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fenitrothion	S20-Ap22632	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fensulfothion	S20-Ap22632	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fenthion	S20-Ap22632	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Malathion	S20-Ap22632	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Merphos	S20-Ap22632	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Methyl parathion	S20-Ap22632	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Mevinphos	S20-Ap22632	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Monocrotophos	S20-Ap22632	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Naled	S20-Ap22632	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Omethoate	S20-Ap22632	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Phorate	S20-Ap22632	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Pirimiphos-methyl	S20-Ap22632	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Pyrazophos	S20-Ap22632	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ronnel	S20-Ap22632	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Terbufos	S20-Ap22632	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Tetrachlorvinphos	S20-Ap22632	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Tokuthion	S20-Ap22632	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Trichloronate	S20-Ap22632	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Duplicate									
Phenols (Halogenated)				Result 1	Result 2	RPD			
2-Chlorophenol	S20-Ap22632	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.4-Dichlorophenol	S20-Ap22632	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.4.5-Trichlorophenol	S20-Ap22632	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.4.6-Trichlorophenol	S20-Ap22632	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.6-Dichlorophenol	S20-Ap22632	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
4-Chloro-3-methylphenol	S20-Ap22632	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Phenols (Halogenated)				Result 1	Result 2	RPD			
Pentachlorophenol	S20-Ap22632	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Tetrachlorophenols - Total	S20-Ap22632	CP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
Duplicate									
Phenols (non-Halogenated)				Result 1	Result 2	RPD			
2-Cyclohexyl-4.6-dinitrophenol	S20-Ap22632	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
2-Methyl-4.6-dinitrophenol	S20-Ap22632	CP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
2-Methylphenol (o-Cresol)	S20-Ap22632	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2-Nitrophenol	S20-Ap22632	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.4-Dimethylphenol	S20-Ap22632	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.4-Dinitrophenol	S20-Ap22632	CP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	S20-Ap22632	CP	mg/L	0.060	0.051	16	30%	Pass	
4-Nitrophenol	S20-Ap22632	CP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
Dinoseb	S20-Ap22632	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Phenol	S20-Ap22632	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
TRH - 2013 NEPM Fractions (after silica gel clean-up)				Result 1	Result 2	RPD			
TRH >C10-C16 (after silica gel clean-up)	S20-Ap22632	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34 (after silica gel clean-up)	S20-Ap22632	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40 (after silica gel clean-up)	S20-Ap22632	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
TRH - 1999 NEPM Fractions (after silica gel clean-up)				Result 1	Result 2	RPD			
TRH C10-C36 (Total) (after silica gel clean-up)	S20-Ap22632	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C10-C14 (after silica gel clean-up)	S20-Ap22632	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28 (after silica gel clean-up)	S20-Ap22632	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36 (after silica gel clean-up)	S20-Ap22632	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons (Trace level)				Result 1	Result 2	RPD			
Acenaphthene	S20-Ap22632	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Acenaphthylene	S20-Ap22632	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Anthracene	S20-Ap22632	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Benz(a)anthracene	S20-Ap22632	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Benzo(a)pyrene	S20-Ap22632	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Benzo(b&j)fluoranthene	S20-Ap22632	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Benzo(g.h.i)perylene	S20-Ap22632	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Benzo(k)fluoranthene	S20-Ap22632	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Chrysene	S20-Ap22632	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Dibenz(a.h)anthracene	S20-Ap22632	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Fluoranthene	S20-Ap22632	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Fluorene	S20-Ap22632	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S20-Ap22632	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Naphthalene	S20-Ap22632	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Phenanthrene	S20-Ap22632	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Pyrene	S20-Ap22632	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Total Dissolved Solids Dried at 180°C ± 2°C	S20-Ap22632	CP	mg/L	950	910	4.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Ammonia (as N)	S20-Ap22633	CP	mg/L	0.26	0.24	8.0	30%	Pass	
Nitrate (as N)	S20-Ap22633	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	

Duplicate									
				Result 1	Result 2	RPD			
Total Suspended Solids Dried at 103–105°C	S20-Ap22635	CP	mg/L	120	160	26	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic (filtered)	S20-Ap22635	CP	mg/L	0.010	0.010	<1	30%	Pass	
Cadmium (filtered)	S20-Ap22635	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium (filtered)	S20-Ap22635	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	S20-Ap22635	CP	mg/L	< 0.001	0.001	13	30%	Pass	
Lead (filtered)	S20-Ap22635	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese (filtered)	S20-Ap22635	CP	mg/L	0.075	0.073	3.0	30%	Pass	
Mercury (filtered)	S20-Ap22635	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel (filtered)	S20-Ap22635	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc (filtered)	S20-Ap22635	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Ferrous Iron - Fe2+	S20-Ap22636	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Cyanide (total)	S20-Ap22637	CP	mg/L	< 0.004	< 0.004	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S20-Ap21783	NCP	mg/L	< 0.001	0.001	1.0	30%	Pass	
Cadmium	S20-Ap21783	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S20-Ap21783	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	S20-Ap21783	NCP	mg/L	0.001	0.001	3.0	30%	Pass	
Lead	S20-Ap21783	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury	S20-Ap21783	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S20-Ap21783	NCP	mg/L	0.002	0.002	1.0	30%	Pass	
Zinc	S20-Ap21783	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S20-Ap21945	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	S20-Ap21945	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S20-Ap21945	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S20-Ap21945	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S20-Ap21945	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S20-Ap21945	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S20-Ap21945	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S20-Ap21945	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total*	S20-Ap21945	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference.
R16	The LORs have been raised due to the high concentration of one or more analytes
R20	This sample is a Trip Spike and therefore all results are reported as a percentage

Authorised By

Alena Bounkeua	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)
Scott Beddoes	Senior Analyst-Inorganic (VIC)



Glenn Jackson
General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

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☑ **Sydney**
Unit F3 - 6 Building F, 16 Mars Road, Lane Cove
Phone: +612 9900 8400
Email: enviro.syd@mgtlabmark.com.au

☐ **Brisbane**
Unit 1-21 Smallwood Place, Murrarie
Phone: +617 3902 4600
Email: enviro.bris@mgtlabmark.com.au

☐ **Melbourne**
2 Kingston Town Close, Oakleigh, VIC 3166
Phone: +613 8564 5000 Fax: +613 8564 5090
Email: enquiries.melb@mgtlabmark.com.au

CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name : GHD Pty Ltd, Sydney	**Contact Name :** Terry Nham	**Purchase Order :**	**COC Number :**
Office Address : Level 15, 133 Castlereagh Street, Sydney NSW 2000	**Project Manager :** Henry Luo	**PROJECT Number :** 21-27234	**Eurofins | mgt quote ID :** GHD Rates 2020
	Email for results : terry.nham@ghd.com henry.luo@ghd.com	**PROJECT Name :** Central	**Data output format:** ESDAT

Special Directions & Comments :

Eurofins | mgt DI water batch number:

Analytes

	Sample ID	Date	Matrix	TRH, BTEXN, 8 Metals (Dissolved) (Suite B6)	PAH - Trace LOR	Phenols	[redacted] PCB (	TRH (with Silica Gel Cleanup)	Cyanide - Trace Level (<0.004 mg/L)	Ammonia	Major Anions and Cations	Ferrous Iron	Manganese	pH	TDS	TSS	TRH C6-C10 / BTEX	8 Metals (Total)
1	RB01	20/5	Water															X
2	Trip Blank	18/5	Water														X	
3	Trip Spike	18/5	Water														X	
4	~~SRT_BH050~~		~~Water~~	X	X	X	X	X	X	X	X	X	X	X	X	X		
5	~~SRT_BH060~~		~~Water~~	X	X	X	X	X	X	X	X	X	X	X	X	X		
6																		
7																		
8																		
9																		
10																		
11																		
12																		
13																		
14																		
15																		
16																		

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

	500P	250P	60P	1LA	40mL vial	200mL A	Jar	Bag
1			1					
2					2			
3					2			
4	1		4		2	2		
5	1		4		2	2		

Sample comments:

Relinquished By: Terry Nham - GHD
Date & Time : 20/5/2020
Signature:

Laboratory Staff
Received By:
Date & Time : 20/5/2020 3:10PM
Signature:

Turn around time
1 DAY ☐ 2 DAY ☐ 3 DAY ☐
5 DAY ☒ 10 DAY ☐ Other:

Method Of Shipment
☐ Courier
☒ Hand Delivered
☐ Postal
Courier Consignment # :

Temperature on arrival: 3.50°C
Report number: 10682

eurofins | mgt

Sydney ☑
Unit F3 - 6 Building F, 16 Mars Road, Lane Cove
Phone: +612 9900 8400
Email: enviro.syd@mgtlabmark.com.au

Brisbane ☐
Unit 1-21 Smallwood Place, Murrarie
Phone: +617 3902 4600
Email: enviro.bris@mgtlabmark.com.au

Melbourne ☐
2 Kingston Town Close, Oakleigh, VIC 3166
Phone: +613 8564 5000 Fax: +613 8564 5090
Email: enquiries.melb@mgtlabmark.com.au

CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name : GHD Pty Ltd, Sydney
Office Address : Level 15, 133 Castlereagh Street, Sydney NSW 2000
Contact Name : Terry Nham
Project Manager : Henry Luo
Email for results : terry.nham@ghd.com henry.luo@ghd.com
Purchase Order :
PROJECT Number : 21-27234
PROJECT Name : Central
COC Number :
Eurofins | mgt quote ID : GHD Rates 2020
Data output format: ESDAT

Special Directions & Comments :

Eurofins | mgt DI water batch number: 50215

Analytes

	Sample ID	Date	Matrix	TRH, BTEXN, 8 Metals (Dissolved) (Suite B6)	PAH - Trace LOR	Phenols	[redacted], PCB	TRH (with Silica Gel Cleanup)	Cyanide - Trace Level (<0.004 mg/L)	Ammonia	Major Anions and Cations	Ferrous Iron	Manganese	pH	TDS	TSS	TRH C6-C10 / BTEX	8 Metals (Total)
1	CSM_BH02	19/5	Water	X	X	X	X	X	X	X	X	X	X	X	X	X		
2	CSM_BH04	19/5	Water	X	X	X	X	X	X	X	X	X	X	X	X	X		
3	CSM_BH06	19/5	Water	X	X	X	X	X	X	X	X	X	X	X	X	X		
4	CSM_BH08	18/5	Water	X	X	X	X	X	X	X	X	X	X	X	X	X		
5	CSM_BH09S	20/5	Water	X	X	X	X	X	X	X	X	X	X	X	X	X		
6	CSM_BH10S	18/5	Water	X	X	X	X	X	X	X	X	X	X	X	X	X		
7	SRT_BH047	18/5	Water	X	X	X	X	X	X	X	X	X	X	X	X	X		
8	SRT_BH052	18/5	Water	X	X	X	X	X	X	X	X	X	X	X	X	X		
9	SRT_BH059	18/5	Water	X	X	X	X	X	X	X	X	X	X	X	X	X		
10	[redacted]		Water	X	X	X	X	X	X	X	X	X	X	X	X	X		
11	GASW_BH10	19/5	Water	X	X	X		X	X	X	X	X	X	X	X	X		
12	GASW_BH11	20/5	Water	X	X	X		X	X	X	X	X	X	X	X	X		
13	GASW_BH23	20/5	Water	X	X	X		X	X	X	X	[redacted]						
14	GASW_BH25a	20/5	Water	X	X	X		X	X	X	X	X	X	X	X	X		
15	QC01		Water	PLEASE SEND TO ALS WITH ATTACHED COC														
16	QC02	18/5	Water	X	X													

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

	500P	250P	60P	1LA	40mL vial	200mL A	Jar	Bag
1	1		4		2	2		
2	1		4		2	2		
3	1		4		2	2		
4	1		4		2	2		
5	1		4		2	2		
6	1		4		2	2		
7	1		4		2	2		
8	1		4		2	2		
9	1		4		2	2		
10	[redacted]							
11	1		4		2	2		
12	1		4		2	2		
13	[redacted]		3		2	[redacted]		
14	1		4		2	2		
15	[redacted]							
16	1		4		2	2		

Sample comments:

Relinquished By: Terry Nham - GHD
Date & Time : 20/5/2020
Signature:

Laboratory Staff
Received By:
Date & Time : 20/5/2020 3:07PM
Signature:

Turn around time
1 DAY ☐ 2 DAY ☐ 3 DAY ☐
5 DAY ☒ 10 DAY ☐ Other:

Method Of Shipment
☐ Courier
☒ Hand Delivered
☐ Postal
Courier Consignment # :

Temperature on arrival: 3.5°C
Report number: 720682

eurofins | Environment Testing

Melbourne
6 Monterey Road
Dandenong South Vic 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com web : www.eurofins.com.au

Sample Receipt Advice

Company name:	**GHD Pty Ltd NSW**
Contact name:	Henry Luo
Project name:	CENTRAL
Project ID:	21-27234
COC number:	Not provided
Turn around time:	5 Day
Date/Time received:	May 20, 2020 3:07 PM
Eurofins reference:	**720682**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ Sample Temperature of a random sample selected from the batch as recorded by Eurofins Sample Receipt : 3.5 degrees Celsius.

☑ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☑ Appropriately preserved sample containers have been used.

☑ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Appropriate sample containers have been used.

☑ Sample containers for volatile analysis received with zero headspace.

☒ Split sample sent to requested external lab.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Notes

Unpreserved bottle not received for sample ID; GASW_BH23, anion analysis cancelled.

Contact notes

If you have any questions with respect to these samples please contact:

Alena Bounkeua on Phone : or by e.mail: AlenaBounkeua@eurofins.com

Results will be delivered electronically via e.mail to Henry Luo - henry.luo@ghd.com.

Note: A copy of these results will also be delivered to the general GHD Pty Ltd NSW email address.

eurofins | Environment Testing

ABN – 50 005 085 521 web : www.eurofins.com.au e.mail : EnviroSales@eurofins.com

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: GHD Pty Ltd NSW
Address: Level 15, 133 Castlereagh Street
Sydney
NSW 2000

Project Name: CENTRAL
Project ID: 21-27234

Order No.:
Report #: 720682
Phone: 02 9239 7100
Fax: 02 9239 7199

Received: May 20, 2020 3:07 PM
Due: May 27, 2020
Priority: 5 Day
Contact Name: Henry Luo

Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail						Cyanide (total)	Ferrous Iron - Fe2+	Manganese	pH (at 25°C)	Total Suspended Solids Dried at 103–105°C	Metals M8	Phenols (IWRG 621)	Major Anions	Major Cations	TRH (after Silica Gel cleanup)	Eurofins | mgt Suite B6 (filtered metals)	BTEXN and Volatile TRH	Polycyclic Aromatic Hydrocarbons (Trace level)	Total Dissolved Solids Dried at 180°C ± 2°C
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217																			
Brisbane Laboratory - NATA Site # 20794																			
Perth Laboratory - NATA Site # 23736																			
External Laboratory																			
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**														
1	CSM_BH02	May 19, 2020		Water	S20-My29272	X	X	X	X	X		X	X	X	X	X		X	X
2	CSM_BH06	May 19, 2020		Water	S20-My29273	X	X	X	X	X		X	X	X	X	X		X	X
3	CSM_BH08	May 18, 2020		Water	S20-My29274	X	X	X	X	X		X	X	X	X	X		X	X
4	CSM_BH09S	May 20, 2020		Water	S20-My29275	X	X	X	X	X		X	X	X	X	X		X	X
5	CSM_BH10S	May 18, 2020		Water	S20-My29276	X	X	X	X	X		X	X	X	X	X		X	X
6	SRT_BH047	May 18, 2020		Water	S20-My29277	X	X	X	X	X		X	X	X	X	X		X	X
7	SRT_BH052	May 18, 2020		Water	S20-My29278	X	X	X	X	X		X	X	X	X	X		X	X
8	SRT_BH059	May 18, 2020		Water	S20-My29279	X	X	X	X	X		X	X	X	X	X		X	X
9	GASW_BH10	May 19, 2020		Water	S20-My29280	X	X	X	X	X		X	X	X	X	X		X	X
10	GASW_BH11	May 20, 2020		Water	S20-My29281	X	X	X	X	X		X	X	X	X	X		X	X

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ABN – 50 005 085 521 web : www.eurofins.com.au e.mail : EnviroSales@eurofins.com

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

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Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
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2/91 Leach Highway
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Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: GHD Pty Ltd NSW
Address: Level 15, 133 Castlereagh Street
Sydney
NSW 2000

Project Name: CENTRAL
Project ID: 21-27234

Order No.:
Report #: 720682
Phone: 02 9239 7100
Fax: 02 9239 7199

Received: May 20, 2020 3:07 PM
Due: May 27, 2020
Priority: 5 Day
Contact Name: Henry Luo

Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail						Cyanide (total)	Ferrous Iron - Fe2+	Manganese	pH (at 25°C)	Total Suspended Solids Dried at 103–105°C	Metals M8	Phenols (IWRG 621)	Major Anions	Major Cations	TRH (after Silica Gel cleanup)	Eurofins | mgt Suite B6 (filtered metals)	BTEXN and Volatile TRH	Polycyclic Aromatic Hydrocarbons (Trace level)	Total Dissolved Solids Dried at 180°C ± 2°C
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217																			
Brisbane Laboratory - NATA Site # 20794																			
Perth Laboratory - NATA Site # 23736																			
11	GASW_BH23	May 20, 2020		Water	S20-My29282	X						X		X	X	X		X	
12	GASW_BH25A	May 20, 2020		Water	S20-My29283	X	X	X	X	X		X	X	X	X	X		X	X
13	QC02	May 20, 2020		Water	S20-My29284											X		X	
14	RB01	May 20, 2020		Water	S20-My29285						X								
15	TRIP BLANK	May 18, 2020		Water	S20-My29286												X		
16	TRIP SPIKE	May 18, 2020		Water	S20-My29287												X		
17	CSM_BH04	May 20, 2020		Water	S20-My29288	X	X	X	X	X		X	X	X	X	X		X	X
Test Counts						13	12	12	12	12	1	13	12	13	13	14	2	14	12

GHD Pty Ltd NSW
Level 15, 133 Castlereagh Street
Sydney
NSW 2000

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Attention: **Henry Luo**

Report **720682-W**
Project name CENTRAL
Project ID 21-27234
Received Date May 20, 2020

Client Sample ID			**CSM_BH02**	**CSM_BH06**	**CSM_BH08**	**CSM_BH09S**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**S20-My29272**	**S20-My29273**	**S20-My29274**	**S20-My29275**
Date Sampled			**May 19, 2020**	**May 19, 2020**	**May 18, 2020**	**May 20, 2020**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	92	99	95	101
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenols (Halogenated)						
2-Chlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.6-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachlorophenols - Total	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Total Halogenated Phenol*	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01

Client Sample ID			CSM_BH02	CSM_BH06	CSM_BH08	CSM_BH09S
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-My29272	S20-My29273	S20-My29274	S20-My29275
Date Sampled			May 19, 2020	May 19, 2020	May 18, 2020	May 20, 2020
Test/Reference	LOR	Unit				
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2-Nitrophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4-Dimethylphenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006	< 0.006	< 0.006	< 0.006
4-Nitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Dinoseb	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
Total Non-Halogenated Phenol*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol-d6 (surr.)	1	%	24	35	28	32
TRH - 2013 NEPM Fractions (after silica gel clean-up)						
TRH >C10-C16 (after silica gel clean-up)	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C16-C34 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C34-C40 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH - 1999 NEPM Fractions (after silica gel clean-up)						
TRH C10-C36 (Total) (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C10-C14 (after silica gel clean-up)	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH C15-C28 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C29-C36 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Polycyclic Aromatic Hydrocarbons (Trace level)						
Acenaphthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Acenaphthylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benz(a)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(a)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(b&j)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(g.h.i)perylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(k)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Chrysene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Dibenz(a.h)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Fluorene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Indeno(1.2.3-cd)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Naphthalene	0.00001	mg/L	< 0.00001	< 0.00001	0.00005	< 0.00001
Phenanthrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Total PAH*	0.00001	mg/L	< 0.00001	< 0.00001	0.00005	< 0.00001
2-Fluorobiphenyl (surr.)	1	%	77	53	66	52
p-Terphenyl-d14 (surr.)	1	%	52	65	80	66
Ammonia (as N)	0.01	mg/L	0.03	0.11	0.02	0.05
Chloride	1	mg/L	150	180	79	47
Cyanide (total)	0.004	mg/L	< 0.004	< 0.004	< 0.004	< 0.004
Ferrous Iron - Fe2+	0.05	mg/L	1.4	6.7	4.9	8.2
Nitrate (as N)	0.02	mg/L	0.09	< 0.02	0.07	< 0.02
pH (at 25°C)	0.1	pH Units	7.5	6.7	6.4	6.4
Sulphate (as SO4)	5	mg/L	29	28	42	120

Client Sample ID			CSM_BH02	CSM_BH06	CSM_BH08	CSM_BH09S
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-My29272	S20-My29273	S20-My29274	S20-My29275
Date Sampled			May 19, 2020	May 19, 2020	May 18, 2020	May 20, 2020
Test/Reference	LOR	Unit				
Total Dissolved Solids Dried at 180°C ± 2°C	10	mg/L	660	390	230	250
Total Suspended Solids Dried at 103–105°C	1	mg/L	1600	57	11	140
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	410	150	100	82
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10	< 10	< 10	< 10
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	0.001	0.002	< 0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.010	0.005	0.007	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Manganese	0.005	mg/L	0.63	0.31	0.29	0.81
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.014	0.022	0.005	0.003
Zinc (filtered)	0.005	mg/L	0.035	0.011	0.015	0.010
Alkali Metals						
Calcium	0.5	mg/L	44	28	9.0	3.0
Magnesium	0.5	mg/L	38	28	13	5.2
Potassium	0.5	mg/L	5.1	4.2	3.1	2.5
Sodium	0.5	mg/L	110	100	72	97

Client Sample ID			CSM_BH10S	SRT_BH047	SRT_BH052	SRT_BH059
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-My29276	S20-My29277	S20-My29278	S20-My29279
Date Sampled			May 18, 2020	May 18, 2020	May 18, 2020	May 18, 2020
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	96	97	94	94
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID			CSM_BH10S	SRT_BH047	SRT_BH052	SRT_BH059
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-My29276	S20-My29277	S20-My29278	S20-My29279
Date Sampled			May 18, 2020	May 18, 2020	May 18, 2020	May 18, 2020
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenols (Halogenated)						
2-Chlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.6-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachlorophenols - Total	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Total Halogenated Phenol*	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2-Nitrophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4-Dimethylphenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006	< 0.006	< 0.006	< 0.006
4-Nitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Dinoseb	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
Total Non-Halogenated Phenol*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol-d6 (surr.)	1	%	52	60	59	66
TRH - 2013 NEPM Fractions (after silica gel clean-up)						
TRH >C10-C16 (after silica gel clean-up)	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C16-C34 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C34-C40 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH - 1999 NEPM Fractions (after silica gel clean-up)						
TRH C10-C36 (Total) (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C10-C14 (after silica gel clean-up)	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH C15-C28 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C29-C36 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Polycyclic Aromatic Hydrocarbons (Trace level)						
Acenaphthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Acenaphthylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benz(a)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(a)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(b&j)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(g.h.i)perylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(k)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Chrysene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Dibenz(a.h)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Fluorene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Indeno(1.2.3-cd)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Naphthalene	0.00001	mg/L	0.00010	< 0.00001	< 0.00001	< 0.00001

Client Sample ID			CSM_BH10S	SRT_BH047	SRT_BH052	SRT_BH059
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-My29276	S20-My29277	S20-My29278	S20-My29279
Date Sampled			May 18, 2020	May 18, 2020	May 18, 2020	May 18, 2020
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons (Trace level)						
Phenanthrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Total PAH*	0.00001	mg/L	0.0001	< 0.00001	< 0.00001	< 0.00001
2-Fluorobiphenyl (surr.)	1	%	57	56	57	63
p-Terphenyl-d14 (surr.)	1	%	56	60	57	63
Ammonia (as N)	0.01	mg/L	0.01	0.02	< 0.01	< 0.01
Chloride	1	mg/L	19	22	40	7.0
Cyanide (total)	0.004	mg/L	< 0.004	< 0.004	< 0.004	< 0.004
Ferrous Iron - Fe2+	0.05	mg/L	0.12	0.16	< 0.05	0.05
Nitrate (as N)	0.02	mg/L	2.1	21	8.4	1.9
pH (at 25°C)	0.1	pH Units	6.3	6.9	6.5	7.2
Sulphate (as SO4)	5	mg/L	51	13	30	14
Total Dissolved Solids Dried at 180°C ± 2°C	10	mg/L	150	210	260	140
Total Suspended Solids Dried at 103–105°C	1	mg/L	160	13	210	34
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	57	110	75	320
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10	< 10	< 10	< 10
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.01	< 0.01	< 0.01
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.002	< 0.002	< 0.002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.01	< 0.01	< 0.01
Copper (filtered)	0.001	mg/L	0.003	< 0.01	< 0.01	0.012
Lead (filtered)	0.001	mg/L	< 0.001	< 0.01	< 0.01	< 0.01
Manganese	0.005	mg/L	0.50	< 0.05	0.14	0.54
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.001	< 0.001	< 0.001
Nickel (filtered)	0.001	mg/L	0.001	< 0.01	< 0.01	< 0.01
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.05	< 0.05	< 0.05
Alkali Metals						
Calcium	0.5	mg/L	13	36	29	59
Magnesium	0.5	mg/L	6.0	12	< 5	9.8
Potassium	0.5	mg/L	3.1	< 5	< 5	7.3
Sodium	0.5	mg/L	30	30	50	15

Client Sample ID			GASW_BH10	GASW_BH11	R16GASW_BH23	R16GASW_BH25A
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-My29280	S20-My29281	S20-My29282	S20-My29283
Date Sampled			May 19, 2020	May 20, 2020	May 20, 2020	May 20, 2020
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	0.75	61
TRH C10-C14	0.05	mg/L	< 0.05	0.35	0.31	1.2
TRH C15-C28	0.1	mg/L	< 0.1	0.5	0.4	1.0
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	0.85	0.71	2.2

Client Sample ID			GASW_BH10	GASW_BH11	R16GASW_BH23	R16GASW_BH25A
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-My29280	S20-My29281	S20-My29282	S20-My29283
Date Sampled			May 19, 2020	May 20, 2020	May 20, 2020	May 20, 2020
Test/Reference	LOR	Unit				
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	0.47	26
Toluene	0.001	mg/L	< 0.001	< 0.001	0.017	12
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	0.008	0.56
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	0.010	1.3
o-Xylene	0.001	mg/L	< 0.001	< 0.001	0.007	0.72
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	0.017	2.0
4-Bromofluorobenzene (surr.)	1	%	101	98	96	98
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	< 0.04	< 2
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	0.75	61
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	0.24	20
TRH >C10-C16	0.05	mg/L	< 0.05	0.58	0.37	1.1
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	0.58	0.37	< 2
TRH >C16-C34	0.1	mg/L	< 0.1	0.3	0.3	0.8
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	0.88	0.67	1.9
Phenols (Halogenated)						
2-Chlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.6-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachlorophenols - Total	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Total Halogenated Phenol*	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	< 0.003	< 0.003	0.016
2-Nitrophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4-Dimethylphenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	0.006
2.4-Dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	0.045	< 0.006	< 0.006	0.014
4-Nitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Dinoseb	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	0.037
Total Non-Halogenated Phenol*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol-d6 (surr.)	1	%	67	61	30	94
TRH - 2013 NEPM Fractions (after silica gel clean-up)						
TRH >C10-C16 (after silica gel clean-up)	0.05	mg/L	< 0.05	0.23	< 0.05	0.33
TRH >C16-C34 (after silica gel clean-up)	0.1	mg/L	< 0.1	0.1	< 0.1	0.2
TRH >C34-C40 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH - 1999 NEPM Fractions (after silica gel clean-up)						
TRH C10-C36 (Total) (after silica gel clean-up)	0.1	mg/L	< 0.1	0.32	< 0.1	0.67
TRH C10-C14 (after silica gel clean-up)	0.05	mg/L	< 0.05	0.12	< 0.05	0.47
TRH C15-C28 (after silica gel clean-up)	0.1	mg/L	< 0.1	0.2	< 0.1	0.2
TRH C29-C36 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID			GASW_BH10	GASW_BH11	R16GASW_BH23	R16GASW_BH25A
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-My29280	S20-My29281	S20-My29282	S20-My29283
Date Sampled			May 19, 2020	May 20, 2020	May 20, 2020	May 20, 2020
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons (Trace level)						
Acenaphthene	0.00001	mg/L	< 0.00001	< 0.00001	0.00021	0.0012
Acenaphthylene	0.00001	mg/L	< 0.00001	< 0.00001	0.00004	0.00048
Anthracene	0.00001	mg/L	< 0.00001	< 0.00001	0.00030	0.0015
Benz(a)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	0.00015	0.00046
Benzo(a)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	0.00017	0.00052
Benzo(b&j)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	0.00016	0.00037
Benzo(g.h.i)perylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	0.00005
Benzo(k)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	0.00013	0.00026
Chrysene	0.00001	mg/L	< 0.00001	< 0.00001	0.00015	0.00052
Dibenz(a.h)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	0.00060	0.0017
Fluorene	0.00001	mg/L	< 0.00001	< 0.00001	0.00042	0.0020
Indeno(1.2.3-cd)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	0.00005
Naphthalene	0.00001	mg/L	< 0.00001	< 0.00001	0.00061	0.028
Phenanthrene	0.00001	mg/L	< 0.00001	< 0.00001	0.0010	0.0046
Pyrene	0.00001	mg/L	< 0.00001	< 0.00001	0.00078	0.0024
Total PAH*	0.00001	mg/L	< 0.00001	< 0.00001	0.00472	0.04411
2-Fluorobiphenyl (surr.)	1	%	64	60	74	61
p-Terphenyl-d14 (surr.)	1	%	60	66	82	65
Ammonia (as N)	0.01	mg/L	< 0.01	0.32	0.50	0.25
Chloride	1	mg/L	160	35	-	13
Cyanide (total)	0.004	mg/L	< 0.004	< 0.004	< 0.004	0.025
Ferrous Iron - Fe2+	0.05	mg/L	12	2.1	-	0.72
Nitrate (as N)	0.02	mg/L	< 0.02	< 0.02	-	< 0.02
pH (at 25°C)	0.1	pH Units	7.0	6.8	-	7.2
Sulphate (as SO4)	5	mg/L	< 5	46	-	38
Total Dissolved Solids Dried at 180°C ± 2°C	10	mg/L	760	270	-	180
Total Suspended Solids Dried at 103–105°C	1	mg/L	980	1800	-	800
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	580	200	-	190
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10	< 10	-	< 10
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.01	< 0.01	0.007	0.012
Cadmium (filtered)	0.0002	mg/L	< 0.002	< 0.002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.01	< 0.01	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	< 0.01	0.015	0.008	0.001
Lead (filtered)	0.001	mg/L	< 0.01	< 0.01	< 0.001	< 0.001
Manganese	0.005	mg/L	0.50	1.1	-	0.37
Mercury (filtered)	0.0001	mg/L	< 0.001	< 0.001	< 0.0001	0.0003
Nickel (filtered)	0.001	mg/L	0.036	0.017	0.006	< 0.001
Zinc (filtered)	0.005	mg/L	< 0.05	0.12	0.041	< 0.005
Alkali Metals						
Calcium	0.5	mg/L	100	27	80	64
Magnesium	0.5	mg/L	65	6.9	< 5	< 5
Potassium	0.5	mg/L	14	< 5	20	5.2
Sodium	0.5	mg/L	160	47	37	23

Client Sample ID			QC02	RB01	TRIP BLANK	[R20]TRIP SPIKE
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-My29284	S20-My29285	S20-My29286	S20-My29287
Date Sampled			May 20, 2020	May 20, 2020	May 18, 2020	May 18, 2020
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	-	< 0.02	84
TRH C10-C14	0.05	mg/L	< 0.05	-	-	-
TRH C15-C28	0.1	mg/L	< 0.1	-	-	-
TRH C29-C36	0.1	mg/L	< 0.1	-	-	-
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	-	-	-
BTEX						
Benzene	0.001	mg/L	< 0.001	-	< 0.001	110
Toluene	0.001	mg/L	< 0.001	-	< 0.001	110
Ethylbenzene	0.001	mg/L	< 0.001	-	< 0.001	110
m&p-Xylenes	0.002	mg/L	< 0.002	-	< 0.002	100
o-Xylene	0.001	mg/L	< 0.001	-	< 0.001	110
Xylenes - Total*	0.003	mg/L	< 0.003	-	< 0.003	110
4-Bromofluorobenzene (surr.)	1	%	98	-	90	98
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	< 0.01	-	< 0.01	96
TRH C6-C10	0.02	mg/L	< 0.02	-	< 0.02	83
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	-	< 0.02	-
TRH >C10-C16	0.05	mg/L	< 0.05	-	-	-
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	-	-	-
TRH >C16-C34	0.1	mg/L	< 0.1	-	-	-
TRH >C34-C40	0.1	mg/L	< 0.1	-	-	-
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	-	-	-
Polycyclic Aromatic Hydrocarbons (Trace level)						
Acenaphthene	0.00001	mg/L	< 0.00001	-	-	-
Acenaphthylene	0.00001	mg/L	< 0.00001	-	-	-
Anthracene	0.00001	mg/L	< 0.00001	-	-	-
Benz(a)anthracene	0.00001	mg/L	< 0.00001	-	-	-
Benzo(a)pyrene	0.00001	mg/L	< 0.00001	-	-	-
Benzo(b&j)fluoranthene	0.00001	mg/L	< 0.00001	-	-	-
Benzo(g.h.i)perylene	0.00001	mg/L	< 0.00001	-	-	-
Benzo(k)fluoranthene	0.00001	mg/L	< 0.00001	-	-	-
Chrysene	0.00001	mg/L	< 0.00001	-	-	-
Dibenz(a.h)anthracene	0.00001	mg/L	< 0.00001	-	-	-
Fluoranthene	0.00001	mg/L	< 0.00001	-	-	-
Fluorene	0.00001	mg/L	< 0.00001	-	-	-
Indeno(1.2.3-cd)pyrene	0.00001	mg/L	< 0.00001	-	-	-
Naphthalene	0.00001	mg/L	< 0.00001	-	-	-
Phenanthrene	0.00001	mg/L	< 0.00001	-	-	-
Pyrene	0.00001	mg/L	< 0.00001	-	-	-
Total PAH*	0.00001	mg/L	< 0.00001	-	-	-
2-Fluorobiphenyl (surr.)	1	%	81	-	-	-
p-Terphenyl-d14 (surr.)	1	%	66	-	-	-
Heavy Metals						
Arsenic	0.001	mg/L	-	< 0.001	-	-
Arsenic (filtered)	0.001	mg/L	< 0.01	-	-	-
Cadmium	0.0002	mg/L	-	< 0.0002	-	-
Cadmium (filtered)	0.0002	mg/L	< 0.002	-	-	-
Chromium	0.001	mg/L	-	< 0.001	-	-
Chromium (filtered)	0.001	mg/L	< 0.01	-	-	-

Client Sample ID			QC02	RB01	TRIP BLANK	[R20]TRIP SPIKE
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-My29284	S20-My29285	S20-My29286	S20-My29287
Date Sampled			May 20, 2020	May 20, 2020	May 18, 2020	May 18, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Copper	0.001	mg/L	-	< 0.001	-	-
Copper (filtered)	0.001	mg/L	0.011	-	-	-
Lead	0.001	mg/L	-	< 0.001	-	-
Lead (filtered)	0.001	mg/L	< 0.01	-	-	-
Mercury	0.0001	mg/L	-	< 0.0001	-	-
Mercury (filtered)	0.0001	mg/L	< 0.001	-	-	-
Nickel	0.001	mg/L	-	< 0.001	-	-
Nickel (filtered)	0.001	mg/L	< 0.01	-	-	-
Zinc	0.005	mg/L	-	< 0.005	-	-
Zinc (filtered)	0.005	mg/L	< 0.05	-	-	-

Client Sample ID			CSM_BH04
Sample Matrix			Water
Eurofins Sample No.			S20-My29288
Date Sampled			May 20, 2020
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C6-C9	0.02	mg/L	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1
BTEX			
Benzene	0.001	mg/L	< 0.001
Toluene	0.001	mg/L	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002
o-Xylene	0.001	mg/L	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003
4-Bromofluorobenzene (surr.)	1	%	92
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene[N02]	0.01	mg/L	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1
Phenols (Halogenated)			
2-Chlorophenol	0.003	mg/L	< 0.003
2.4-Dichlorophenol	0.003	mg/L	< 0.003
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01
2.6-Dichlorophenol	0.003	mg/L	< 0.003
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01
Pentachlorophenol	0.01	mg/L	< 0.01
Tetrachlorophenols - Total	0.03	mg/L	< 0.03
Total Halogenated Phenol*	0.01	mg/L	< 0.01

Client Sample ID			CSM_BH04
Sample Matrix			Water
Eurofins Sample No.			S20-My29288
Date Sampled			May 20, 2020
Test/Reference	LOR	Unit	
Phenols (non-Halogenated)			
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	< 0.1
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003
2-Nitrophenol	0.01	mg/L	< 0.01
2.4-Dimethylphenol	0.003	mg/L	< 0.003
2.4-Dinitrophenol	0.03	mg/L	< 0.03
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006
4-Nitrophenol	0.03	mg/L	< 0.03
Dinoseb	0.1	mg/L	< 0.1
Phenol	0.003	mg/L	< 0.003
Total Non-Halogenated Phenol*	0.1	mg/L	< 0.1
Phenol-d6 (surr.)	1	%	43
TRH - 2013 NEPM Fractions (after silica gel clean-up)			
TRH >C10-C16 (after silica gel clean-up)	0.05	mg/L	< 0.05
TRH >C16-C34 (after silica gel clean-up)	0.1	mg/L	< 0.1
TRH >C34-C40 (after silica gel clean-up)	0.1	mg/L	< 0.1
TRH - 1999 NEPM Fractions (after silica gel clean-up)			
TRH C10-C36 (Total) (after silica gel clean-up)	0.1	mg/L	< 0.1
TRH C10-C14 (after silica gel clean-up)	0.05	mg/L	< 0.05
TRH C15-C28 (after silica gel clean-up)	0.1	mg/L	< 0.1
TRH C29-C36 (after silica gel clean-up)	0.1	mg/L	< 0.1
Polycyclic Aromatic Hydrocarbons (Trace level)			
Acenaphthene	0.00001	mg/L	< 0.00001
Acenaphthylene	0.00001	mg/L	< 0.00001
Anthracene	0.00001	mg/L	< 0.00001
Benz(a)anthracene	0.00001	mg/L	< 0.00001
Benzo(a)pyrene	0.00001	mg/L	< 0.00001
Benzo(b&j)fluoranthene	0.00001	mg/L	< 0.00001
Benzo(g.h.i)perylene	0.00001	mg/L	< 0.00001
Benzo(k)fluoranthene	0.00001	mg/L	< 0.00001
Chrysene	0.00001	mg/L	< 0.00001
Dibenz(a.h)anthracene	0.00001	mg/L	< 0.00001
Fluoranthene	0.00001	mg/L	< 0.00001
Fluorene	0.00001	mg/L	< 0.00001
Indeno(1.2.3-cd)pyrene	0.00001	mg/L	< 0.00001
Naphthalene	0.00001	mg/L	< 0.00001
Phenanthrene	0.00001	mg/L	< 0.00001
Pyrene	0.00001	mg/L	< 0.00001
Total PAH*	0.00001	mg/L	< 0.00001
2-Fluorobiphenyl (surr.)	1	%	94
p-Terphenyl-d14 (surr.)	1	%	52
Ammonia (as N)	0.01	mg/L	< 0.01
Chloride	1	mg/L	76
Cyanide (total)	0.004	mg/L	< 0.004
Ferrous Iron - Fe2+	0.05	mg/L	8.2
Nitrate (as N)	0.02	mg/L	< 0.02
pH (at 25°C)	0.1	pH Units	6.3
Sulphate (as SO4)	5	mg/L	35

Client Sample ID			CSM_BH04
Sample Matrix			**Water**
Eurofins Sample No.			**S20-My29288**
Date Sampled			**May 20, 2020**
Test/Reference	LOR	Unit	
Total Dissolved Solids Dried at 180°C ± 2°C	10	mg/L	260
Total Suspended Solids Dried at 103–105°C	1	mg/L	2000
Alkalinity (speciated)			
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	130
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10
Heavy Metals			
Arsenic (filtered)	0.001	mg/L	< 0.01
Cadmium (filtered)	0.0002	mg/L	< 0.002
Chromium (filtered)	0.001	mg/L	< 0.01
Copper (filtered)	0.001	mg/L	< 0.01
Lead (filtered)	0.001	mg/L	< 0.01
Manganese	0.005	mg/L	1.7
Mercury (filtered)	0.0001	mg/L	< 0.001
Nickel (filtered)	0.001	mg/L	0.026
Zinc (filtered)	0.005	mg/L	< 0.05
Alkali Metals			
Calcium	0.5	mg/L	8.8
Magnesium	0.5	mg/L	16
Potassium	0.5	mg/L	< 5
Sodium	0.5	mg/L	77

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	May 21, 2020	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Melbourne	May 21, 2020	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	May 21, 2020	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons	Melbourne	May 21, 2020	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Eurofins | mgt Suite B6 (filtered metals)			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	May 21, 2020	
- Method: LTM-ORG-2010 TRH C6-C40			
Metals M8 filtered	Melbourne	May 21, 2020	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Phenols (IWRG 621)			
Phenols (Halogenated)	Melbourne	May 21, 2020	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (non-Halogenated)	Melbourne	May 21, 2020	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
TRH - 2013 NEPM Fractions (after silica gel clean-up)	Melbourne	May 21, 2020	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
TRH - 1999 NEPM Fractions (after silica gel clean-up)	Melbourne	May 21, 2020	7 Days
- Method: TRH C6-C36 (Silica Gel Cleanup) - MGT 100A			
Polycyclic Aromatic Hydrocarbons (Trace level)	Melbourne	May 21, 2020	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water (trace)			
Cyanide (total)	Melbourne	May 21, 2020	14 Days
- Method: LTM-INO-4020 Total Free WAD Cyanide by CFA			
Ferrous Iron - Fe2+	Melbourne	May 21, 2020	7 Days
- Method: LTM-INO-4190 Ferrous Iron in Water by Discrete Analyser			
pH (at 25°C)	Melbourne	May 21, 2020	0 Hours
- Method: LTM-GEN-7090 pH in water by ISE			
Total Suspended Solids Dried at 103–105°C	Melbourne	May 21, 2020	7 Days
- Method: LTM-INO-4070 Analysis of Suspended Solids in Water by Gravimetry			
Metals M8	Melbourne	May 21, 2020	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Heavy Metals	Melbourne	May 21, 2020	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Major Cations			
Ammonia (as N)	Melbourne	May 21, 2020	28 Days
- Method: APHA 4500-NH3 Ammonia Nitrogen by FIA			
Alkali Metals	Melbourne	May 21, 2020	180 Days
- Method: LTM-MET-3010 Alkali Metals Sulfur Silicon Phosphorus by ICP-AES			
Major Anions			
Chloride	Melbourne	May 21, 2020	28 Days
- Method: LTM-INO-4090 Chloride by Discrete Analyser			
Nitrate (as N)	Melbourne	May 21, 2020	28 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Sulphate (as SO4)	Melbourne	May 21, 2020	28 Days
- Method: LTM-INO-4110 Sulfate by Discrete Analyser			
Alkalinity (speciated)	Melbourne	May 21, 2020	14 Days
- Method: LTM-INO-4250 Alkalinity by Electrometric Titration			

Description	Testing Site	Extracted	Holding Time
Total Dissolved Solids Dried at 180°C ± 2°C - Method: LTM-INO-4170 Total Dissolved Solids in Water	Melbourne	May 21, 2020	7 Days

eurofins | Environment Testing

ABN – 50 005 085 521 web : www.eurofins.com.au e.mail : EnviroSales@eurofins.com

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: GHD Pty Ltd NSW
Address: Level 15, 133 Castlereagh Street
Sydney
NSW 2000

Project Name: CENTRAL
Project ID: 21-27234

Order No.:
Report #: 720682
Phone: 02 9239 7100
Fax: 02 9239 7199

Received: May 20, 2020 3:07 PM
Due: May 27, 2020
Priority: 5 Day
Contact Name: Henry Luo

Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail						Cyanide (total)	Ferrous Iron - Fe2+	Manganese	pH (at 25°C)	Total Suspended Solids Dried at 103–105°C	Metals M8	Phenols (IWRG 621)	Major Anions	Major Cations	TRH (after Silica Gel cleanup)	Eurofins | mgt Suite B6 (filtered metals)	BTEXN and Volatile TRH	Polycyclic Aromatic Hydrocarbons (Trace level)	Total Dissolved Solids Dried at 180°C ± 2°C
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217																			
Brisbane Laboratory - NATA Site # 20794																			
Perth Laboratory - NATA Site # 23736																			
External Laboratory																			
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**														
1	CSM_BH02	May 19, 2020		Water	S20-My29272	X	X	X	X	X		X	X	X	X	X		X	X
2	CSM_BH06	May 19, 2020		Water	S20-My29273	X	X	X	X	X		X	X	X	X	X		X	X
3	CSM_BH08	May 18, 2020		Water	S20-My29274	X	X	X	X	X		X	X	X	X	X		X	X
4	CSM_BH09S	May 20, 2020		Water	S20-My29275	X	X	X	X	X		X	X	X	X	X		X	X
5	CSM_BH10S	May 18, 2020		Water	S20-My29276	X	X	X	X	X		X	X	X	X	X		X	X
6	SRT_BH047	May 18, 2020		Water	S20-My29277	X	X	X	X	X		X	X	X	X	X		X	X
7	SRT_BH052	May 18, 2020		Water	S20-My29278	X	X	X	X	X		X	X	X	X	X		X	X
8	SRT_BH059	May 18, 2020		Water	S20-My29279	X	X	X	X	X		X	X	X	X	X		X	X
9	GASW_BH10	May 19, 2020		Water	S20-My29280	X	X	X	X	X		X	X	X	X	X		X	X
10	GASW_BH11	May 20, 2020		Water	S20-My29281	X	X	X	X	X		X	X	X	X	X		X	X

eurofins | Environment Testing

ABN – 50 005 085 521 web : www.eurofins.com.au e.mail : EnviroSales@eurofins.com

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: GHD Pty Ltd NSW
Address: Level 15, 133 Castlereagh Street
Sydney
NSW 2000

Project Name: CENTRAL
Project ID: 21-27234

Order No.:
Report #: 720682
Phone: 02 9239 7100
Fax: 02 9239 7199

Received: May 20, 2020 3:07 PM
Due: May 27, 2020
Priority: 5 Day
Contact Name: Henry Luo

Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail						Cyanide (total)	Ferrous Iron - Fe2+	Manganese	pH (at 25°C)	Total Suspended Solids Dried at 103–105°C	Metals M8	Phenols (IWRG 621)	Major Anions	Major Cations	TRH (after Silica Gel cleanup)	Eurofins | mgt Suite B6 (filtered metals)	BTEXN and Volatile TRH	Polycyclic Aromatic Hydrocarbons (Trace level)	Total Dissolved Solids Dried at 180°C ± 2°C
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217																			
Brisbane Laboratory - NATA Site # 20794																			
Perth Laboratory - NATA Site # 23736																			
11	GASW_BH23	May 20, 2020		Water	S20-My29282	X						X		X	X	X		X	
12	GASW_BH25A	May 20, 2020		Water	S20-My29283	X	X	X	X	X		X	X	X	X	X		X	X
13	QC02	May 20, 2020		Water	S20-My29284											X		X	
14	RB01	May 20, 2020		Water	S20-My29285						X								
15	TRIP BLANK	May 18, 2020		Water	S20-My29286												X		
16	TRIP SPIKE	May 18, 2020		Water	S20-My29287												X		
17	CSM_BH04	May 20, 2020		Water	S20-My29288	X	X	X	X	X		X	X	X	X	X		X	X
Test Counts						13	12	12	12	12	1	13	12	13	13	14	2	14	12

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total*	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.01			0.01	Pass	
Naphthalene	mg/L	< 0.01			0.01	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/L	< 0.003			0.003	Pass	
2.4-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
2.4.5-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.4.6-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.6-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
4-Chloro-3-methylphenol	mg/L	< 0.01			0.01	Pass	
Pentachlorophenol	mg/L	< 0.01			0.01	Pass	
Tetrachlorophenols - Total	mg/L	< 0.03			0.03	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	mg/L	< 0.1			0.1	Pass	
2-Methyl-4.6-dinitrophenol	mg/L	< 0.03			0.03	Pass	
2-Methylphenol (o-Cresol)	mg/L	< 0.003			0.003	Pass	
2-Nitrophenol	mg/L	< 0.01			0.01	Pass	
2.4-Dimethylphenol	mg/L	< 0.003			0.003	Pass	
2.4-Dinitrophenol	mg/L	< 0.03			0.03	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/L	< 0.006			0.006	Pass	
4-Nitrophenol	mg/L	< 0.03			0.03	Pass	
Dinoseb	mg/L	< 0.1			0.1	Pass	
Phenol	mg/L	< 0.003			0.003	Pass	
Method Blank							
TRH - 2013 NEPM Fractions (after silica gel clean-up)							
TRH >C10-C16 (after silica gel clean-up)	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34 (after silica gel clean-up)	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40 (after silica gel clean-up)	mg/L	< 0.1			0.1	Pass	
Method Blank							
TRH - 1999 NEPM Fractions (after silica gel clean-up)							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
TRH C10-C14 (after silica gel clean-up)	mg/L	< 0.05			0.05	Pass	
TRH C15-C28 (after silica gel clean-up)	mg/L	< 0.1			0.1	Pass	
TRH C29-C36 (after silica gel clean-up)	mg/L	< 0.1			0.1	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons (Trace level)							
Acenaphthene	mg/L	< 0.00001			0.00001	Pass	
Acenaphthylene	mg/L	< 0.00001			0.00001	Pass	
Anthracene	mg/L	< 0.00001			0.00001	Pass	
Benz(a)anthracene	mg/L	< 0.00001			0.00001	Pass	
Benzo(a)pyrene	mg/L	< 0.00001			0.00001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.00001			0.00001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.00001			0.00001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.00001			0.00001	Pass	
Chrysene	mg/L	< 0.00001			0.00001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.00001			0.00001	Pass	
Fluoranthene	mg/L	< 0.00001			0.00001	Pass	
Fluorene	mg/L	< 0.00001			0.00001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.00001			0.00001	Pass	
Naphthalene	mg/L	< 0.00001			0.00001	Pass	
Phenanthrene	mg/L	< 0.00001			0.00001	Pass	
Pyrene	mg/L	< 0.00001			0.00001	Pass	
Method Blank							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Chloride	mg/L	< 1			1	Pass	
Cyanide (total)	mg/L	< 0.004			0.004	Pass	
Ferrous Iron - Fe2+	mg/L	< 0.05			0.05	Pass	
Nitrate (as N)	mg/L	< 0.02			0.02	Pass	
Sulphate (as SO4)	mg/L	< 5			5	Pass	
Total Dissolved Solids Dried at 180°C ± 2°C	mg/L	< 10			10	Pass	
Total Suspended Solids Dried at 103–105°C	mg/L	< 1			1	Pass	
Method Blank							
Alkalinity (speciated)							
Bicarbonate Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Carbonate Alkalinity (as CaCO3)	mg/L	< 10			10	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
Method Blank							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Alkali Metals							
Calcium	mg/L	< 0.5			0.5	Pass	
Magnesium	mg/L	< 0.5			0.5	Pass	
Potassium	mg/L	< 0.5			0.5	Pass	
Sodium	mg/L	< 0.5			0.5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	91			70-130	Pass	
TRH C10-C14	%	75			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	85			30-130	Pass	
2.4-Dichlorophenol	%	106			30-130	Pass	
2.4.5-Trichlorophenol	%	90			30-130	Pass	
2.4.6-Trichlorophenol	%	103			30-130	Pass	
2.6-Dichlorophenol	%	104			30-130	Pass	
4-Chloro-3-methylphenol	%	81			30-130	Pass	
Pentachlorophenol	%	76			30-130	Pass	
Tetrachlorophenols - Total	%	74			30-130	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	%	36			30-130	Pass	
2-Methyl-4.6-dinitrophenol	%	116			30-130	Pass	
2-Methylphenol (o-Cresol)	%	95			30-130	Pass	
2-Nitrophenol	%	96			30-130	Pass	
2.4-Dimethylphenol	%	69			30-130	Pass	
2.4-Dinitrophenol	%	125			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	%	97			30-130	Pass	
4-Nitrophenol	%	99			30-130	Pass	
Dinoseb	%	119			30-130	Pass	
Phenol	%	53			30-130	Pass	
LCS - % Recovery							
TRH - 2013 NEPM Fractions (after silica gel clean-up)							
TRH >C10-C16 (after silica gel clean-up)	%	97			70-130	Pass	
LCS - % Recovery							
TRH - 1999 NEPM Fractions (after silica gel clean-up)							
TRH C10-C14 (after silica gel clean-up)	%	103			70-130	Pass	
LCS - % Recovery							
Ammonia (as N)	%	92			70-130	Pass	
Chloride	%	88			70-130	Pass	
Cyanide (total)	%	126			70-130	Pass	
Ferrous Iron - Fe2+	%	105			70-130	Pass	
Nitrate (as N)	%	95			70-130	Pass	
Sulphate (as SO4)	%	104			70-130	Pass	
Total Dissolved Solids Dried at 180°C ± 2°C	%	93			70-130	Pass	
Total Suspended Solids Dried at 103–105°C	%	102			70-130	Pass	
LCS - % Recovery							
Alkalinity (speciated)							
Carbonate Alkalinity (as CaCO3)	%	87			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	103			80-120	Pass	
Cadmium	%	96			80-120	Pass	
Chromium	%	93			80-120	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Copper			%	92			80-120	Pass	
Lead			%	95			80-120	Pass	
Manganese			%	94			80-120	Pass	
Mercury			%	94			75-125	Pass	
Nickel			%	93			80-120	Pass	
Zinc			%	102			80-120	Pass	
LCS - % Recovery									
Alkali Metals									
Calcium			%	91			70-130	Pass	
Magnesium			%	87			70-130	Pass	
Potassium			%	94			70-130	Pass	
Sodium			%	90			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	M20-My33852	NCP	%	87			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	M20-My33852	NCP	%	79			70-130	Pass	
Toluene	M20-My33852	NCP	%	76			70-130	Pass	
Ethylbenzene	M20-My33852	NCP	%	73			70-130	Pass	
m&p-Xylenes	M20-My33852	NCP	%	72			70-130	Pass	
o-Xylene	M20-My33852	NCP	%	72			70-130	Pass	
Xylenes - Total*	M20-My33852	NCP	%	72			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	M20-My33852	NCP	%	83			70-130	Pass	
TRH C6-C10	M20-My33852	NCP	%	84			70-130	Pass	
Spike - % Recovery									
				Result 1					
Chloride	S20-My27406	NCP	%	74			70-130	Pass	
Sulphate (as SO4)	M20-My29043	NCP	%	95			70-130	Pass	
Total Suspended Solids Dried at 103–105°C	M20-My29190	NCP	%	99			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S20-My29272	CP	%	95			75-125	Pass	
Arsenic (filtered)	M20-My32200	NCP	%	101			70-130	Pass	
Cadmium	S20-My29272	CP	%	87			75-125	Pass	
Cadmium (filtered)	M20-My32200	NCP	%	98			70-130	Pass	
Chromium	S20-My29272	CP	%	83			75-125	Pass	
Chromium (filtered)	M20-My32200	NCP	%	95			70-130	Pass	
Copper	S20-My29272	CP	%	82			75-125	Pass	
Copper (filtered)	M20-My32200	NCP	%	93			70-130	Pass	
Lead	S20-My29272	CP	%	82			75-125	Pass	
Lead (filtered)	M20-My32200	NCP	%	95			70-130	Pass	
Manganese	S20-My29272	CP	%	6.4			75-125	Fail	Q08
Mercury	S20-My29272	CP	%	91			70-130	Pass	
Mercury (filtered)	M20-My32200	NCP	%	88			70-130	Pass	
Nickel	S20-My29272	CP	%	82			75-125	Pass	
Nickel (filtered)	M20-My32200	NCP	%	94			70-130	Pass	
Zinc	S20-My29272	CP	%	78			75-125	Pass	
Zinc (filtered)	M20-My32200	NCP	%	98			70-130	Pass	Q08
Spike - % Recovery									

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Alkali Metals				Result 1					
Calcium	S20-My29272	CP	%	102			70-130	Pass	
Magnesium	S20-My29272	CP	%	103			70-130	Pass	
Potassium	S20-My29272	CP	%	101			70-130	Pass	
Sodium	S20-My29272	CP	%	108			70-130	Pass	
Spike - % Recovery									
Alkalinity (speciated)				Result 1					
Bicarbonate Alkalinity (as CaCO3)	S20-My29273	CP	%	87			70-130	Pass	
Spike - % Recovery									
Phenols (Halogenated)				Result 1					
2-Chlorophenol	Z20-My27113	NCP	%	77			30-130	Pass	
2.4-Dichlorophenol	Z20-My27113	NCP	%	73			30-130	Pass	
2.4.5-Trichlorophenol	Z20-My27113	NCP	%	75			30-130	Pass	
2.4.6-Trichlorophenol	Z20-My27113	NCP	%	67			30-130	Pass	
2.6-Dichlorophenol	Z20-My27113	NCP	%	83			30-130	Pass	
4-Chloro-3-methylphenol	Z20-My27113	NCP	%	55			30-130	Pass	
Pentachlorophenol	Z20-My27113	NCP	%	90			30-130	Pass	
Tetrachlorophenols - Total	Z20-My27113	NCP	%	89			30-130	Pass	
Spike - % Recovery									
Phenols (non-Halogenated)				Result 1					
2-Cyclohexyl-4.6-dinitrophenol	Z20-My27113	NCP	%	64			30-130	Pass	
2-Methyl-4.6-dinitrophenol	Z20-My27113	NCP	%	84			30-130	Pass	
2-Methylphenol (o-Cresol)	Z20-My27113	NCP	%	51			30-130	Pass	
2-Nitrophenol	Z20-My27113	NCP	%	80			30-130	Pass	
2.4-Dimethylphenol	M20-My29788	NCP	%	103			30-130	Pass	
2.4-Dinitrophenol	Z20-My27113	NCP	%	87			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	Z20-My27113	NCP	%	49			30-130	Pass	
4-Nitrophenol	S20-My19420	NCP	%	51			30-130	Pass	
Dinoseb	Z20-My27113	NCP	%	84			30-130	Pass	
Phenol	Z20-My27113	NCP	%	34			30-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons (Trace level)				Result 1					
Acenaphthene	S20-My19420	NCP	%	124			70-130	Pass	
Acenaphthylene	S20-My19420	NCP	%	122			70-130	Pass	
Anthracene	S20-My19420	NCP	%	84			70-130	Pass	
Benz(a)anthracene	S20-My19420	NCP	%	99			70-130	Pass	
Benzo(a)pyrene	S20-My19420	NCP	%	102			70-130	Pass	
Benzo(b&j)fluoranthene	S20-My19420	NCP	%	106			70-130	Pass	
Benzo(g.h.i)perylene	S20-My19420	NCP	%	103			70-130	Pass	
Benzo(k)fluoranthene	S20-My19420	NCP	%	104			70-130	Pass	
Chrysene	S20-My19420	NCP	%	108			70-130	Pass	
Dibenz(a.h)anthracene	S20-My19420	NCP	%	104			70-130	Pass	
Fluoranthene	S20-My19420	NCP	%	120			70-130	Pass	
Fluorene	S20-My19420	NCP	%	125			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S20-My19420	NCP	%	106			70-130	Pass	
Naphthalene	S20-My19420	NCP	%	110			70-130	Pass	
Phenanthrene	S20-My19420	NCP	%	123			70-130	Pass	
Pyrene	S20-My19420	NCP	%	122			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	S20-My29278	CP	%	86			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S20-My29278	CP	%	81			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
TRH - 2013 NEPM Fractions (after silica gel clean-up)				Result 1					
TRH >C10-C16 (after silica gel clean-up)	S20-My29278	CP	%	81			70-130	Pass	
Spike - % Recovery									
TRH - 1999 NEPM Fractions (after silica gel clean-up)				Result 1					
TRH C10-C14 (after silica gel clean-up)	S20-My29278	CP	%	86			70-130	Pass	
Spike - % Recovery									
				Result 1					
Ammonia (as N)	S20-My29279	CP	%	95			70-130	Pass	
Nitrate (as N)	S20-My29279	CP	%	77			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Manganese	S20-My29283	CP	%	78			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S20-My30322	NCP	%	99			75-125	Pass	
Cadmium	S20-My30322	NCP	%	91			75-125	Pass	
Chromium	S20-My30322	NCP	%	122			75-125	Pass	
Copper	S20-My30322	NCP	%	89			75-125	Pass	
Lead	S20-My30322	NCP	%	93			75-125	Pass	
Mercury	S20-My30322	NCP	%	100			70-130	Pass	
Nickel	S20-My30322	NCP	%	95			75-125	Pass	
Zinc	S20-My30322	NCP	%	62			75-125	Fail	Q08
Spike - % Recovery									
				Result 1					
Ammonia (as N)	S20-My29288	CP	%	87			70-130	Pass	
Cyanide (total)	S20-My29288	CP	%	74			70-130	Pass	
Nitrate (as N)	S20-My29288	CP	%	98			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	M20-My33849	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	M20-My35239	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	M20-My35239	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	M20-My35239	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	M20-My33849	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	M20-My33849	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	M20-My33849	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	M20-My33849	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	M20-My33849	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total*	M20-My33849	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	M20-My33849	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	M20-My33849	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH >C10-C16	M20-My35239	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	M20-My35239	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	M20-My35239	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	

Duplicate									
Phenols (Halogenated)				Result 1	Result 2	RPD			
2-Chlorophenol	B20-My22206	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.4-Dichlorophenol	B20-My22206	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.4.5-Trichlorophenol	B20-My22206	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.4.6-Trichlorophenol	B20-My22206	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.6-Dichlorophenol	B20-My22206	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
4-Chloro-3-methylphenol	B20-My22206	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Pentachlorophenol	B20-My22206	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Tetrachlorophenols - Total	B20-My22206	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
Duplicate									
Phenols (non-Halogenated)				Result 1	Result 2	RPD			
2-Cyclohexyl-4.6-dinitrophenol	B20-My22206	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
2-Methyl-4.6-dinitrophenol	B20-My22206	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
2-Methylphenol (o-Cresol)	B20-My22206	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2-Nitrophenol	B20-My22206	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.4-Dimethylphenol	B20-My22206	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.4-Dinitrophenol	B20-My22206	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	B20-My22206	NCP	mg/L	< 0.006	< 0.006	<1	30%	Pass	
4-Nitrophenol	B20-My22206	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
Dinoseb	B20-My22206	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Phenol	B20-My22206	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chloride	S20-My29272	CP	mg/L	150	160	5.0	30%	Pass	
Ferrous Iron - Fe2+	S20-My29272	CP	mg/L	1.4	1.4	2.0	30%	Pass	
pH (at 25°C)	S20-My29272	CP	pH Units	7.5	7.5	pass	30%	Pass	
Sulphate (as SO4)	S20-My29272	CP	mg/L	29	32	11	30%	Pass	
Duplicate									
Alkalinity (speciated)				Result 1	Result 2	RPD			
Bicarbonate Alkalinity (as CaCO3)	S20-My29272	CP	mg/L	410	330	21	30%	Pass	
Carbonate Alkalinity (as CaCO3)	S20-My29272	CP	mg/L	< 10	< 10	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S20-My29272	CP	mg/L	0.011	0.011	1.0	30%	Pass	
Cadmium	S20-My29272	CP	mg/L	< 0.0002	0.0002	80	30%	Fail	Q15
Chromium	S20-My29272	CP	mg/L	0.042	0.041	3.0	30%	Pass	
Copper	S20-My29272	CP	mg/L	0.028	0.028	<1	30%	Pass	
Lead	S20-My29272	CP	mg/L	0.043	0.043	2.0	30%	Pass	
Manganese	S20-My29272	CP	mg/L	0.63	0.63	1.0	30%	Pass	
Mercury	S20-My29272	CP	mg/L	0.0002	0.0001	19	30%	Pass	
Nickel	S20-My29272	CP	mg/L	0.026	0.025	3.0	30%	Pass	
Zinc	S20-My29272	CP	mg/L	0.082	0.083	2.0	30%	Pass	
Duplicate									
Alkali Metals				Result 1	Result 2	RPD			
Potassium	M20-My36830	NCP	mg/L	15	14	9.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Ammonia (as N)	S20-My29273	CP	mg/L	0.11	0.09	23	30%	Pass	
Nitrate (as N)	S20-My29273	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Total Suspended Solids Dried at 103–105°C	S20-My29275	CP	mg/L	140	130	25	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons (Trace level)				Result 1	Result 2	RPD			
Acenaphthene	S20-My19419	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Acenaphthylene	S20-My19419	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Anthracene	S20-My19419	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Benz(a)anthracene	S20-My19419	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Benzo(a)pyrene	S20-My19419	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Benzo(b&j)fluoranthene	S20-My19419	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Benzo(g.h.i)perylene	S20-My19419	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Benzo(k)fluoranthene	S20-My19419	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Chrysene	S20-My19419	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Dibenz(a.h)anthracene	S20-My19419	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Fluoranthene	S20-My19419	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Fluorene	S20-My19419	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S20-My19419	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Naphthalene	S20-My19419	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Phenanthrene	S20-My19419	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Pyrene	S20-My19419	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Total Dissolved Solids Dried at 180°C ± 2°C	S20-My29276	CP	mg/L	150	180	15	30%	Pass	
Duplicate									
TRH - 2013 NEPM Fractions (after silica gel clean-up)				Result 1	Result 2	RPD			
TRH >C10-C16 (after silica gel clean-up)	S20-My29277	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34 (after silica gel clean-up)	S20-My29277	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40 (after silica gel clean-up)	S20-My29277	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
TRH - 1999 NEPM Fractions (after silica gel clean-up)				Result 1	Result 2	RPD			
TRH C10-C36 (Total) (after silica gel clean-up)	S20-My29277	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C10-C14 (after silica gel clean-up)	S20-My29277	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28 (after silica gel clean-up)	S20-My29277	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36 (after silica gel clean-up)	S20-My29277	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Ammonia (as N)	S20-My29279	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Nitrate (as N)	S20-My29279	CP	mg/L	1.9	1.9	4.0	30%	Pass	
pH (at 25°C)	S20-My29279	CP	pH Units	7.2	7.2	pass	30%	Pass	
Duplicate									
Alkalinity (speciated)				Result 1	Result 2	RPD			
Bicarbonate Alkalinity (as CaCO3)	S20-My29279	CP	mg/L	320	250	24	30%	Pass	
Carbonate Alkalinity (as CaCO3)	S20-My29279	CP	mg/L	< 10	< 10	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic (filtered)	S20-My29280	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Cadmium (filtered)	S20-My29280	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Chromium (filtered)	S20-My29280	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Copper (filtered)	S20-My29280	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Lead (filtered)	S20-My29280	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Mercury (filtered)	S20-My29280	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Nickel (filtered)	S20-My29280	CP	mg/L	0.036	0.035	3.0	30%	Pass	
Zinc (filtered)	S20-My29280	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
				Result 1	Result 2	RPD			
Ferrous Iron - Fe2+	S20-My29281	CP	mg/L	2.1	1.9	7.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Cyanide (total)	S20-My29283	CP	mg/L	0.025	0.028	9.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Manganese	S20-My29283	CP	mg/L	0.37	0.37	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S20-My35072	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S20-My35072	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S20-My35072	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	S20-My35072	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead	S20-My35072	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury	S20-My35072	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S20-My35072	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	S20-My35072	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Ammonia (as N)	S20-My29288	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Cyanide (total)	S20-My29288	CP	mg/L	< 0.004	< 0.004	<1	30%	Pass	
Nitrate (as N)	S20-My29288	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference.
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.
R16	The LORs have been raised due to the high concentration of one or more analytes
R20	This sample is a Trip Spike and therefore all results are reported as a percentage

Authorised By

Alena Bounkeua	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)
Scott Beddoes	Senior Analyst-Inorganic (VIC)



Glenn Jackson
General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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☑ **Sydney**
Unit F3 - 6 Building F, 16 Mars Road, Lane Cove
Phone: +612 9900 8400
Email: enviro.syd@mgtlabmark.com.au

☐ **Brisbane**
Unit 1-21 Smallwood Place, Murrarie
Phone: +617 3902 4600
Email: enviro.bris@mgtlabmark.com.au

☐ **Melbourne**
2 Kingston Town Close, Oakleigh, VIC 3166
Phone: +613 8564 5000 Fax: +613 8564 5090
Email: enquiries.melb@mgtlabmark.com.au

CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name : GHD Pty Ltd, Sydney
Office Address : Level 15, 133 Castlereagh Street, Sydney NSW 2000
Special Directions & Comments :
Eurofins | mgt DI water batch number: S0227

Contact Name : Terry Nham
Project Manager : Henry Luo
Email for results : terry.nham@ghd.com henry.luo@ghd.com

Purchase Order : 2127234
PROJECT Number : 21-27234
PROJECT Name : Central

COC Number :
Eurofins | mgt quote ID : GHD Rates 2020
Data output format: ESDAT

Analytes

	Sample ID	Date	Matrix	TRH, BTEXN, 8 Metals (Dissolved) (Suite B6)	PAH - Trace LOR	Phenols	PCB	TRH (with Silica Gel Cleanup)	Cyanide - Trace Level (<0.004 mg/L)	Ammonia	Major Anions and Cations		Ferrous Iron	Manganese	pH	TDS	TSS		TRH C6-C10 / BTEX	8 Metals (Total)					
1	CSM_BH02	18/6	Water	X	X	X	X	X	X	X	X		X	X	X	X	X								
2	CSM_BH04	18/6	Water	X	X	X	X	X	X	X	X		X	X	X	X	X								
3	CSM_BH06	18/6	Water	X	X	X	X	X	X	X	X		X	X	X	X	X								
4	CSM_BH08	17/6	Water	X	X	X	X	X	X	X	X		X	X	X	X	X								
5	CSM_BH09S	19/6	Water	X	X	X	X	X	X	X	X		X	X	X	X	X								
6	CSM_BH10S	19/6	Water	X	X	X	X	X	X	X	X		X	X	X	X	X								
7	SRT_BH047	17/6	Water	X	X	X	X	X	X	X	X		X	X	X	X	X								
8	SRT_BH052	17/6	Water	X	X	X	X	X	X	X	X		X	X	X	X	X								
9	SRT_BH059	17/6	Water	X	X	X	X	X	X	X	X		X	X	X	X	X								
10	~~GASW_BH09~~		~~Water~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~		~~X~~	~~X~~	~~X~~	~~X~~	~~X~~								
11	GASW_BH10	18/6	Water	X	X	X		X	X	X	X		X	X	X	X	X								
12	GASW_BH11	19/6	Water	X	X	X		X	X	X	X		X	X	X	X	X								
13	GASW_BH23	17/6	Water	X	X	X		X	X	X	X		X	X	X	X	X								
14	GASW_BH25a	19/6	Water	X	X	X		X	X	X	X		X	X	X	X	X								
15	~~QC01~~		~~Water~~	~~PLEASE SEND TO ALS WITH ATTACHED SOS~~																					
16	QC02	18/6	Water	X	X																				

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

500P	250P	60P	1LA	40mL vial	200mL A	Jar	Bag
1		4		2	2		
1		4		2	2		
1		4		2	2		
1		4		2	2		
1		4		2	2		
1		4		2	2		
1		4		2	2		
1		4		2	2		
1		4		2	2		
~~1~~		~~4~~		~~2~~	~~2~~		
1		4		2	2		
1		4		2	2		
1		4		2	2		
1		4		2	2		
~~1~~		~~4~~		~~2~~	~~2~~		
1		4		2	2		

Sample comments:

Laboratory Staff

Relinquished By: Terry Nham - GHD
Date & Time : 19/06/2020
Signature:

Received By: Anson Lee
Date & Time : 19/6/20 3:12PM
Signature:

Turn around time

1 DAY ☐ 2 DAY ☐ 3 DAY ☐
5 DAY ☒ 10 DAY ☐ Other:

Method Of Shipment

☐ Courier
☒ Hand Delivered
☐ Postal
Courier Consignment # :

Temperature on arrival: 3.50°C
Report number: #726825

eurofins | mgt

☑ **Sydney**
Unit F3 - 6 Building F, 16 Mars Road, Lane Cove
Phone: +612 9900 8400
Email: enviro.syd@mgtlabmark.com.au

☐ **Brisbane**
Unit 1-21 Smallwood Place, Murrarie
Phone: +617 3902 4600
Email: enviro.bris@mgtlabmark.com.au

☐ **Melbourne**
2 Kingston Town Close, Oakleigh, VIC 3166
Phone: +613 8564 5000 Fax: +613 8564 5090
Email: enquiries.melb@mgtlabmark.com.au

CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name : GHD Pty Ltd, Sydney	**Contact Name :** Terry Nham	**Purchase Order :** 2127234	**COC Number :**
Office Address :	**Project Manager :** Henry Luo	**PROJECT Number :** 21-27234	**Eurofins | mgt quote ID :** GHD Rates 2020
Level 15, 133 Castlereagh Street, Sydney NSW 2000	**Email for results :** terry.nham@ghd.com henry.luo@ghd.com	**PROJECT Name :** Central	**Data output format:** ESDAT

Special Directions & Comments :

Eurofins | mgt DI water batch number: S0227

Analytes

	Sample ID	Date	Matrix	TRH, BTEXN, 8 Metals (Dissolved) (Suite B6)	PAH - Trace LOR	Phenols	PCB	TRH (with Silica Gel Cleanup)	Cyanide - Trace Level (<0.004 mg/L)	Ammonia	Major Anions and Cations		Ferrous Iron	Manganese	pH	TDS	TSS	TRH C6-C10 / BTEX	8 Metals (Total)				
1	RB01	19/6	Water																X				
2	Trip Blank	17/6	Water															X					
3	Trip Spike	17/6	Water															X					
4	SRT_BH050	17/6	Water	X	X	X	X	X	X	X	X		X	X	X	X	X						
5																							
6																							
7																							
8																							
9																							
10																							
11																							
12																							
13																							
14																							
15																							
16																							

Some common holding times (with correct preservation). For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

500P	250P	60P	1LA	40mL vial	200mL A	Jar	Bag	Sample comments:
		1						
				2				
				2				
1		4		2	2			

Laboratory Staff

Relinquished By: Terry Nham - GHD
Date & Time : 19/06/2020
Signature:

Received By: Anson Lee
Date & Time : 19/6/20 3:12PM
Signature:

Turn around time

1 DAY ☐ 2 DAY ☐ 3 DAY ☐
5 DAY ☑ 10 DAY ☐ Other:

Method Of Shipment

☐ Courier
☒ Hand Delivered
☐ Postal
Courier Consignment # :

Temperature on arrival: 3.50°C

Report number: #726825

eurofins | Environment Testing

Melbourne
6 Monterey Road
Dandenong South Vic 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com web : www.eurofins.com.au

Sample Receipt Advice

Company name: **GHD Pty Ltd NSW**

Contact name: Henry Luo
Project name: CENTRAL
Project ID: 21-27234
COC number: Not provided
Turn around time: 5 Day
Date/Time received: Jun 19, 2020 3:12 PM
Eurofins reference: **726825**

Sample information

- ☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ☑ Sample Temperature of a random sample selected from the batch as recorded by Eurofins Sample Receipt : 3.5 degrees Celsius.
- ☑ All samples have been received as described on the above COC.
- ☑ COC has been completed correctly.
- ☑ Attempt to chill was evident.
- ☑ Appropriately preserved sample containers have been used.
- ☑ All samples were received in good condition.
- ☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ☑ Appropriate sample containers have been used.
- ☑ Sample containers for volatile analysis received with zero headspace.
- ☒ Split sample sent to requested external lab.
- ☒ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Alena Bounkeua on Phone : or by e.mail: AlenaBounkeua@eurofins.com

Results will be delivered electronically via e.mail to Henry Luo - henry.luo@ghd.com.

Note: A copy of these results will also be delivered to the general GHD Pty Ltd NSW email address.

eurofins | Environment Testing

ABN – 50 005 085 521 web : www.eurofins.com.au e.mail : EnviroSales@eurofins.com

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
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NATA # 1261
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2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: GHD Pty Ltd NSW
Address: Level 15, 133 Castlereagh Street
Sydney
NSW 2000

Project Name: CENTRAL
Project ID: 21-27234

Order No.: 2127234
Report #: 726825
Phone: 02 9239 7100
Fax: 02 9239 7199

Received: Jun 19, 2020 3:12 PM
Due: Jun 26, 2020
Priority: 5 Day
Contact Name: Henry Luo

Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail						Cyanide (total)	Ferrous Iron - Fe2+	Manganese (filtered)	pH (at 25°C)	Total Suspended Solids Dried at 103–105°C	Polychlorinated Biphenyls	Metals M8	Phenols (IWRG 621)	Major Anions	Major Cations	TRH (after Silica Gel cleanup)	Eurofins | mgt Suite B6 (filtered metals)	BTEXN and Volatile TRH	BTEXN and Volatile TRH	Polycyclic Aromatic Hydrocarbons (Trace level)	Total Dissolved Solids Dried at 180°C ± 2°C
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217																					
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
External Laboratory																					
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																
1	CSM_BH02	Jun 18, 2020		Water	S20-Jn34705	X	X	X	X	X	X		X	X	X	X	X			X	X
2	CSM_BH04	Jun 18, 2020		Water	S20-Jn34706	X	X	X	X	X	X		X	X	X	X	X			X	X
3	CSM_BH06	Jun 18, 2020		Water	S20-Jn34707	X	X	X	X	X	X		X	X	X	X	X			X	X
4	CSM_BH08	Jun 17, 2020		Water	S20-Jn34708	X	X	X	X	X	X		X	X	X	X	X			X	X
5	CSM_BH09S	Jun 19, 2020		Water	S20-Jn34709	X	X	X	X	X	X		X	X	X	X	X			X	X
6	CSM_BH10S	Jun 19, 2020		Water	S20-Jn34710	X	X	X	X	X	X		X	X	X	X	X			X	X
7	SRT_BH047	Jun 17, 2020		Water	S20-Jn34711	X	X	X	X	X	X		X	X	X	X	X			X	X
8	SRT_BH052	Jun 17, 2020		Water	S20-Jn34712	X	X	X	X	X	X		X	X	X	X	X			X	X
9	SRT_BH059	Jun 17, 2020		Water	S20-Jn34713	X	X	X	X	X	X		X	X	X	X	X			X	X
10	GASW_BH10	Jun 18, 2020		Water	S20-Jn34714	X	X	X	X	X			X	X	X	X	X			X	X

eurofins | Environment Testing

ABN – 50 005 085 521 web : www.eurofins.com.au e.mail : EnviroSales@eurofins.com

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New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: GHD Pty Ltd NSW
Address: Level 15, 133 Castlereagh Street
Sydney
NSW 2000

Project Name: CENTRAL
Project ID: 21-27234

Order No.: 2127234
Report #: 726825
Phone: 02 9239 7100
Fax: 02 9239 7199

Received: Jun 19, 2020 3:12 PM
Due: Jun 26, 2020
Priority: 5 Day
Contact Name: Henry Luo

Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail						Cyanide (total)	Ferrous Iron - Fe2+	Manganese (filtered)	pH (at 25°C)	Total Suspended Solids Dried at 103–105°C	Polychlorinated Biphenyls	Metals M8	Phenols (IWRG 621)	Major Anions	Major Cations	TRH (after Silica Gel cleanup)	Eurofins | mgt Suite B6 (filtered metals)	BTEXN and Volatile TRH	BTEXN and Volatile TRH	Polycyclic Aromatic Hydrocarbons (Trace level)	Total Dissolved Solids Dried at 180°C ± 2°C
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217																					
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
11	GASW_BH11	Jun 19, 2020		Water	S20-Jn34715	X	X	X	X	X			X	X	X	X	X			X	X
12	GASW_BH23	Jun 17, 2020		Water	S20-Jn34716	X	X	X	X	X			X	X	X	X	X			X	X
13	GASW_BH25A	Jun 19, 2020		Water	S20-Jn34717	X	X	X	X	X			X	X	X	X	X			X	X
14	QC02	Jun 18, 2020		Water	S20-Jn34718												X			X	
15	RB01	Jun 19, 2020		Water	S20-Jn34719							X									
16	TRIP BLANK	Jun 17, 2020		Water	S20-Jn34720													X			
17	TRIP SPIKE	Jun 17, 2020		Water	S20-Jn34721														X		
18	SRT_BH050	Jun 17, 2020		Water	S20-Jn34722	X	X	X	X	X	X		X	X	X	X	X			X	X
Test Counts						14	14	14	14	14	10	1	14	14	14	14	15	1	1	15	14

GHD Pty Ltd NSW
Level 15, 133 Castlereagh Street
Sydney
NSW 2000

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Attention: **Henry Luo**

Report **726825-W**
Project name CENTRAL
Project ID 21-27234
Received Date Jun 19, 2020

Client Sample ID			**CSM_BH02**	**CSM_BH04**	**CSM_BH06**	**CSM_BH08**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**S20-Jn34705**	**S20-Jn34706**	**S20-Jn34707**	**S20-Jn34708**
Date Sampled			**Jun 18, 2020**	**Jun 18, 2020**	**Jun 18, 2020**	**Jun 17, 2020**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	112	125	112	124
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Polychlorinated Biphenyls						
Aroclor-1016	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Aroclor-1221	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Aroclor-1232	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Aroclor-1242	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Aroclor-1248	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Aroclor-1254	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Aroclor-1260	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PCB*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibutylchlorendate (surr.)	1	%	85	96	123	66
Tetrachloro-m-xylene (surr.)	1	%	61	69	96	55

Client Sample ID			CSM_BH02	CSM_BH04	CSM_BH06	CSM_BH08
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Jn34705	S20-Jn34706	S20-Jn34707	S20-Jn34708
Date Sampled			Jun 18, 2020	Jun 18, 2020	Jun 18, 2020	Jun 17, 2020
Test/Reference	LOR	Unit				
Phenols (Halogenated)						
2-Chlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.6-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachlorophenols - Total	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Total Halogenated Phenol*	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2-Nitrophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4-Dimethylphenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006	< 0.006	< 0.006	< 0.006
4-Nitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Dinoseb	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
Total Non-Halogenated Phenol*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol-d6 (surr.)	1	%	44	49	43	36
TRH - 2013 NEPM Fractions (after silica gel clean-up)						
TRH >C10-C16 (after silica gel clean-up)	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C16-C34 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C34-C40 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH - 1999 NEPM Fractions (after silica gel clean-up)						
TRH C10-C36 (Total) (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C10-C14 (after silica gel clean-up)	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH C15-C28 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C29-C36 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Polycyclic Aromatic Hydrocarbons (Trace level)						
Acenaphthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Acenaphthylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benz(a)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(a)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(b&j)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(g.h.i)perylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(k)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Chrysene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Dibenz(a.h)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Fluorene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Indeno(1.2.3-cd)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Naphthalene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	0.00009
Phenanthrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Total PAH*	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	0.00009

Client Sample ID			CSM_BH02	CSM_BH04	CSM_BH06	CSM_BH08
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Jn34705	S20-Jn34706	S20-Jn34707	S20-Jn34708
Date Sampled			Jun 18, 2020	Jun 18, 2020	Jun 18, 2020	Jun 17, 2020
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons (Trace level)						
2-Fluorobiphenyl (surr.)	1	%	55	64	62	110
p-Terphenyl-d14 (surr.)	1	%	56	77	99	87
Ammonia (as N)	0.01	mg/L	0.03	0.04	0.05	0.03
Chloride	1	mg/L	160	77	190	49
Cyanide (total)	0.004	mg/L	0.004	< 0.004	< 0.004	< 0.004
Ferrous Iron - Fe2+	0.05	mg/L	3.9	5.2	8.0	4.2
Nitrate (as N)	0.02	mg/L	< 0.02	< 0.02	< 0.02	0.27
pH (at 25°C)	0.1	pH Units	7.4	6.8	6.6	6.7
Sulphate (as SO4)	5	mg/L	29	37	21	120
Total Dissolved Solids Dried at 180°C ± 2°C	10	mg/L	470	310	470	290
Total Suspended Solids Dried at 103–105°C	1	mg/L	1000	450	210	290
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	390	200	180	140
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10	< 10	< 10	< 10
Alkali Metals						
Calcium	0.5	mg/L	< 5	< 5	< 5	< 5
Magnesium	0.5	mg/L	< 5	< 5	< 5	< 5
Potassium	0.5	mg/L	< 5	< 5	< 5	< 5
Sodium	0.5	mg/L	11	8.7	11	6.6
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	0.002	< 0.001	0.002	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	< 0.001	0.005	< 0.001	0.002
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Manganese (filtered)	0.005	mg/L	0.35	0.40	0.37	0.29
Mercury (filtered)	0.0001	mg/L	< 0.0001	0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.023	0.033	0.004	0.014
Zinc (filtered)	0.005	mg/L	0.008	0.085	0.036	0.020

Client Sample ID			CSM_BH09S	CSM_BH10S	SRT_BH047	SRT_BH052
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Jn34709	S20-Jn34710	S20-Jn34711	S20-Jn34712
Date Sampled			Jun 19, 2020	Jun 19, 2020	Jun 17, 2020	Jun 17, 2020
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002

Client Sample ID			CSM_BH09S	CSM_BH10S	SRT_BH047	SRT_BH052
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Jn34709	S20-Jn34710	S20-Jn34711	S20-Jn34712
Date Sampled			Jun 19, 2020	Jun 19, 2020	Jun 17, 2020	Jun 17, 2020
Test/Reference	LOR	Unit				
BTEX						
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	117	119	120	128
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Polychlorinated Biphenyls						
Aroclor-1016	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Aroclor-1221	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Aroclor-1232	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Aroclor-1242	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Aroclor-1248	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Aroclor-1254	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Aroclor-1260	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PCB*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibutylchlorendate (surr.)	1	%	93	90	98	103
Tetrachloro-m-xylene (surr.)	1	%	86	63	99	79
Phenols (Halogenated)						
2-Chlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.6-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachlorophenols - Total	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Total Halogenated Phenol*	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2-Nitrophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4-Dimethylphenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006	< 0.006	< 0.006	< 0.006
4-Nitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Dinoseb	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
Total Non-Halogenated Phenol*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol-d6 (surr.)	1	%	56	80	23	45
TRH - 2013 NEPM Fractions (after silica gel clean-up)						
TRH >C10-C16 (after silica gel clean-up)	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C16-C34 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C34-C40 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID			CSM_BH09S	CSM_BH10S	SRT_BH047	SRT_BH052
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Jn34709	S20-Jn34710	S20-Jn34711	S20-Jn34712
Date Sampled			Jun 19, 2020	Jun 19, 2020	Jun 17, 2020	Jun 17, 2020
Test/Reference	LOR	Unit				
TRH - 1999 NEPM Fractions (after silica gel clean-up)						
TRH C10-C36 (Total) (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C10-C14 (after silica gel clean-up)	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH C15-C28 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C29-C36 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Polycyclic Aromatic Hydrocarbons (Trace level)						
Acenaphthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Acenaphthylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benz(a)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(a)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(b&j)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(g.h.i)perylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(k)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Chrysene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Dibenz(a.h)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Fluorene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Indeno(1.2.3-cd)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Naphthalene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	0.00002
Phenanthrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	0.00001
Pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	0.00002
Total PAH*	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	0.00005
2-Fluorobiphenyl (surr.)	1	%	76	91	89	79
p-Terphenyl-d14 (surr.)	1	%	74	90	51	74
Ammonia (as N)	0.01	mg/L	0.05	0.01	< 0.01	< 0.01
Chloride	1	mg/L	48	23	24	41
Cyanide (total)	0.004	mg/L	< 0.004	< 0.004	< 0.004	< 0.004
Ferrous Iron - Fe2+	0.05	mg/L	8.1	< 0.05	< 0.05	< 0.05
Nitrate (as N)	0.02	mg/L	< 0.02	3.8	20	8.7
pH (at 25°C)	0.1	pH Units	6.6	6.7	6.9	7.8
Sulphate (as SO4)	5	mg/L	120	49	13	29
Total Dissolved Solids Dried at 180°C ± 2°C	10	mg/L	320	240	230	220
Total Suspended Solids Dried at 103–105°C	1	mg/L	53	150	9.2	2000
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	100	130	85	260
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10	< 10	< 10	< 10
Alkali Metals						
Calcium	0.5	mg/L	< 5	30	34	25
Magnesium	0.5	mg/L	6.1	7.9	10.0	5.7
Potassium	0.5	mg/L	< 5	5.2	< 5	< 5
Sodium	0.5	mg/L	110	33	28	45
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.010	0.022	0.002	0.017
Lead (filtered)	0.001	mg/L	< 0.001	0.001	< 0.001	0.001
Manganese (filtered)	0.005	mg/L	0.70	0.41	0.009	0.008

Client Sample ID			CSM_BH09S	CSM_BH10S	SRT_BH047	SRT_BH052
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Jn34709	S20-Jn34710	S20-Jn34711	S20-Jn34712
Date Sampled			Jun 19, 2020	Jun 19, 2020	Jun 17, 2020	Jun 17, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.009	0.008	0.003	0.015
Zinc (filtered)	0.005	mg/L	0.058	0.059	0.015	0.084

Client Sample ID			SRT_BH059	GASW_BH10	GASW_BH11	GASW_BH23
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Jn34713	S20-Jn34714	S20-Jn34715	S20-Jn34716
Date Sampled			Jun 17, 2020	Jun 18, 2020	Jun 19, 2020	Jun 17, 2020
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	0.50
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	0.17	0.05
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	0.3	0.1
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	< 0.1	0.47	0.15
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	0.22
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	0.008
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	0.002
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	0.005
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	0.002
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	< 0.003	0.007
4-Bromofluorobenzene (surr.)	1	%	118	101	114	103
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.02
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	0.50
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02	0.26
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	0.34	0.07
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	< 0.05	0.34	0.07
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1	< 0.1	0.1
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	< 0.1	0.34	0.17
Polychlorinated Biphenyls						
Aroclor-1016	0.001	mg/L	< 0.001	-	-	-
Aroclor-1221	0.001	mg/L	< 0.001	-	-	-
Aroclor-1232	0.001	mg/L	< 0.001	-	-	-
Aroclor-1242	0.001	mg/L	< 0.001	-	-	-
Aroclor-1248	0.001	mg/L	< 0.001	-	-	-
Aroclor-1254	0.001	mg/L	< 0.001	-	-	-
Aroclor-1260	0.001	mg/L	< 0.001	-	-	-
Total PCB*	0.001	mg/L	< 0.001	-	-	-
Dibutylchlorendate (surr.)	1	%	55	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	91	-	-	-
Phenols (Halogenated)						
2-Chlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01

Client Sample ID			SRT_BH059	GASW_BH10	GASW_BH11	GASW_BH23
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Jn34713	S20-Jn34714	S20-Jn34715	S20-Jn34716
Date Sampled			Jun 17, 2020	Jun 18, 2020	Jun 19, 2020	Jun 17, 2020
Test/Reference	LOR	Unit				
Phenols (Halogenated)						
2.6-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachlorophenols - Total	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Total Halogenated Phenol*	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2-Nitrophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4-Dimethylphenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006	0.033	< 0.006	< 0.006
4-Nitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Dinoseb	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
Total Non-Halogenated Phenol*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol-d6 (surr.)	1	%	31	50	36	32
TRH - 2013 NEPM Fractions (after silica gel clean-up)						
TRH >C10-C16 (after silica gel clean-up)	0.05	mg/L	< 0.05	< 0.05	0.07	< 0.05
TRH >C16-C34 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C34-C40 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH - 1999 NEPM Fractions (after silica gel clean-up)						
TRH C10-C36 (Total) (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C10-C14 (after silica gel clean-up)	0.05	mg/L	< 0.05	< 0.05	0.05	< 0.05
TRH C15-C28 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C29-C36 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Polycyclic Aromatic Hydrocarbons (Trace level)						
Acenaphthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	0.00013
Acenaphthylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	0.00002
Anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	0.00011
Benz(a)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	0.00009
Benzo(a)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	0.00006
Benzo(b&j)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	0.00005
Benzo(g.h.i)perylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	0.00004
Benzo(k)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	0.00005
Chrysene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	0.00008
Dibenz(a.h)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	0.00025
Fluorene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	0.00019
Indeno(1.2.3-cd)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	0.00003
Naphthalene	0.00001	mg/L	< 0.00001	0.00004	< 0.00001	0.00025
Phenanthrene	0.00001	mg/L	< 0.00001	0.00001	< 0.00001	0.00021
Pyrene	0.00001	mg/L	< 0.00001	0.00002	< 0.00001	0.00031
Total PAH*	0.00001	mg/L	< 0.00001	0.00007	< 0.00001	0.00187
2-Fluorobiphenyl (surr.)	1	%	86	76	62	53
p-Terphenyl-d14 (surr.)	1	%	74	75	60	55

Client Sample ID			SRT_BH059	GASW_BH10	GASW_BH11	GASW_BH23
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Jn34713	S20-Jn34714	S20-Jn34715	S20-Jn34716
Date Sampled			Jun 17, 2020	Jun 18, 2020	Jun 19, 2020	Jun 17, 2020
Test/Reference	LOR	Unit				
Ammonia (as N)	0.01	mg/L	< 0.01	< 0.01	0.08	< 0.01
Chloride	1	mg/L	8.7	190	36	18
Cyanide (total)	0.004	mg/L	0.004	< 0.004	< 0.004	0.008
Ferrous Iron - Fe2+	0.05	mg/L	< 0.05	13	0.59	2.1
Nitrate (as N)	0.02	mg/L	1.8	< 0.02	0.05	< 0.02
pH (at 25°C)	0.1	pH Units	7.6	6.6	6.6	7.6
Sulphate (as SO4)	5	mg/L	16	< 5	42	54
Total Dissolved Solids Dried at 180°C ± 2°C	10	mg/L	270	840	220	380
Total Suspended Solids Dried at 103–105°C	1	mg/L	210	590	1200	1400
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	290	950	96	410
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10	< 10	< 10	< 10
Alkali Metals						
Calcium	0.5	mg/L	55	94	7.4	82
Magnesium	0.5	mg/L	9.4	62	5.5	5.5
Potassium	0.5	mg/L	7.0	12	< 5	14
Sodium	0.5	mg/L	16	150	44	30
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	0.003
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.014	< 0.001	0.011	0.011
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	0.001	< 0.001
Manganese (filtered)	0.005	mg/L	< 0.005	0.29	0.20	0.22
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.006	0.026	0.007	0.004
Zinc (filtered)	0.005	mg/L	0.057	0.030	0.11	0.042

Client Sample ID			GASW_BH25A	QC02	RB01	TRIP BLANK
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Jn34717	S20-Jn34718	S20-Jn34719	S20-Jn34720
Date Sampled			Jun 19, 2020	Jun 18, 2020	Jun 19, 2020	Jun 17, 2020
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	35	< 0.02	-	< 0.02
TRH C10-C14	0.05	mg/L	0.84	< 0.05	-	-
TRH C15-C28	0.1	mg/L	0.8	< 0.1	-	-
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	-	-
TRH C10-C36 (Total)	0.1	mg/L	1.64	< 0.1	-	-
BTEX						
Benzene	0.001	mg/L	9.4	< 0.001	-	< 0.001
Toluene	0.001	mg/L	6.5	< 0.001	-	< 0.001
Ethylbenzene	0.001	mg/L	0.27	< 0.001	-	< 0.001
m&p-Xylenes	0.002	mg/L	0.79	< 0.002	-	< 0.002
o-Xylene	0.001	mg/L	0.40	< 0.001	-	< 0.001
Xylenes - Total*	0.003	mg/L	1.2	< 0.003	-	< 0.003
4-Bromofluorobenzene (surr.)	1	%	120	116	-	121

Client Sample ID			GASW_BH25A	QC02	RB01	TRIP BLANK
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Jn34717	S20-Jn34718	S20-Jn34719	S20-Jn34720
Date Sampled			Jun 19, 2020	Jun 18, 2020	Jun 19, 2020	Jun 17, 2020
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	< 1	< 0.01	-	< 0.01
TRH C6-C10	0.02	mg/L	35	< 0.02	-	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	18	< 0.02	-	< 0.02
TRH >C10-C16	0.05	mg/L	0.80	< 0.05	-	-
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 1	< 0.05	-	-
TRH >C16-C34	0.1	mg/L	0.6	< 0.1	-	-
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	-	-
TRH >C10-C40 (total)*	0.1	mg/L	1.4	< 0.1	-	-
Phenols (Halogenated)						
2-Chlorophenol	0.003	mg/L	< 0.003	-	-	-
2.4-Dichlorophenol	0.003	mg/L	< 0.003	-	-	-
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01	-	-	-
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	-	-	-
2.6-Dichlorophenol	0.003	mg/L	< 0.003	-	-	-
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	-	-	-
Pentachlorophenol	0.01	mg/L	< 0.01	-	-	-
Tetrachlorophenols - Total	0.03	mg/L	< 0.03	-	-	-
Total Halogenated Phenol*	0.01	mg/L	< 0.01	-	-	-
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	< 0.1	-	-	-
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03	-	-	-
2-Methylphenol (o-Cresol)	0.003	mg/L	0.027	-	-	-
2-Nitrophenol	0.01	mg/L	< 0.01	-	-	-
2.4-Dimethylphenol	0.003	mg/L	0.016	-	-	-
2.4-Dinitrophenol	0.03	mg/L	< 0.03	-	-	-
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	0.019	-	-	-
4-Nitrophenol	0.03	mg/L	< 0.03	-	-	-
Dinoseb	0.1	mg/L	< 0.1	-	-	-
Phenol	0.003	mg/L	0.036	-	-	-
Total Non-Halogenated Phenol*	0.1	mg/L	< 0.1	-	-	-
Phenol-d6 (surr.)	1	%	49	-	-	-
TRH - 2013 NEPM Fractions (after silica gel clean-up)						
TRH >C10-C16 (after silica gel clean-up)	0.05	mg/L	0.34	-	-	-
TRH >C16-C34 (after silica gel clean-up)	0.1	mg/L	0.2	-	-	-
TRH >C34-C40 (after silica gel clean-up)	0.1	mg/L	< 0.1	-	-	-
TRH - 1999 NEPM Fractions (after silica gel clean-up)						
TRH C10-C36 (Total) (after silica gel clean-up)	0.1	mg/L	0.62	-	-	-
TRH C10-C14 (after silica gel clean-up)	0.05	mg/L	0.42	-	-	-
TRH C15-C28 (after silica gel clean-up)	0.1	mg/L	0.2	-	-	-
TRH C29-C36 (after silica gel clean-up)	0.1	mg/L	< 0.1	-	-	-
Polycyclic Aromatic Hydrocarbons (Trace level)						
Acenaphthene	0.00001	mg/L	0.00060	< 0.00001	-	-
Acenaphthylene	0.00001	mg/L	0.00038	< 0.00001	-	-
Anthracene	0.00001	mg/L	0.00056	< 0.00001	-	-
Benz(a)anthracene	0.00001	mg/L	0.00022	< 0.00001	-	-
Benzo(a)pyrene	0.00001	mg/L	0.00021	< 0.00001	-	-
Benzo(b&j)fluoranthene	0.00001	mg/L	0.00014	< 0.00001	-	-
Benzo(g.h.i)perylene	0.00001	mg/L	0.00011	< 0.00001	-	-
Benzo(k)fluoranthene	0.00001	mg/L	0.00015	< 0.00001	-	-

Client Sample ID			GASW_BH25A	QC02	RB01	TRIP BLANK
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Jn34717	S20-Jn34718	S20-Jn34719	S20-Jn34720
Date Sampled			Jun 19, 2020	Jun 18, 2020	Jun 19, 2020	Jun 17, 2020
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons (Trace level)						
Chrysene	0.00001	mg/L	0.00022	< 0.00001	-	-
Dibenz(a.h)anthracene	0.00001	mg/L	0.00005	< 0.00001	-	-
Fluoranthene	0.00001	mg/L	0.00086	< 0.00001	-	-
Fluorene	0.00001	mg/L	0.0014	< 0.00001	-	-
Indeno(1.2.3-cd)pyrene	0.00001	mg/L	0.00011	< 0.00001	-	-
Naphthalene	0.00001	mg/L	0.017	< 0.00001	-	-
Phenanthrene	0.00001	mg/L	0.0021	< 0.00001	-	-
Pyrene	0.00001	mg/L	0.0011	< 0.00001	-	-
Total PAH*	0.00001	mg/L	0.02521	< 0.00001	-	-
2-Fluorobiphenyl (surr.)	1	%	65	60	-	-
p-Terphenyl-d14 (surr.)	1	%	61	66	-	-
Ammonia (as N)	0.01	mg/L	0.01	-	-	-
Chloride	1	mg/L	10.0	-	-	-
Cyanide (total)	0.004	mg/L	0.034	-	-	-
Ferrous Iron - Fe2+	0.05	mg/L	0.36	-	-	-
Nitrate (as N)	0.02	mg/L	< 0.02	-	-	-
pH (at 25°C)	0.1	pH Units	7.3	-	-	-
Sulphate (as SO4)	5	mg/L	46	-	-	-
Total Dissolved Solids Dried at 180°C ± 2°C	10	mg/L	190	-	-	-
Total Suspended Solids Dried at 103–105°C	1	mg/L	210	-	-	-
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	190	-	-	-
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10	-	-	-
Alkali Metals						
Calcium	0.5	mg/L	53	-	-	-
Magnesium	0.5	mg/L	< 5	-	-	-
Potassium	0.5	mg/L	< 5	-	-	-
Sodium	0.5	mg/L	19	-	-	-
Heavy Metals						
Arsenic	0.001	mg/L	-	-	< 0.001	-
Arsenic (filtered)	0.001	mg/L	0.009	0.002	-	-
Cadmium	0.0002	mg/L	-	-	< 0.0002	-
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Chromium	0.001	mg/L	-	-	< 0.001	-
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	-	-
Copper	0.001	mg/L	-	-	< 0.001	-
Copper (filtered)	0.001	mg/L	< 0.001	0.003	-	-
Lead	0.001	mg/L	-	-	< 0.001	-
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	-	-
Manganese (filtered)	0.005	mg/L	0.038	-	-	-
Mercury	0.0001	mg/L	-	-	< 0.0001	-
Mercury (filtered)	0.0001	mg/L	0.0001	< 0.0001	-	-
Nickel	0.001	mg/L	-	-	< 0.001	-
Nickel (filtered)	0.001	mg/L	< 0.001	0.025	-	-
Zinc	0.005	mg/L	-	-	< 0.005	-
Zinc (filtered)	0.005	mg/L	< 0.005	0.032	-	-

Client Sample ID			TRIP SPIKE	SRT_BH050
Sample Matrix			Water	Water
Eurofins Sample No.			S20-Jn34721	S20-Jn34722
Date Sampled			Jun 17, 2020	Jun 17, 2020
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				
TRH C6-C9	0.02	mg/L	-	< 0.02
TRH C10-C14	0.05	mg/L	-	0.30
TRH C15-C28	0.1	mg/L	-	0.1
TRH C29-C36	0.1	mg/L	-	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	-	0.4
BTEX				
Benzene	0.001	mg/L	-	< 0.001
Toluene	0.001	mg/L	-	< 0.001
Ethylbenzene	0.001	mg/L	-	< 0.001
m&p-Xylenes	0.002	mg/L	-	< 0.002
o-Xylene	0.001	mg/L	-	< 0.001
Xylenes - Total*	0.003	mg/L	-	< 0.003
4-Bromofluorobenzene (surr.)	1	%	-	104
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
Naphthalene[N02]	0.01	mg/L	-	< 0.01
TRH C6-C10	0.02	mg/L	-	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	-	< 0.02
TRH >C10-C16	0.05	mg/L	-	0.23
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	-	0.23
TRH >C16-C34	0.1	mg/L	-	0.1
TRH >C34-C40	0.1	mg/L	-	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	-	0.33
Polychlorinated Biphenyls				
Aroclor-1016	0.001	mg/L	-	< 0.001
Aroclor-1221	0.001	mg/L	-	< 0.001
Aroclor-1232	0.001	mg/L	-	< 0.001
Aroclor-1242	0.001	mg/L	-	< 0.001
Aroclor-1248	0.001	mg/L	-	< 0.001
Aroclor-1254	0.001	mg/L	-	< 0.001
Aroclor-1260	0.001	mg/L	-	< 0.001
Total PCB*	0.001	mg/L	-	< 0.001
Dibutylchlorendate (surr.)	1	%	-	79
Tetrachloro-m-xylene (surr.)	1	%	-	53
Phenols (Halogenated)				
2-Chlorophenol	0.003	mg/L	-	< 0.003
2.4-Dichlorophenol	0.003	mg/L	-	< 0.003
2.4.5-Trichlorophenol	0.01	mg/L	-	< 0.01
2.4.6-Trichlorophenol	0.01	mg/L	-	< 0.01
2.6-Dichlorophenol	0.003	mg/L	-	< 0.003
4-Chloro-3-methylphenol	0.01	mg/L	-	< 0.01
Pentachlorophenol	0.01	mg/L	-	< 0.01
Tetrachlorophenols - Total	0.03	mg/L	-	< 0.03
Total Halogenated Phenol*	0.01	mg/L	-	< 0.01
Phenols (non-Halogenated)				
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	-	< 0.1
2-Methyl-4.6-dinitrophenol	0.03	mg/L	-	< 0.03
2-Methylphenol (o-Cresol)	0.003	mg/L	-	< 0.003
2-Nitrophenol	0.01	mg/L	-	< 0.01
2.4-Dimethylphenol	0.003	mg/L	-	< 0.003

Client Sample ID			TRIP SPIKE	SRT_BH050
Sample Matrix			Water	Water
Eurofins Sample No.			S20-Jn34721	S20-Jn34722
Date Sampled			Jun 17, 2020	Jun 17, 2020
Test/Reference	LOR	Unit		
Phenols (non-Halogenated)				
2.4-Dinitrophenol	0.03	mg/L	-	< 0.03
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	-	< 0.006
4-Nitrophenol	0.03	mg/L	-	< 0.03
Dinoseb	0.1	mg/L	-	< 0.1
Phenol	0.003	mg/L	-	< 0.003
Total Non-Halogenated Phenol*	0.1	mg/L	-	< 0.1
Phenol-d6 (surr.)	1	%	-	23
TRH - 2013 NEPM Fractions (after silica gel clean-up)				
TRH >C10-C16 (after silica gel clean-up)	0.05	mg/L	-	0.20
TRH >C16-C34 (after silica gel clean-up)	0.1	mg/L	-	0.1
TRH >C34-C40 (after silica gel clean-up)	0.1	mg/L	-	< 0.1
TRH - 1999 NEPM Fractions (after silica gel clean-up)				
TRH C10-C36 (Total) (after silica gel clean-up)	0.1	mg/L	-	0.27
TRH C10-C14 (after silica gel clean-up)	0.05	mg/L	-	0.27
TRH C15-C28 (after silica gel clean-up)	0.1	mg/L	-	< 0.1
TRH C29-C36 (after silica gel clean-up)	0.1	mg/L	-	< 0.1
Polycyclic Aromatic Hydrocarbons (Trace level)				
Acenaphthene	0.00001	mg/L	-	< 0.00001
Acenaphthylene	0.00001	mg/L	-	< 0.00001
Anthracene	0.00001	mg/L	-	< 0.00001
Benz(a)anthracene	0.00001	mg/L	-	< 0.00001
Benzo(a)pyrene	0.00001	mg/L	-	< 0.00001
Benzo(b&j)fluoranthene	0.00001	mg/L	-	< 0.00001
Benzo(g.h.i)perylene	0.00001	mg/L	-	< 0.00001
Benzo(k)fluoranthene	0.00001	mg/L	-	< 0.00001
Chrysene	0.00001	mg/L	-	< 0.00001
Dibenz(a.h)anthracene	0.00001	mg/L	-	< 0.00001
Fluoranthene	0.00001	mg/L	-	< 0.00001
Fluorene	0.00001	mg/L	-	< 0.00001
Indeno(1.2.3-cd)pyrene	0.00001	mg/L	-	< 0.00001
Naphthalene	0.00001	mg/L	-	< 0.00001
Phenanthrene	0.00001	mg/L	-	< 0.00001
Pyrene	0.00001	mg/L	-	< 0.00001
Total PAH*	0.00001	mg/L	-	< 0.00001
2-Fluorobiphenyl (surr.)	1	%	-	51
p-Terphenyl-d14 (surr.)	1	%	-	54
Ammonia (as N)	0.01	mg/L	-	0.02
Chloride	1	mg/L	-	11
Cyanide (total)	0.004	mg/L	-	< 0.004
Ferrous Iron - Fe2+	0.05	mg/L	-	< 0.05
Nitrate (as N)	0.02	mg/L	-	7.2
pH (at 25°C)	0.1	pH Units	-	4.2
Sulphate (as SO4)	5	mg/L	-	44
Total Dissolved Solids Dried at 180°C ± 2°C	10	mg/L	-	140
Total Suspended Solids Dried at 103–105°C	1	mg/L	-	370
Alkalinity (speciated)				
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	-	< 20
Carbonate Alkalinity (as CaCO3)	10	mg/L	-	< 10

Client Sample ID			TRIP SPIKE	SRT_BH050
Sample Matrix			Water	Water
Eurofins Sample No.			S20-Jn34721	S20-Jn34722
Date Sampled			Jun 17, 2020	Jun 17, 2020
Test/Reference	LOR	Unit		
Alkali Metals				
Calcium	0.5	mg/L	-	14
Magnesium	0.5	mg/L	-	< 5
Potassium	0.5	mg/L	-	5.1
Sodium	0.5	mg/L	-	13
Heavy Metals				
Arsenic (filtered)	0.001	mg/L	-	< 0.001
Cadmium (filtered)	0.0002	mg/L	-	< 0.0002
Chromium (filtered)	0.001	mg/L	-	< 0.001
Copper (filtered)	0.001	mg/L	-	0.011
Lead (filtered)	0.001	mg/L	-	< 0.001
Manganese (filtered)	0.005	mg/L	-	0.023
Mercury (filtered)	0.0001	mg/L	-	< 0.0001
Nickel (filtered)	0.001	mg/L	-	0.007
Zinc (filtered)	0.005	mg/L	-	0.052
Total Recoverable Hydrocarbons				
Naphthalene	1	%	110	-
TRH C6-C10	1	%	86	-
TRH C6-C9	1	%	83	-
BTEX				
Benzene	1	%	130	-
Ethylbenzene	1	%	95	-
m&p-Xylenes	1	%	100	-
o-Xylene	1	%	95	-
Toluene	1	%	110	-
Xylenes - Total	1	%	97	-
4-Bromofluorobenzene (surr.)	1	%	128	-

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Jun 23, 2020	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Melbourne	Jun 23, 2020	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Jun 23, 2020	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons	Melbourne	Jun 23, 2020	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Eurofins | mgt Suite B6 (filtered metals)			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Jun 23, 2020	
- Method: LTM-ORG-2010 TRH C6-C40			
Metals M8 filtered	Melbourne	Jun 23, 2020	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Polychlorinated Biphenyls	Melbourne	Jun 23, 2020	7 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8082)			
Polycyclic Aromatic Hydrocarbons (Trace level)	Melbourne	Jun 23, 2020	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water (trace)			
Cyanide (total)	Melbourne	Jun 23, 2020	14 Days
- Method: LTM-INO-4020 Total Free WAD Cyanide by CFA			
Ferrous Iron - Fe2+	Melbourne	Jun 23, 2020	7 Days
- Method: LTM-INO-4190 Ferrous Iron in Water by Discrete Analyser			
pH (at 25°C)	Melbourne	Jun 23, 2020	0 Hours
- Method: LTM-GEN-7090 pH in water by ISE			
Total Suspended Solids Dried at 103–105°C	Melbourne	Jun 23, 2020	7 Days
- Method: LTM-INO-4070 Analysis of Suspended Solids in Water by Gravimetry			
Metals M8	Melbourne	Jun 23, 2020	180 Days
- Method:			
Heavy Metals (filtered)	Melbourne	Jun 23, 2020	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Phenols (IWRG 621)			
Phenols (Halogenated)	Melbourne	Jun 23, 2020	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (non-Halogenated)	Melbourne	Jun 23, 2020	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
TRH - 2013 NEPM Fractions (after silica gel clean-up)	Melbourne	Jun 23, 2020	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
TRH - 1999 NEPM Fractions (after silica gel clean-up)	Melbourne	Jun 23, 2020	7 Days
- Method: TRH C6-C36 (Silica Gel Cleanup) - MGT 100A			
Major Cations			
Ammonia (as N)	Melbourne	Jun 23, 2020	28 Days
- Method: APHA 4500-NH3 Ammonia Nitrogen by FIA			
Alkali Metals	Melbourne	Jun 23, 2020	180 Days
- Method: LTM-MET-3010 Alkali Metals Sulfur Silicon Phosphorus by ICP-AES			
Major Anions			
Chloride	Melbourne	Jun 23, 2020	28 Days
- Method: LTM-INO-4090 Chloride by Discrete Analyser			
Nitrate (as N)	Melbourne	Jun 23, 2020	28 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Sulphate (as SO4)	Melbourne	Jun 23, 2020	28 Days
- Method: LTM-INO-4110 Sulfate by Discrete Analyser			

Description	Testing Site	Extracted	Holding Time
Alkalinity (speciated)	Melbourne	Jun 23, 2020	14 Days
- Method: LTM-INO-4250 Alkalinity by Electrometric Titration			
Total Dissolved Solids Dried at 180°C ± 2°C	Melbourne	Jun 23, 2020	7 Days
- Method: LTM-INO-4170 Total Dissolved Solids in Water			

eurofins | Environment Testing

ABN – 50 005 085 521 web : www.eurofins.com.au e.mail : EnviroSales@eurofins.com

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: GHD Pty Ltd NSW
Address: Level 15, 133 Castlereagh Street
Sydney
NSW 2000

Project Name: CENTRAL
Project ID: 21-27234

Order No.: 2127234
Report #: 726825
Phone: 02 9239 7100
Fax: 02 9239 7199

Received: Jun 19, 2020 3:12 PM
Due: Jun 26, 2020
Priority: 5 Day
Contact Name: Henry Luo

Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail						Cyanide (total)	Ferrous Iron - Fe2+	Manganese (filtered)	pH (at 25°C)	Total Suspended Solids Dried at 103–105°C	Polychlorinated Biphenyls	Metals M8	Phenols (IWRG 621)	Major Anions	Major Cations	TRH (after Silica Gel cleanup)	Eurofins | mgt Suite B6 (filtered metals)	BTEXN and Volatile TRH	BTEXN and Volatile TRH	Polycyclic Aromatic Hydrocarbons (Trace level)	Total Dissolved Solids Dried at 180°C ± 2°C
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217																					
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
External Laboratory																					
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																
1	CSM_BH02	Jun 18, 2020		Water	S20-Jn34705	X	X	X	X	X	X		X	X	X	X	X			X	X
2	CSM_BH04	Jun 18, 2020		Water	S20-Jn34706	X	X	X	X	X	X		X	X	X	X	X			X	X
3	CSM_BH06	Jun 18, 2020		Water	S20-Jn34707	X	X	X	X	X	X		X	X	X	X	X			X	X
4	CSM_BH08	Jun 17, 2020		Water	S20-Jn34708	X	X	X	X	X	X		X	X	X	X	X			X	X
5	CSM_BH09S	Jun 19, 2020		Water	S20-Jn34709	X	X	X	X	X	X		X	X	X	X	X			X	X
6	CSM_BH10S	Jun 19, 2020		Water	S20-Jn34710	X	X	X	X	X	X		X	X	X	X	X			X	X
7	SRT_BH047	Jun 17, 2020		Water	S20-Jn34711	X	X	X	X	X	X		X	X	X	X	X			X	X
8	SRT_BH052	Jun 17, 2020		Water	S20-Jn34712	X	X	X	X	X	X		X	X	X	X	X			X	X
9	SRT_BH059	Jun 17, 2020		Water	S20-Jn34713	X	X	X	X	X	X		X	X	X	X	X			X	X
10	GASW_BH10	Jun 18, 2020		Water	S20-Jn34714	X	X	X	X	X			X	X	X	X	X			X	X

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ABN – 50 005 085 521 web : www.eurofins.com.au e.mail : EnviroSales@eurofins.com

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

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Address: Level 15, 133 Castlereagh Street
Sydney
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Priority: 5 Day
Contact Name: Henry Luo

Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail						Cyanide (total)	Ferrous Iron - Fe2+	Manganese (filtered)	pH (at 25°C)	Total Suspended Solids Dried at 103–105°C	Polychlorinated Biphenyls	Metals M8	Phenols (IWRG 621)	Major Anions	Major Cations	TRH (after Silica Gel cleanup)	Eurofins | mgt Suite B6 (filtered metals)	BTEXN and Volatile TRH	BTEXN and Volatile TRH	Polycyclic Aromatic Hydrocarbons (Trace level)	Total Dissolved Solids Dried at 180°C ± 2°C
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217																					
Brisbane Laboratory - NATA Site # 20794																					
Perth Laboratory - NATA Site # 23736																					
11	GASW_BH11	Jun 19, 2020		Water	S20-Jn34715	X	X	X	X	X			X	X	X	X	X			X	X
12	GASW_BH23	Jun 17, 2020		Water	S20-Jn34716	X	X	X	X	X			X	X	X	X	X			X	X
13	GASW_BH25A	Jun 19, 2020		Water	S20-Jn34717	X	X	X	X	X			X	X	X	X	X			X	X
14	QC02	Jun 18, 2020		Water	S20-Jn34718												X			X	
15	RB01	Jun 19, 2020		Water	S20-Jn34719							X									
16	TRIP BLANK	Jun 17, 2020		Water	S20-Jn34720													X			
17	TRIP SPIKE	Jun 17, 2020		Water	S20-Jn34721														X		
18	SRT_BH050	Jun 17, 2020		Water	S20-Jn34722	X	X	X	X	X	X		X	X	X	X	X			X	X
Test Counts						14	14	14	14	14	10	1	14	14	14	14	15	1	1	15	14

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total*	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.01			0.01	Pass	
Naphthalene	mg/L	< 0.01			0.01	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/L	< 0.001			0.001	Pass	
Aroclor-1221	mg/L	< 0.001			0.001	Pass	
Aroclor-1232	mg/L	< 0.001			0.001	Pass	
Aroclor-1242	mg/L	< 0.001			0.001	Pass	
Aroclor-1248	mg/L	< 0.001			0.001	Pass	
Aroclor-1254	mg/L	< 0.001			0.001	Pass	
Aroclor-1260	mg/L	< 0.001			0.001	Pass	
Total PCB*	mg/L	< 0.001			0.001	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/L	< 0.003			0.003	Pass	
2.4-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
2.4.5-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.4.6-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.6-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
4-Chloro-3-methylphenol	mg/L	< 0.01			0.01	Pass	
Pentachlorophenol	mg/L	< 0.01			0.01	Pass	
Tetrachlorophenols - Total	mg/L	< 0.03			0.03	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	mg/L	< 0.1			0.1	Pass	
2-Methyl-4.6-dinitrophenol	mg/L	< 0.03			0.03	Pass	
2-Methylphenol (o-Cresol)	mg/L	< 0.003			0.003	Pass	
2-Nitrophenol	mg/L	< 0.01			0.01	Pass	
2.4-Dimethylphenol	mg/L	< 0.003			0.003	Pass	
2.4-Dinitrophenol	mg/L	< 0.03			0.03	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/L	< 0.006			0.006	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
4-Nitrophenol	mg/L	< 0.03			0.03	Pass	
Dinoseb	mg/L	< 0.1			0.1	Pass	
Phenol	mg/L	< 0.003			0.003	Pass	
Method Blank							
TRH - 2013 NEPM Fractions (after silica gel clean-up)							
TRH >C10-C16 (after silica gel clean-up)	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34 (after silica gel clean-up)	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40 (after silica gel clean-up)	mg/L	< 0.1			0.1	Pass	
Method Blank							
TRH - 1999 NEPM Fractions (after silica gel clean-up)							
TRH C10-C14 (after silica gel clean-up)	mg/L	< 0.05			0.05	Pass	
TRH C15-C28 (after silica gel clean-up)	mg/L	< 0.1			0.1	Pass	
TRH C29-C36 (after silica gel clean-up)	mg/L	< 0.1			0.1	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons (Trace level)							
Acenaphthene	mg/L	< 0.00001			0.00001	Pass	
Acenaphthylene	mg/L	< 0.00001			0.00001	Pass	
Anthracene	mg/L	< 0.00001			0.00001	Pass	
Benz(a)anthracene	mg/L	< 0.00001			0.00001	Pass	
Benzo(a)pyrene	mg/L	< 0.00001			0.00001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.00001			0.00001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.00001			0.00001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.00001			0.00001	Pass	
Chrysene	mg/L	< 0.00001			0.00001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.00001			0.00001	Pass	
Fluoranthene	mg/L	< 0.00001			0.00001	Pass	
Fluorene	mg/L	< 0.00001			0.00001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.00001			0.00001	Pass	
Naphthalene	mg/L	< 0.00001			0.00001	Pass	
Phenanthrene	mg/L	< 0.00001			0.00001	Pass	
Pyrene	mg/L	< 0.00001			0.00001	Pass	
Method Blank							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Chloride	mg/L	< 1			1	Pass	
Cyanide (total)	mg/L	0.004			0.004	Pass	
Ferrous Iron - Fe2+	mg/L	< 0.05			0.05	Pass	
Nitrate (as N)	mg/L	< 0.02			0.02	Pass	
Sulphate (as SO4)	mg/L	< 5			5	Pass	
Total Dissolved Solids Dried at 180°C ± 2°C	mg/L	< 10			10	Pass	
Total Suspended Solids Dried at 103–105°C	mg/L	< 1			1	Pass	
Method Blank							
Alkalinity (speciated)							
Bicarbonate Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Carbonate Alkalinity (as CaCO3)	mg/L	< 10			10	Pass	
Method Blank							
Alkali Metals							
Calcium	mg/L	< 0.5			0.5	Pass	
Magnesium	mg/L	< 0.5			0.5	Pass	
Potassium	mg/L	< 0.5			0.5	Pass	
Sodium	mg/L	< 0.5			0.5	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	126			70-130	Pass	
TRH C10-C14	%	88			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	116			70-130	Pass	
Toluene	%	102			70-130	Pass	
Ethylbenzene	%	92			70-130	Pass	
m&p-Xylenes	%	96			70-130	Pass	
Xylenes - Total*	%	95			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	75			70-130	Pass	
TRH C6-C10	%	125			70-130	Pass	
TRH >C10-C16	%	84			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1260	%	100			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	97			30-130	Pass	
2.4-Dichlorophenol	%	91			30-130	Pass	
2.4.5-Trichlorophenol	%	64			30-130	Pass	
2.4.6-Trichlorophenol	%	90			30-130	Pass	
2.6-Dichlorophenol	%	121			30-130	Pass	
4-Chloro-3-methylphenol	%	95			30-130	Pass	
Pentachlorophenol	%	55			30-130	Pass	
Tetrachlorophenols - Total	%	91			30-130	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	%	101			30-130	Pass	
2-Methyl-4.6-dinitrophenol	%	111			30-130	Pass	
2-Methylphenol (o-Cresol)	%	92			30-130	Pass	
2-Nitrophenol	%	107			30-130	Pass	
2.4-Dimethylphenol	%	88			30-130	Pass	
2.4-Dinitrophenol	%	46			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	%	94			30-130	Pass	
4-Nitrophenol	%	37			30-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Dinoseb	%	59			30-130	Pass	
Phenol	%	33			30-130	Pass	
LCS - % Recovery							
TRH - 2013 NEPM Fractions (after silica gel clean-up)							
TRH >C10-C16 (after silica gel clean-up)	%	84			70-130	Pass	
LCS - % Recovery							
TRH - 1999 NEPM Fractions (after silica gel clean-up)							
TRH C10-C14 (after silica gel clean-up)	%	88			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons (Trace level)							
Acenaphthene	%	113			70-130	Pass	
Acenaphthylene	%	114			70-130	Pass	
Anthracene	%	84			70-130	Pass	
Benz(a)anthracene	%	105			70-130	Pass	
Benzo(a)pyrene	%	130			70-130	Pass	
Benzo(b&j)fluoranthene	%	130			70-130	Pass	
Benzo(g.h.i)perylene	%	73			70-130	Pass	
Benzo(k)fluoranthene	%	118			70-130	Pass	
Chrysene	%	127			70-130	Pass	
Dibenz(a.h)anthracene	%	79			70-130	Pass	
Fluoranthene	%	121			70-130	Pass	
Fluorene	%	114			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	96			70-130	Pass	
Naphthalene	%	101			70-130	Pass	
Phenanthrene	%	105			70-130	Pass	
Pyrene	%	121			70-130	Pass	
LCS - % Recovery							
Ammonia (as N)	%	99			70-130	Pass	
Chloride	%	108			70-130	Pass	
Cyanide (total)	%	106			70-130	Pass	
Ferrous Iron - Fe2+	%	101			70-130	Pass	
Nitrate (as N)	%	101			70-130	Pass	
Sulphate (as SO4)	%	104			70-130	Pass	
Total Dissolved Solids Dried at 180°C ± 2°C	%	93			70-130	Pass	
Total Suspended Solids Dried at 103–105°C	%	105			70-130	Pass	
LCS - % Recovery							
Alkalinity (speciated)							
Carbonate Alkalinity (as CaCO3)	%	112			70-130	Pass	
LCS - % Recovery							
Alkali Metals							
Calcium	%	103			70-130	Pass	
Magnesium	%	109			70-130	Pass	
Potassium	%	104			70-130	Pass	
Sodium	%	114			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	98			80-120	Pass	
Cadmium	%	96			80-120	Pass	
Chromium	%	97			80-120	Pass	
Copper	%	98			80-120	Pass	
Lead	%	99			80-120	Pass	
Mercury	%	98			75-125	Pass	
Nickel	%	98			80-120	Pass	
Zinc	%	101			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	S20-Jn43884	NCP	%	84			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S20-Jn43884	NCP	%	80			70-130	Pass	
Spike - % Recovery									
				Result 1					
Total Suspended Solids Dried at 103–105°C	M20-Jn32879	NCP	%	122			70-130	Pass	
Spike - % Recovery									
Alkalinity (speciated)				Result 1					
Carbonate Alkalinity (as CaCO3)	M20-Ap19517	NCP	%	122			70-130	Pass	
Spike - % Recovery									
Alkali Metals				Result 1					
Calcium	B20-Jn30372	NCP	%	99			70-130	Pass	
Magnesium	B20-Jn30372	NCP	%	103			70-130	Pass	
Potassium	B20-Jn30372	NCP	%	98			70-130	Pass	
Sodium	B20-Jn30372	NCP	%	76			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic (filtered)	M20-Jn36330	NCP	%	106			70-130	Pass	
Cadmium (filtered)	M20-Jn36330	NCP	%	93			70-130	Pass	
Chromium (filtered)	M20-Jn36330	NCP	%	101			70-130	Pass	
Copper (filtered)	M20-Jn36330	NCP	%	96			70-130	Pass	
Lead (filtered)	M20-Jn36330	NCP	%	98			70-130	Pass	
Manganese (filtered)	M20-Jn36330	NCP	%	101			70-130	Pass	
Mercury (filtered)	M20-Jn36330	NCP	%	110			70-130	Pass	
Nickel (filtered)	M20-Jn36330	NCP	%	96			70-130	Pass	
Zinc (filtered)	M20-Jn36330	NCP	%	98			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1016	S20-Jn34706	CP	%	94			70-130	Pass	
Aroclor-1260	S20-Jn34706	CP	%	90			70-130	Pass	
Spike - % Recovery									
				Result 1					
Ammonia (as N)	S20-Jn34707	CP	%	100			70-130	Pass	
Nitrate (as N)	S20-Jn34707	CP	%	101			70-130	Pass	
Spike - % Recovery									
				Result 1					
Cyanide (total)	S20-Jn34712	CP	%	108			70-130	Pass	
Spike - % Recovery									
				Result 1					
Ammonia (as N)	S20-Jn34717	CP	%	102			70-130	Pass	
Chloride	S20-Jn34717	CP	%	107			70-130	Pass	
Nitrate (as N)	S20-Jn34717	CP	%	103			70-130	Pass	
Sulphate (as SO4)	S20-Jn34717	CP	%	97			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M20-Jn36688	NCP	%	109			75-125	Pass	
Cadmium	M20-Jn36688	NCP	%	100			75-125	Pass	
Chromium	M20-Jn36688	NCP	%	105			75-125	Pass	
Copper	M20-Jn36688	NCP	%	100			75-125	Pass	
Lead	M20-Jn36688	NCP	%	105			75-125	Pass	
Mercury	M20-Jn36688	NCP	%	96			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Nickel	M20-Jn36688	NCP	%	99			75-125	Pass	
Zinc	M20-Jn36688	NCP	%	104			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Phenols (Halogenated)				Result 1	Result 2	RPD			
2-Chlorophenol	S20-Jn34705	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.4-Dichlorophenol	S20-Jn34705	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.4.5-Trichlorophenol	S20-Jn34705	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.4.6-Trichlorophenol	S20-Jn34705	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.6-Dichlorophenol	S20-Jn34705	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
4-Chloro-3-methylphenol	S20-Jn34705	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Pentachlorophenol	S20-Jn34705	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Tetrachlorophenols - Total	S20-Jn34705	CP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
Duplicate									
Phenols (non-Halogenated)				Result 1	Result 2	RPD			
2-Cyclohexyl-4.6-dinitrophenol	S20-Jn34705	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
2-Methyl-4.6-dinitrophenol	S20-Jn34705	CP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
2-Methylphenol (o-Cresol)	S20-Jn34705	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2-Nitrophenol	S20-Jn34705	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.4-Dimethylphenol	S20-Jn34705	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.4-Dinitrophenol	S20-Jn34705	CP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	S20-Jn34705	CP	mg/L	< 0.006	< 0.006	<1	30%	Pass	
4-Nitrophenol	S20-Jn34705	CP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
Dinoseb	S20-Jn34705	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Phenol	S20-Jn34705	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons (Trace level)				Result 1	Result 2	RPD			
Acenaphthene	S20-Jn34705	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Acenaphthylene	S20-Jn34705	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Anthracene	S20-Jn34705	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Benz(a)anthracene	S20-Jn34705	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Benzo(a)pyrene	S20-Jn34705	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Benzo(b&j)fluoranthene	S20-Jn34705	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Benzo(g.h.i)perylene	S20-Jn34705	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Benzo(k)fluoranthene	S20-Jn34705	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Chrysene	S20-Jn34705	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Dibenz(a.h)anthracene	S20-Jn34705	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Fluoranthene	S20-Jn34705	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Fluorene	S20-Jn34705	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S20-Jn34705	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Naphthalene	S20-Jn34705	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Phenanthrene	S20-Jn34705	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Pyrene	S20-Jn34705	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Duplicate									
Alkali Metals				Result 1	Result 2	RPD			
Calcium	S20-Jn34705	CP	mg/L	< 5	< 5	<1	30%	Pass	
Magnesium	S20-Jn34705	CP	mg/L	< 5	< 5	<1	30%	Pass	
Potassium	S20-Jn34705	CP	mg/L	< 5	< 5	<1	30%	Pass	
Sodium	S20-Jn34705	CP	mg/L	11	12	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic (filtered)	M20-Jn36330	NCP	mg/L	0.003	0.003	1.0	30%	Pass	
Cadmium (filtered)	M20-Jn36330	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium (filtered)	M20-Jn36330	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	M20-Jn36330	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead (filtered)	M20-Jn36330	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese (filtered)	M20-Jn36330	NCP	mg/L	0.011	0.011	3.0	30%	Pass	
Mercury (filtered)	M20-Jn36330	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel (filtered)	M20-Jn36330	NCP	mg/L	0.015	0.015	3.0	30%	Pass	
Zinc (filtered)	M20-Jn36330	NCP	mg/L	0.017	0.018	2.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Total Suspended Solids Dried at 103–105°C	S20-Jn34706	CP	mg/L	450	450	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Ammonia (as N)	S20-Jn34707	CP	mg/L	0.05	0.05	9.0	30%	Pass	
Nitrate (as N)	S20-Jn34707	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
Alkali Metals				Result 1	Result 2	RPD			
Calcium	S20-Jn34709	CP	mg/L	< 5	< 5	<1	30%	Pass	
Magnesium	S20-Jn34709	CP	mg/L	6.1	5.8	5.0	30%	Pass	
Potassium	S20-Jn34709	CP	mg/L	< 5	< 5	<1	30%	Pass	
Sodium	S20-Jn34709	CP	mg/L	110	100	3.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
pH (at 25°C)	S20-Jn34710	CP	pH Units	6.7	6.7	pass	30%	Pass	
Duplicate									
Alkalinity (speciated)				Result 1	Result 2	RPD			
Bicarbonate Alkalinity (as CaCO3)	S20-Jn34710	CP	mg/L	130	170	27	30%	Pass	
Carbonate Alkalinity (as CaCO3)	S20-Jn34710	CP	mg/L	< 10	< 10	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chloride	S20-Jn34711	CP	mg/L	24	24	2.0	30%	Pass	
Sulphate (as SO4)	S20-Jn34711	CP	mg/L	13	13	2.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Cyanide (total)	S20-Jn34712	CP	mg/L	< 0.004	< 0.004	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Ferrous Iron - Fe2+	S20-Jn34714	CP	mg/L	13	13	2.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Total Dissolved Solids Dried at 180°C ± 2°C	S20-Jn34715	CP	mg/L	220	180	20	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	S20-Jn34717	CP	mg/L	0.84	1.0	20	30%	Pass	
TRH C15-C28	S20-Jn34717	CP	mg/L	0.8	1.1	39	30%	Fail	Q15
TRH C29-C36	S20-Jn34717	CP	mg/L	< 0.1	0.2	64	30%	Fail	Q15
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	S20-Jn34717	CP	mg/L	0.80	0.97	19	30%	Pass	
TRH >C16-C34	S20-Jn34717	CP	mg/L	0.6	1.0	47	30%	Fail	Q15
TRH >C34-C40	S20-Jn34717	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	

Duplicate									
TRH - 2013 NEPM Fractions (after silica gel clean-up)				Result 1	Result 2	RPD			
TRH >C10-C16 (after silica gel clean-up)	S20-Jn34717	CP	mg/L	0.34	0.35	2.0	30%	Pass	
TRH >C16-C34 (after silica gel clean-up)	S20-Jn34717	CP	mg/L	0.2	0.4	63	30%	Fail	Q15
TRH >C34-C40 (after silica gel clean-up)	S20-Jn34717	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
TRH - 1999 NEPM Fractions (after silica gel clean-up)				Result 1	Result 2	RPD			
TRH C10-C36 (Total) (after silica gel clean-up)	S20-Jn34717	CP	mg/L	0.62	0.82	27	30%	Pass	
TRH C10-C14 (after silica gel clean-up)	S20-Jn34717	CP	mg/L	0.42	0.43	2.0	30%	Pass	
TRH C15-C28 (after silica gel clean-up)	S20-Jn34717	CP	mg/L	0.2	0.4	49	30%	Fail	Q15
TRH C29-C36 (after silica gel clean-up)	S20-Jn34717	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Ammonia (as N)	S20-Jn34717	CP	mg/L	0.01	0.01	6.0	30%	Pass	
Nitrate (as N)	S20-Jn34717	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M20-Jn32721	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	M20-Jn32721	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	M20-Jn32721	NCP	mg/L	0.002	0.002	10	30%	Pass	
Copper	M20-Jn32721	NCP	mg/L	0.003	0.003	3.0	30%	Pass	
Lead	M20-Jn32721	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury	M20-Jn32721	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	M20-Jn32721	NCP	mg/L	0.008	0.008	2.0	30%	Pass	
Zinc	M20-Jn32721	NCP	mg/L	0.005	0.005	5.0	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Alena Bounkeua	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)
Scott Beddoes	Senior Analyst-Inorganic (VIC)



Glenn Jackson
General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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☑ **Sydney**
Unit F3 - 6 Building F, 16 Mars Road, Lane Cove
Phone: +612 9900 8400
Email: enviro.syd@mgtlabmark.com.au

☐ **Brisbane**
Unit 1-21 Smallwood Place, Murrarie
Phone: +617 3902 4600
Email: enviro.bris@mgtlabmark.com.au

☐ **Melbourne**
2 Kingston Town Close, Oakleigh, VIC 3166
Phone: +613 8564 5000 Fax: +613 8564 5090
Email: enquiries.melb@mgtlabmark.com.au

CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name : GHD Pty Ltd, Sydney	Contact Name : Terry Nham	Purchase Order : 2127234	COC Number :
Office Address :	Project Manager : Henry Luo	PROJECT Number : 21-27234	Eurofins | mgt quote ID : GHD Rates 2020
Level 15, 133 Castlereagh Street, Sydney NSW 2000	Email for results : terry.nham@ghd.com henry.luo@ghd.com	PROJECT Name : Central	Data output format: ESDAT

Special Directions & Comments :

Eurofins | mgt DI water batch number:

	Sample ID	Date	Matrix	TRH, BTEXN, 8 Metals (Dissolved) (Suite B6)	PAH - Trace LOR	Phenols		TRH (with Silica Gel Cleanup)	Cyanide - Trace Level (<0.004 mg/L)	Ammonia	Major Anions and Cations		Ferrous Iron	Manganese	pH	TDS	TSS		TRH C6-C10 / BTEX	8 Metals (Total)					Sample comments:
1	CSM_BH02	15/7	Water	X	X	X		X	X	X	X		X	X	X	X	X								
2	CSM_BH04	15/7	Water	X	X	X		X	X	X	X		X	X	X	X	X								
3	CSM_BH06	15/7	Water	X	X	X		X	X	X	X		X	X	X	X	X								
4	CSM_BH08	15/7	Water	X	X	X		X	X	X	X		X	X	X	X	X								
5	CSM_BH09S	16/7	Water	X	X	X		X	X	X	X		X	X	X	X	X								
6	CSM_BH10S	15/7	Water	X	X	X		X	X	X	X		X	X	X	X	X								
7	SRT_BH047	17/7	Water	X	X	X		X	X	X	X		X	X	X	X	X								
8	SRT_BH052	17/7	Water	X	X	X		X	X	X	X		X	X	X	X	X								
9	SRT_BH059	17/7	Water	X	X	X		X	X	X	X		X	X	X	X	X								
10	~~GASW_BH7~~		~~Water~~	~~X~~	~~X~~	~~X~~		~~X~~	~~X~~	~~X~~	~~X~~		~~X~~	~~X~~	~~X~~	~~X~~	~~X~~								
11	GASW_BH10	15/7	Water	X	X	X		X	X	X	X		X	X	X	X	X								
12	GASW_BH11	16/7	Water	X	X	X		X	X	X	X		X	X	X	X	X								
13	GASW_BH23	16/7	Water	X	X	X		X	X	X	X		X	X	X	X	X								
14	GASW_BH25a	16/7	Water	X	X	X		X	X	X	X		X	X	X	X	X								
15	~~QC01~~		~~Water~~	PLEASE SEE TRIP BLANKS WITH ATTACHED COC																					
16	QC02	16/7	Water	X	X																				

Some common holding times (with correct preservation). For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

	500P	250P	60P	1LA	40mL vial	200mL A	Jar	Bag
1	1		4		2	2		
2	1		4		2	2		
3	1		4		2	2		
4	1		4		2	2		
5	1		4		2	2		
6	1		4		2	2		
7	1		4		2	2		
8	1		4		2	2		
9	1		4		2	2		
10	~~1~~		~~4~~		~~2~~	~~2~~		
11	1		4		2	2		
12	1		4		2	2		
13	1		4		2	2		
14	1		4		2	2		
15	~~1~~		~~4~~		~~2~~	~~2~~		
16	1		4		2	2		

Laboratory Staff

Relinquished By: Terry Nham - GHD
Date & Time : 17/7/2020
Signature:

Received By:
Date & Time : 17/7/2020 1:38PM
Signature:

Turn around time

1 DAY ☐ 2 DAY ☐ 3 DAY ☐
5 DAY ☒ 10 DAY ☐ Other:

Method Of Shipment

☐ Courier
☒ Hand Delivered
☐ Postal
Courier Consignment # :

Temperature on arrival: 5.83°C

Report number: 732890

eurofins | mgt

☑ **Sydney**
Unit F3 - 6 Building F, 16 Mars Road, Lane Cove
Phone: +612 9900 8400
Email: enviro.syd@mgtlabmark.com.au

☐ **Brisbane**
Unit 1-21 Smallwood Place, Murrarie
Phone: +617 3902 4600
Email: enviro.bris@mgtlabmark.com.au

☐ **Melbourne**
2 Kingston Town Close, Oakleigh, VIC 3166
Phone: +613 8564 5000 Fax: +613 8564 5090
Email: enquiries.melb@mgtlabmark.com.au

CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name : GHD Pty Ltd, Sydney	Contact Name : Terry Nham	Purchase Order : 2127234	COC Number :
Office Address :	Project Manager : Henry Luo	PROJECT Number : 21-27234	Eurofins | mgt quote ID : GHD Rates 2020
Level 15, 133 Castlereagh Street, Sydney NSW 2000	Email for results : terry.nham@ghd.com henry.luo@ghd.com	PROJECT Name : Central	Data output format: ESDAT

Special Directions & Comments :

Eurofins | mgt DI water batch number:

	Sample ID	Date	Matrix	TRH, BTEXN, 8 Metals (Dissolved) (Suite B6)	PAH - Trace LOR	Phenols	TRH (with Silica Gel Cleanup)	Cyanide - Trace Level (<0.004 mg/L)	Ammonia	Major Anions and Cations	Ferrous Iron	Manganese	pH	TDS	TSS	TRH C6-C10 / BTEX	8 Metals (Total)
1	RB01	16/7	Water														X
2	Trip Blank	15/7	Water													X	
3	Trip Spike	15/7	Water													X	
4	SRT_BH050	17/7	Water	X	X	X		X	X		X	X					
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	
13																	
14																	
15																	
16																	

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

500P	250P	60P	1LA	40mL vial	200mL A	Jar	Bag
		1					
				2			
				2			
		4		2	1		

Sample comments:

Laboratory Staff

Relinquished By: Terry Nham - GHD
Date & Time : 17/07/2020
Signature:

Received By: Suzanne Ford
Date & Time : 17/7/2020 1:36PM
Signature:

Turn around time

1 DAY ☐ 2 DAY ☐ 3 DAY ☐
5 DAY ☑ 10 DAY ☐ Other:

Method Of Shipment

☐ Courier
☒ Hand Delivered
☐ Postal
Courier Consignment # :

Temperature on arrival: 5.8°C

Report number: 732590

eurofins | Environment Testing

Melbourne
6 Monterey Road
Dandenong South Vic 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 23736

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com web : www.eurofins.com.au

Sample Receipt Advice

Company name: **GHD Pty Ltd NSW**

Contact name: Henry Luo
Project name: CENTRAL
Project ID: 21-27234
COC number: Not provided
Turn around time: 5 Day
Date/Time received: Jul 17, 2020 1:36 PM
Eurofins reference: **732590**

Sample information

- ☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ☑ Sample Temperature of a random sample selected from the batch as recorded by Eurofins Sample Receipt : 5.8 degrees Celsius.
- ☑ All samples have been received as described on the above COC.
- ☑ COC has been completed correctly.
- ☑ Attempt to chill was evident.
- ☑ Appropriately preserved sample containers have been used.
- ☑ All samples were received in good condition.
- ☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ☑ Appropriate sample containers have been used.
- ☑ Sample containers for volatile analysis received with zero headspace.
- ☒ Split sample sent to requested external lab.
- ☒ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Alena Bounkeua on Phone : or by e.mail: AlenaBounkeua@eurofins.com

Results will be delivered electronically via e.mail to Henry Luo - henry.luo@ghd.com.

Note: A copy of these results will also be delivered to the general GHD Pty Ltd NSW email address.

eurofins | Environment Testing

ABN – 50 005 085 521 web : www.eurofins.com.au e.mail : EnviroSales@eurofins.com

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

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2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: GHD Pty Ltd NSW
Address: Level 15, 133 Castlereagh Street
Sydney
NSW 2000

Project Name: CENTRAL
Project ID: 21-27234

Order No.: 21-27234
Report #: 732590
Phone: 02 9239 7100
Fax: 02 9239 7199

Received: Jul 17, 2020 1:36 PM
Due: Jul 24, 2020
Priority: 5 Day
Contact Name: Henry Luo

Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail						Ammonia (as N)	Cyanide (total)	Ferrous Iron - Fe2+	Manganese (filtered)	pH (at 25°C)	Total Suspended Solids Dried at 103–105°C	Metals M8	Phenols (IWRG 621)	Phenols (IWRG 621)	TRH (after Silica Gel cleanup)	Eurofins Suite B6 (filtered metals)	BTEXN and Volatile TRH	Eurofins Suite B11E: Cl/SO4/Alkalinity	BTEXN and Volatile TRH	Eurofins Suite B11C: Na/K/Ca/Mg	Polycyclic Aromatic Hydrocarbons (Trace level)	Total Dissolved Solids Dried at 180°C ± 2°C
Melbourne Laboratory - NATA Site # 1254 & 14271							X						X	X		X		X			X	
Sydney Laboratory - NATA Site # 18217						X		X	X	X	X	X	X	X	X	X	X	X	X	X		X
Brisbane Laboratory - NATA Site # 20794																						
Perth Laboratory - NATA Site # 23736																						
External Laboratory																						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																	
1	CSM_BH02	Jul 15, 2020		Water	S20-Jl29870	X	X	X	X	X	X			X		X		X		X	X	X
2	CSM_BH04	Jul 15, 2020		Water	S20-Jl29871	X	X	X	X	X	X			X	X	X		X		X	X	X
3	CSM_BH06	Jul 15, 2020		Water	S20-Jl29872	X	X	X	X	X	X			X		X		X		X	X	X
4	CSM_BH08	Jul 15, 2020		Water	S20-Jl29873	X	X	X	X	X	X			X		X		X		X	X	X
5	CSM_BH09S	Jul 16, 2020		Water	S20-Jl29874	X	X	X	X	X	X			X		X		X		X	X	X
6	CSM_BH10S	Jul 15, 2020		Water	S20-Jl29875	X	X	X	X	X	X			X	X	X		X		X	X	X
7	SRT_BH047	Jul 17, 2020		Water	S20-Jl29876	X	X	X	X	X	X			X		X		X		X	X	X
8	SRT_BH052	Jul 17, 2020		Water	S20-Jl29877	X	X	X	X	X	X			X		X		X		X	X	X
9	SRT_BH059	Jul 17, 2020		Water	S20-Jl29878	X	X	X	X	X	X			X		X		X		X	X	X
10	GASW_BH10	Jul 15, 2020		Water	S20-Jl29879	X	X	X	X	X	X			X	X	X		X		X	X	X

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ABN – 50 005 085 521 web : www.eurofins.com.au e.mail : EnviroSales@eurofins.com

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Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: GHD Pty Ltd NSW
Address: Level 15, 133 Castlereagh Street
Sydney
NSW 2000

Project Name: CENTRAL
Project ID: 21-27234

Order No.: 21-27234
Report #: 732590
Phone: 02 9239 7100
Fax: 02 9239 7199

Received: Jul 17, 2020 1:36 PM
Due: Jul 24, 2020
Priority: 5 Day
Contact Name: Henry Luo

Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail						Ammonia (as N)	Cyanide (total)	Ferrous Iron - Fe2+	Manganese (filtered)	pH (at 25°C)	Total Suspended Solids Dried at 103–105°C	Metals M8	Phenols (IWRG 621)	Phenols (IWRG 621)	TRH (after Silica Gel cleanup)	Eurofins Suite B6 (filtered metals)	BTEXN and Volatile TRH	Eurofins Suite B11E: Cl/SO4/Alkalinity	BTEXN and Volatile TRH	Eurofins Suite B11C: Na/K/Ca/Mg	Polycyclic Aromatic Hydrocarbons (Trace level)	Total Dissolved Solids Dried at 180°C ± 2°C
Melbourne Laboratory - NATA Site # 1254 & 14271							X						X	X		X		X			X	
Sydney Laboratory - NATA Site # 18217						X		X	X	X	X	X	X	X	X	X	X	X	X	X		X
Brisbane Laboratory - NATA Site # 20794																						
Perth Laboratory - NATA Site # 23736																						
11	GASW_BH11	Jul 16, 2020		Water	S20-Jl29880	X	X	X	X	X	X			X	X	X		X		X	X	X
12	GASW_BH23	Jul 16, 2020		Water	S20-Jl29881	X	X	X	X	X	X			X	X	X		X		X	X	X
13	GASW_BH25A	Jul 16, 2020		Water	S20-Jl29882	X	X	X	X	X	X			X	X	X		X		X	X	X
14	QC02	Jul 16, 2020		Water	S20-Jl29883											X					X	
15	RB01	Jul 16, 2020		Water	S20-Jl29884							X										
16	TRIP BLANK	Jul 15, 2020		Water	S20-Jl29885												X					
17	TRIP SPIKE	Jul 15, 2020		Water	S20-Jl29886														X			
18	SRT_BH050	Jul 17, 2020		Water	S20-Jl29887	X	X	X	X				X			X					X	
Test Counts						14	14	14	14	13	13	1	14	14	6	15	1	13	1	13	15	13

GHD Pty Ltd NSW
Level 15, 133 Castlereagh Street
Sydney
NSW 2000

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Attention: **Henry Luo**

Report **732590-W**
Project name CENTRAL
Project ID 21-27234
Received Date Jul 17, 2020

Client Sample ID			**CSM_BH02**	**CSM_BH04**	**CSM_BH06**	**CSM_BH08**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**S20-JI29870**	**S20-JI29871**	**S20-JI29872**	**S20-JI29873**
Date Sampled			**Jul 15, 2020**	**Jul 15, 2020**	**Jul 15, 2020**	**Jul 15, 2020**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	0.09	< 0.05	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1	0.1	< 0.1	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	0.19	< 0.1	< 0.1
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	106	100	110	113
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	0.06	< 0.05	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	0.06	< 0.05	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1	0.1	< 0.1	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	0.16	< 0.1	< 0.1
Phenols (Halogenated)						
2-Chlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.6-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachlorophenols - Total	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Total Halogenated Phenol*	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01

Client Sample ID			CSM_BH02	CSM_BH04	CSM_BH06	CSM_BH08
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-JI29870	S20-JI29871	S20-JI29872	S20-JI29873
Date Sampled			Jul 15, 2020	Jul 15, 2020	Jul 15, 2020	Jul 15, 2020
Test/Reference	LOR	Unit				
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2-Nitrophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4-Dimethylphenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006	< 0.006	< 0.006	< 0.006
4-Nitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Dinoseb	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
Total Non-Halogenated Phenol*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol-d6 (surr.)	1	%	INT	INT	INT	INT
Polycyclic Aromatic Hydrocarbons (Trace level)						
Acenaphthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Acenaphthylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benz(a)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(a)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(b&j)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(g.h.i)perylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(k)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Chrysene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Dibenz(a.h)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Fluorene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Indeno(1.2.3-cd)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Naphthalene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Phenanthrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Total PAH*	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
2-Fluorobiphenyl (surr.)	1	%	58	60	52	73
p-Terphenyl-d14 (surr.)	1	%	84	126	105	99
Ammonia (as N)	0.01	mg/L	< 0.01	< 0.01	< 0.01	0.03
Chloride	1	mg/L	160	58	240	90
Cyanide (total)	0.004	mg/L	0.020	0.005	< 0.004	< 0.004
Ferrous Iron - Fe2+	0.5	mg/L	3.6	1.6	4.9	3.8
pH (at 25°C)	0.1	pH Units	6.4	6.4	6.6	6.9
Sulphate (as SO4)	2	mg/L	32	46	28	46
Total Dissolved Solids Dried at 180°C ± 2°C	5	mg/L	1000	430	610	410
Total Suspended Solids Dried at 103–105°C	5	mg/L	1600	420	120	17
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	270	110	130	150
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10	< 10	< 10	< 10
Hydroxide Alkalinity (as CaCO3)	20	mg/L	< 20	< 20	< 20	< 20
Total Alkalinity (as CaCO3)	20	mg/L	270	110	130	150

Client Sample ID			CSM_BH02	CSM_BH04	CSM_BH06	CSM_BH08
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-JI29870	S20-JI29871	S20-JI29872	S20-JI29873
Date Sampled			Jul 15, 2020	Jul 15, 2020	Jul 15, 2020	Jul 15, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	0.003	< 0.001	0.002	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	0.001	< 0.001
Copper (filtered)	0.001	mg/L	< 0.001	0.002	0.016	0.009
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	0.001	< 0.001
Manganese (filtered)	0.005	mg/L	0.30	0.43	0.29	0.25
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.027	0.038	0.085	0.015
Zinc (filtered)	0.005	mg/L	0.016	0.018	0.17	0.034
Alkali Metals						
Calcium	0.5	mg/L	38	9.1	27	14
Magnesium	0.5	mg/L	37	16	27	18
Potassium	0.5	mg/L	7.4	5.1	4.5	3.7
Sodium	0.5	mg/L	110	69	110	79
TRH - 2013 NEPM Fractions (after silica gel clean-up)						
TRH >C10-C16 (after silica gel clean-up)	0.05	mg/L	-	0.05	-	-
TRH >C16-C34 (after silica gel clean-up)	0.1	mg/L	-	< 0.1	-	-
TRH >C34-C40 (after silica gel clean-up)	0.1	mg/L	-	< 0.1	-	-
TRH - 1999 NEPM Fractions (after silica gel clean-up)						
TRH C10-C36 (Total) (after silica gel clean-up)	0.4	mg/L	-	< 0.1	-	-
TRH C10-C14 (after silica gel clean-up)	0.05	mg/L	-	< 0.05	-	-
TRH C15-C28 (after silica gel clean-up)	0.1	mg/L	-	< 0.1	-	-
TRH C29-C36 (after silica gel clean-up)	0.1	mg/L	-	< 0.1	-	-

Client Sample ID			CSM_BH09S	CSM_BH10S	SRT_BH047	SRT_BH052
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-JI29874	S20-JI29875	S20-JI29876	S20-JI29877
Date Sampled			Jul 16, 2020	Jul 15, 2020	Jul 17, 2020	Jul 17, 2020
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	104	103	112	112

Client Sample ID			CSM_BH09S	CSM_BH10S	SRT_BH047	SRT_BH052
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-JI29874	S20-JI29875	S20-JI29876	S20-JI29877
Date Sampled			Jul 16, 2020	Jul 15, 2020	Jul 17, 2020	Jul 17, 2020
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1	0.1	< 0.1	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	0.1	< 0.1	< 0.1
Phenols (Halogenated)						
2-Chlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.6-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachlorophenols - Total	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Total Halogenated Phenol*	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2-Nitrophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4-Dimethylphenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006	< 0.006	< 0.006	< 0.006
4-Nitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Dinoseb	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
Total Non-Halogenated Phenol*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol-d6 (surr.)	1	%	INT	INT	INT	INT
Polycyclic Aromatic Hydrocarbons (Trace level)						
Acenaphthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Acenaphthylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benz(a)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(a)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(b&j)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(g.h.i)perylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(k)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Chrysene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Dibenz(a.h)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Fluorene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Indeno(1.2.3-cd)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Naphthalene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Phenanthrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Total PAH*	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001

Client Sample ID			CSM_BH09S	CSM_BH10S	SRT_BH047	SRT_BH052
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-JI29874	S20-JI29875	S20-JI29876	S20-JI29877
Date Sampled			Jul 16, 2020	Jul 15, 2020	Jul 17, 2020	Jul 17, 2020
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons (Trace level)						
2-Fluorobiphenyl (surr.)	1	%	73	78	81	91
p-Terphenyl-d14 (surr.)	1	%	124	99	78	108
Ammonia (as N)	0.01	mg/L	< 0.01	0.06	0.24	0.16
Chloride	1	mg/L	49	22	25	45
Cyanide (total)	0.004	mg/L	0.014	0.007	< 0.004	< 0.004
Ferrous Iron - Fe2+	0.5	mg/L	6.2	< 0.5	< 0.5	< 0.5
pH (at 25°C)	0.1	pH Units	6.4	5.9	7.5	6.7
Sulphate (as SO4)	2	mg/L	130	56	16	34
Total Dissolved Solids Dried at 180°C ± 2°C	5	mg/L	420	210	320	270
Total Suspended Solids Dried at 103–105°C	5	mg/L	190	360	6.2	110
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	87	34	120	74
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10	< 10	< 10	< 10
Hydroxide Alkalinity (as CaCO3)	20	mg/L	< 20	< 20	< 20	< 20
Total Alkalinity (as CaCO3)	20	mg/L	87	34	120	74
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	0.001
Copper (filtered)	0.001	mg/L	0.002	< 0.001	0.009	0.002
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Manganese (filtered)	0.005	mg/L	0.80	0.43	< 0.005	< 0.005
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.007	0.014	0.009	< 0.001
Zinc (filtered)	0.005	mg/L	0.025	0.006	0.049	< 0.005
Alkali Metals						
Calcium	0.5	mg/L	3.6	12	44	19
Magnesium	0.5	mg/L	7.6	14	10	4.9
Potassium	0.5	mg/L	3.5	9.9	0.9	2.3
Sodium	0.5	mg/L	110	32	29	50
TRH - 2013 NEPM Fractions (after silica gel clean-up)						
TRH >C10-C16 (after silica gel clean-up)	0.05	mg/L	-	< 0.05	-	-
TRH >C16-C34 (after silica gel clean-up)	0.1	mg/L	-	< 0.1	-	-
TRH >C34-C40 (after silica gel clean-up)	0.1	mg/L	-	< 0.1	-	-
TRH - 1999 NEPM Fractions (after silica gel clean-up)						
TRH C10-C36 (Total) (after silica gel clean-up)	0.4	mg/L	-	< 0.1	-	-
TRH C10-C14 (after silica gel clean-up)	0.05	mg/L	-	< 0.05	-	-
TRH C15-C28 (after silica gel clean-up)	0.1	mg/L	-	< 0.1	-	-
TRH C29-C36 (after silica gel clean-up)	0.1	mg/L	-	< 0.1	-	-

Client Sample ID			SRT_BH059	GASW_BH10	GASW_BH11	GASW_BH23
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-JI29878	S20-JI29879	S20-JI29880	S20-JI29881
Date Sampled			Jul 17, 2020	Jul 15, 2020	Jul 16, 2020	Jul 16, 2020
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	0.11
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	0.28	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1	0.2	0.5	0.3
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	0.2	0.78	0.3
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	0.084
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	0.002
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	0.001
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	104	114	108	106
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	0.12
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02	0.03
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	0.34	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	< 0.05	0.34	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1	0.1	0.2	0.1
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	0.1	0.54	0.1
Phenols (Halogenated)						
2-Chlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.6-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachlorophenols - Total	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Total Halogenated Phenol*	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2-Nitrophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4-Dimethylphenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006	0.068	< 0.006	< 0.006
4-Nitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Dinoseb	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
Total Non-Halogenated Phenol*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol-d6 (surr.)	1	%	INT	INT	INT	INT

Client Sample ID			SRT_BH059	GASW_BH10	GASW_BH11	GASW_BH23
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-JI29878	S20-JI29879	S20-JI29880	S20-JI29881
Date Sampled			Jul 17, 2020	Jul 15, 2020	Jul 16, 2020	Jul 16, 2020
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons (Trace level)						
Acenaphthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Acenaphthylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Anthracene	0.00001	mg/L	< 0.00001	< 0.00001	0.00003	< 0.00001
Benz(a)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(a)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(b&j)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(g.h.i)perylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(k)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Chrysene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Dibenz(a.h)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	0.00004	0.00005
Fluorene	0.00001	mg/L	< 0.00001	< 0.00001	0.00002	< 0.00001
Indeno(1.2.3-cd)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Naphthalene	0.00001	mg/L	< 0.00001	< 0.00001	0.00008	< 0.00001
Phenanthrene	0.00001	mg/L	< 0.00001	< 0.00001	0.00007	< 0.00001
Pyrene	0.00001	mg/L	< 0.00001	< 0.00001	0.00004	0.00010
Total PAH*	0.00001	mg/L	< 0.00001	< 0.00001	0.00028	0.00015
2-Fluorobiphenyl (surr.)	1	%	75	89	77	52
p-Terphenyl-d14 (surr.)	1	%	90	110	98	105
Ammonia (as N)	0.01	mg/L	< 0.01	< 0.01	0.02	0.14
Chloride	1	mg/L	11	190	39	20
Cyanide (total)	0.004	mg/L	< 0.004	< 0.004	< 0.004	< 0.004
Ferrous Iron - Fe2+	0.5	mg/L	< 0.5	8.3	1.9	< 0.5
pH (at 25°C)	0.1	pH Units	7.3	6.9	6.3	7.2
Sulphate (as SO4)	2	mg/L	23	5.4	51	180
Total Dissolved Solids Dried at 180°C ± 2°C	5	mg/L	330	840	650	860
Total Suspended Solids Dried at 103–105°C	5	mg/L	41	570	2100	6100
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	I/S	630	47	540
Carbonate Alkalinity (as CaCO3)	10	mg/L	I/S	< 10	< 10	< 10
Hydroxide Alkalinity (as CaCO3)	20	mg/L	I/S	< 20	< 20	< 20
Total Alkalinity (as CaCO3)	20	mg/L	I/S	630	47	540
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	0.002	0.002
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	0.002	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.007	< 0.001	0.084	0.008
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	0.001	< 0.001
Manganese (filtered)	0.005	mg/L	< 0.005	0.22	0.18	0.15
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	< 0.001	0.010	0.011	0.004
Zinc (filtered)	0.005	mg/L	< 0.005	0.006	0.090	0.029
Alkali Metals						
Calcium	0.5	mg/L	57	110	18	330
Magnesium	0.5	mg/L	10	69	13	24
Potassium	0.5	mg/L	7.5	14	6.2	25
Sodium	0.5	mg/L	19	150	45	33

Client Sample ID			SRT_BH059	GASW_BH10	GASW_BH11	GASW_BH23
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-JI29878	S20-JI29879	S20-JI29880	S20-JI29881
Date Sampled			Jul 17, 2020	Jul 15, 2020	Jul 16, 2020	Jul 16, 2020
Test/Reference	LOR	Unit				
TRH - 2013 NEPM Fractions (after silica gel clean-up)						
TRH >C10-C16 (after silica gel clean-up)	0.05	mg/L	-	< 0.05	< 0.05	< 0.05
TRH >C16-C34 (after silica gel clean-up)	0.1	mg/L	-	< 0.1	< 0.1	< 0.1
TRH >C34-C40 (after silica gel clean-up)	0.1	mg/L	-	< 0.1	< 0.1	< 0.1
TRH - 1999 NEPM Fractions (after silica gel clean-up)						
TRH C10-C36 (Total) (after silica gel clean-up)	0.4	mg/L	-	< 0.1	< 0.1	< 0.1
TRH C10-C14 (after silica gel clean-up)	0.05	mg/L	-	< 0.05	< 0.05	< 0.05
TRH C15-C28 (after silica gel clean-up)	0.1	mg/L	-	< 0.1	< 0.1	< 0.1
TRH C29-C36 (after silica gel clean-up)	0.1	mg/L	-	< 0.1	< 0.1	< 0.1

Client Sample ID			[R16]GASW_BH25A	QC02	RB01	TRIP BLANK
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-JI29882	S20-JI29883	S20-JI29884	S20-JI29885
Date Sampled			Jul 16, 2020	Jul 16, 2020	Jul 16, 2020	Jul 15, 2020
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	7.8	< 0.02	-	< 0.02
TRH C10-C14	0.05	mg/L	0.48	< 0.05	-	-
TRH C15-C28	0.1	mg/L	0.4	< 0.1	-	-
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	-	-
TRH C10-C36 (Total)	0.1	mg/L	0.88	< 0.1	-	-
BTEX						
Benzene	0.001	mg/L	5.0	< 0.001	-	< 0.001
Toluene	0.001	mg/L	2.0	< 0.001	-	< 0.001
Ethylbenzene	0.001	mg/L	0.12	< 0.001	-	< 0.001
m&p-Xylenes	0.002	mg/L	0.27	< 0.002	-	< 0.002
o-Xylene	0.001	mg/L	0.16	< 0.001	-	< 0.001
Xylenes - Total*	0.003	mg/L	0.43	< 0.003	-	< 0.003
4-Bromofluorobenzene (surr.)	1	%	106	113	-	113
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	< 1	< 0.01	-	< 0.01
TRH C6-C10	0.02	mg/L	7.9	< 0.02	-	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	0.35	< 0.02	-	< 0.02
TRH >C10-C16	0.05	mg/L	0.36	< 0.05	-	-
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 1	< 0.05	-	-
TRH >C16-C34	0.1	mg/L	0.3	< 0.1	-	-
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	-	-
TRH >C10-C40 (total)*	0.1	mg/L	0.66	< 0.1	-	-
Phenols (Halogenated)						
2-Chlorophenol	0.003	mg/L	< 0.003	-	-	-
2.4-Dichlorophenol	0.003	mg/L	< 0.003	-	-	-
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01	-	-	-
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	-	-	-
2.6-Dichlorophenol	0.003	mg/L	< 0.003	-	-	-
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	-	-	-
Pentachlorophenol	0.01	mg/L	< 0.01	-	-	-
Tetrachlorophenols - Total	0.03	mg/L	< 0.03	-	-	-
Total Halogenated Phenol*	0.01	mg/L	< 0.01	-	-	-

Client Sample ID			R16GASW_BH25A	QC02	RB01	TRIP BLANK
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-JI29882	S20-JI29883	S20-JI29884	S20-JI29885
Date Sampled			Jul 16, 2020	Jul 16, 2020	Jul 16, 2020	Jul 15, 2020
Test/Reference	LOR	Unit				
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	< 0.1	-	-	-
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03	-	-	-
2-Methylphenol (o-Cresol)	0.003	mg/L	0.007	-	-	-
2-Nitrophenol	0.01	mg/L	< 0.01	-	-	-
2.4-Dimethylphenol	0.003	mg/L	0.003	-	-	-
2.4-Dinitrophenol	0.03	mg/L	< 0.03	-	-	-
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	0.006	-	-	-
4-Nitrophenol	0.03	mg/L	< 0.03	-	-	-
Dinoseb	0.1	mg/L	< 0.1	-	-	-
Phenol	0.003	mg/L	0.011	-	-	-
Total Non-Halogenated Phenol*	0.1	mg/L	< 0.1	-	-	-
Phenol-d6 (surr.)	1	%	INT	-	-	-
Polycyclic Aromatic Hydrocarbons (Trace level)						
Acenaphthene	0.00001	mg/L	0.00008	< 0.00001	-	-
Acenaphthylene	0.00001	mg/L	0.00002	< 0.00001	-	-
Anthracene	0.00001	mg/L	0.00010	< 0.00001	-	-
Benz(a)anthracene	0.00001	mg/L	0.00009	< 0.00001	-	-
Benzo(a)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	-	-
Benzo(b&j)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	-	-
Benzo(g.h.i)perylene	0.00001	mg/L	< 0.00001	< 0.00001	-	-
Benzo(k)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	-	-
Chrysene	0.00001	mg/L	0.00008	< 0.00001	-	-
Dibenz(a.h)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	-	-
Fluoranthene	0.00001	mg/L	0.00039	< 0.00001	-	-
Fluorene	0.00001	mg/L	0.00011	< 0.00001	-	-
Indeno(1.2.3-cd)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	-	-
Naphthalene	0.00001	mg/L	0.00017	< 0.00001	-	-
Phenanthrene	0.00001	mg/L	0.00028	< 0.00001	-	-
Pyrene	0.00001	mg/L	0.00045	< 0.00001	-	-
Total PAH*	0.00001	mg/L	0.00177	< 0.00001	-	-
2-Fluorobiphenyl (surr.)	1	%	58	62	-	-
p-Terphenyl-d14 (surr.)	1	%	84	90	-	-
Ammonia (as N)	0.01	mg/L	0.24	-	-	-
Chloride	1	mg/L	17	-	-	-
Cyanide (total)	0.004	mg/L	0.007	-	-	-
Ferrous Iron - Fe2+	0.5	mg/L	0.9	-	-	-
pH (at 25°C)	0.1	pH Units	7.6	-	-	-
Sulphate (as SO4)	2	mg/L	120	-	-	-
Total Dissolved Solids Dried at 180°C ± 2°C	5	mg/L	290	-	-	-
Total Suspended Solids Dried at 103–105°C	5	mg/L	56	-	-	-
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	150	-	-	-
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10	-	-	-
Hydroxide Alkalinity (as CaCO3)	20	mg/L	< 20	-	-	-
Total Alkalinity (as CaCO3)	20	mg/L	150	-	-	-

Client Sample ID			R16GASW_BH25A	QC02	RB01	TRIP BLANK
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-JI29882	S20-JI29883	S20-JI29884	S20-JI29885
Date Sampled			Jul 16, 2020	Jul 16, 2020	Jul 16, 2020	Jul 15, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	0.001	mg/L	-	-	< 0.001	-
Arsenic (filtered)	0.001	mg/L	0.004	< 0.001	-	-
Cadmium	0.0002	mg/L	-	-	< 0.0002	-
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Chromium	0.001	mg/L	-	-	< 0.001	-
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	-	-
Copper	0.001	mg/L	-	-	< 0.001	-
Copper (filtered)	0.001	mg/L	0.020	< 0.001	-	-
Lead	0.001	mg/L	-	-	< 0.001	-
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	-	-
Manganese (filtered)	0.005	mg/L	0.11	-	-	-
Mercury	0.0001	mg/L	-	-	< 0.0001	-
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	-	-
Nickel	0.001	mg/L	-	-	< 0.001	-
Nickel (filtered)	0.001	mg/L	0.007	0.007	-	-
Zinc	0.005	mg/L	-	-	< 0.005	-
Zinc (filtered)	0.005	mg/L	0.041	0.025	-	-
Alkali Metals						
Calcium	0.5	mg/L	81	-	-	-
Magnesium	0.5	mg/L	6.2	-	-	-
Potassium	0.5	mg/L	4.2	-	-	-
Sodium	0.5	mg/L	20	-	-	-
TRH - 2013 NEPM Fractions (after silica gel clean-up)						
TRH >C10-C16 (after silica gel clean-up)	0.05	mg/L	0.11	-	-	-
TRH >C16-C34 (after silica gel clean-up)	0.1	mg/L	< 0.1	-	-	-
TRH >C34-C40 (after silica gel clean-up)	0.1	mg/L	< 0.1	-	-	-
TRH - 1999 NEPM Fractions (after silica gel clean-up)						
TRH C10-C36 (Total) (after silica gel clean-up)	0.4	mg/L	< 0.1	-	-	-
TRH C10-C14 (after silica gel clean-up)	0.05	mg/L	< 0.05	-	-	-
TRH C15-C28 (after silica gel clean-up)	0.1	mg/L	< 0.1	-	-	-
TRH C29-C36 (after silica gel clean-up)	0.1	mg/L	< 0.1	-	-	-

Client Sample ID			TRIP SPIKE	SRT_BH050
Sample Matrix			Water	Water
Eurofins Sample No.			S20-JI29886	S20-JI29887
Date Sampled			Jul 15, 2020	Jul 17, 2020
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				
TRH C6-C9	0.02	mg/L	-	< 0.02
TRH C10-C14	0.05	mg/L	-	< 0.05
TRH C15-C28	0.1	mg/L	-	< 0.1
TRH C29-C36	0.1	mg/L	-	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	-	< 0.1

Client Sample ID			TRIP SPIKE	SRT_BH050
Sample Matrix			Water	Water
Eurofins Sample No.			S20-JI29886	S20-JI29887
Date Sampled			Jul 15, 2020	Jul 17, 2020
Test/Reference	LOR	Unit		
BTEX				
Benzene	0.001	mg/L	-	< 0.001
Toluene	0.001	mg/L	-	< 0.001
Ethylbenzene	0.001	mg/L	-	< 0.001
m&p-Xylenes	0.002	mg/L	-	< 0.002
o-Xylene	0.001	mg/L	-	< 0.001
Xylenes - Total*	0.003	mg/L	-	< 0.003
4-Bromofluorobenzene (surr.)	1	%	-	112
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
Naphthalene[N02]	0.01	mg/L	-	< 0.01
TRH C6-C10	0.02	mg/L	-	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	-	< 0.02
TRH >C10-C16	0.05	mg/L	-	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	-	< 0.05
TRH >C16-C34	0.1	mg/L	-	< 0.1
TRH >C34-C40	0.1	mg/L	-	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	-	< 0.1
Phenols (Halogenated)				
2-Chlorophenol	0.003	mg/L	-	< 0.003
2.4-Dichlorophenol	0.003	mg/L	-	< 0.003
2.4.5-Trichlorophenol	0.01	mg/L	-	< 0.01
2.4.6-Trichlorophenol	0.01	mg/L	-	< 0.01
2.6-Dichlorophenol	0.003	mg/L	-	< 0.003
4-Chloro-3-methylphenol	0.01	mg/L	-	< 0.01
Pentachlorophenol	0.01	mg/L	-	< 0.01
Tetrachlorophenols - Total	0.03	mg/L	-	< 0.03
Total Halogenated Phenol*	0.01	mg/L	-	< 0.01
Phenols (non-Halogenated)				
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	-	< 0.1
2-Methyl-4.6-dinitrophenol	0.03	mg/L	-	< 0.03
2-Methylphenol (o-Cresol)	0.003	mg/L	-	< 0.003
2-Nitrophenol	0.01	mg/L	-	< 0.01
2.4-Dimethylphenol	0.003	mg/L	-	< 0.003
2.4-Dinitrophenol	0.03	mg/L	-	< 0.03
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	-	< 0.006
4-Nitrophenol	0.03	mg/L	-	< 0.03
Dinoseb	0.1	mg/L	-	< 0.1
Phenol	0.003	mg/L	-	< 0.003
Total Non-Halogenated Phenol*	0.1	mg/L	-	< 0.1
Phenol-d6 (surr.)	1	%	-	53
Polycyclic Aromatic Hydrocarbons (Trace level)				
Acenaphthene	0.00001	mg/L	-	< 0.00001
Acenaphthylene	0.00001	mg/L	-	< 0.00001
Anthracene	0.00001	mg/L	-	< 0.00001
Benz(a)anthracene	0.00001	mg/L	-	< 0.00001
Benzo(a)pyrene	0.00001	mg/L	-	< 0.00001
Benzo(b&j)fluoranthene	0.00001	mg/L	-	< 0.00001
Benzo(g.h.i)perylene	0.00001	mg/L	-	< 0.00001
Benzo(k)fluoranthene	0.00001	mg/L	-	< 0.00001
Chrysene	0.00001	mg/L	-	< 0.00001

Client Sample ID			TRIP SPIKE	SRT_BH050
Sample Matrix			Water	Water
Eurofins Sample No.			S20-JI29886	S20-JI29887
Date Sampled			Jul 15, 2020	Jul 17, 2020
Test/Reference	LOR	Unit		
Polycyclic Aromatic Hydrocarbons (Trace level)				
Dibenz(a.h)anthracene	0.00001	mg/L	-	< 0.00001
Fluoranthene	0.00001	mg/L	-	< 0.00001
Fluorene	0.00001	mg/L	-	< 0.00001
Indeno(1.2.3-cd)pyrene	0.00001	mg/L	-	< 0.00001
Naphthalene	0.00001	mg/L	-	< 0.00001
Phenanthrene	0.00001	mg/L	-	< 0.00001
Pyrene	0.00001	mg/L	-	< 0.00001
Total PAH*	0.00001	mg/L	-	< 0.00001
2-Fluorobiphenyl (surr.)	1	%	-	73
p-Terphenyl-d14 (surr.)	1	%	-	99
Ammonia (as N)	0.01	mg/L	-	0.02
Cyanide (total)	0.004	mg/L	-	< 0.004
Ferrous Iron - Fe2+	0.5	mg/L	-	< 0.5
TRH C6-C10	1	%	97	-
Heavy Metals				
Arsenic (filtered)	0.001	mg/L	-	< 0.001
Cadmium (filtered)	0.0002	mg/L	-	< 0.0002
Chromium (filtered)	0.001	mg/L	-	< 0.001
Copper (filtered)	0.001	mg/L	-	0.091
Lead (filtered)	0.001	mg/L	-	0.002
Manganese (filtered)	0.005	mg/L	-	0.021
Mercury (filtered)	0.0001	mg/L	-	< 0.0001
Nickel (filtered)	0.001	mg/L	-	0.010
Zinc (filtered)	0.005	mg/L	-	0.078
Total Recoverable Hydrocarbons				
Naphthalene	1	%	86	-
TRH C6-C9	1	%	92	-
BTEX				
Benzene	1	%	82	-
Ethylbenzene	1	%	78	-
m&p-Xylenes	1	%	84	-
o-Xylene	1	%	73	-
Toluene	1	%	79	-
Xylenes - Total	1	%	77	-
4-Bromofluorobenzene (surr.)	1	%	106	-

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Jul 21, 2020	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Jul 17, 2020	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Jul 17, 2020	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons	Sydney	Jul 17, 2020	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Eurofins Suite B6 (filtered metals)			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Jul 21, 2020	
- Method: LTM-ORG-2010 TRH C6-C40			
Metals M8 filtered	Sydney	Jul 17, 2020	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Phenols (Halogenated)	Melbourne	Jul 17, 2020	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (non-Halogenated)	Melbourne	Jul 17, 2020	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Polycyclic Aromatic Hydrocarbons (Trace level)	Melbourne	Jul 21, 2020	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water (trace)			
Ammonia (as N)	Sydney	Jul 20, 2020	28 Days
- Method: LTM-INO-4200 Ammonia by Discrete Analyser			
Cyanide (total)	Melbourne	Jul 20, 2020	14 Days
- Method: LTM-INO-4020 Total Free WAD Cyanide by CFA			
Ferrous Iron - Fe2+	Sydney	Jul 20, 2020	7 Days
- Method: LTM-INO-4190 Ferrous Iron in Water by Discrete Analyser			
pH (at 25°C)	Sydney	Jul 20, 2020	1 Days
- Method: LTM-GEN-7090 pH in water by ISE			
Total Suspended Solids Dried at 103–105°C	Sydney	Jul 20, 2020	7 Days
- Method: LTM-INO-4070 Analysis of Suspended Solids in Water by Gravimetry			
Metals M8	Sydney	Jul 24, 2020	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Heavy Metals (filtered)	Sydney	Jul 20, 2020	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Eurofins Suite B11C: Na/K/Ca/Mg	Sydney	Jul 24, 2020	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Eurofins Suite B11E: Cl/SO4/Alkalinity			
Chloride	Sydney	Jul 17, 2020	28 Days
- Method: E045 /E047 Chloride			
Sulphate (as SO4)	Sydney	Jul 17, 2020	28 Days
- Method: E045 Anions by Ion Chromatography			
Alkalinity (speciated)	Melbourne	Jul 21, 2020	14 Days
- Method: LTM-INO-4250 Alkalinity by Electrometric Titration			
Total Dissolved Solids Dried at 180°C ± 2°C	Sydney	Jul 17, 2020	7 Days
- Method: LTM-INO-4170 Total Dissolved Solids in Water			
TRH - 2013 NEPM Fractions (after silica gel clean-up)	Sydney	Jul 17, 2020	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
TRH - 1999 NEPM Fractions (after silica gel clean-up)	Sydney	Jul 17, 2020	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			

eurofins | Environment Testing

ABN – 50 005 085 521 web : www.eurofins.com.au e.mail : EnviroSales@eurofins.com

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: GHD Pty Ltd NSW
Address: Level 15, 133 Castlereagh Street
Sydney
NSW 2000

Project Name: CENTRAL
Project ID: 21-27234

Order No.: 21-27234
Report #: 732590
Phone: 02 9239 7100
Fax: 02 9239 7199

Received: Jul 17, 2020 1:36 PM
Due: Jul 24, 2020
Priority: 5 Day
Contact Name: Henry Luo

Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail						Ammonia (as N)	Cyanide (total)	Ferrous Iron - Fe2+	Manganese (filtered)	pH (at 25°C)	Total Suspended Solids Dried at 103–105°C	Metals M8	Phenols (IWRG 621)	Phenols (IWRG 621)	TRH (after Silica Gel cleanup)	Eurofins Suite B6 (filtered metals)	BTEXN and Volatile TRH	Eurofins Suite B11E: Cl/SO4/Alkalinity	BTEXN and Volatile TRH	Eurofins Suite B11C: Na/K/Ca/Mg	Polycyclic Aromatic Hydrocarbons (Trace level)	Total Dissolved Solids Dried at 180°C ± 2°C
Melbourne Laboratory - NATA Site # 1254 & 14271							X						X	X		X		X			X	
Sydney Laboratory - NATA Site # 18217						X		X	X	X	X	X	X	X	X	X	X	X	X	X		X
Brisbane Laboratory - NATA Site # 20794																						
Perth Laboratory - NATA Site # 23736																						
External Laboratory																						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																	
1	CSM_BH02	Jul 15, 2020		Water	S20-Jl29870	X	X	X	X	X	X			X		X		X		X	X	X
2	CSM_BH04	Jul 15, 2020		Water	S20-Jl29871	X	X	X	X	X	X			X	X	X		X		X	X	X
3	CSM_BH06	Jul 15, 2020		Water	S20-Jl29872	X	X	X	X	X	X			X		X		X		X	X	X
4	CSM_BH08	Jul 15, 2020		Water	S20-Jl29873	X	X	X	X	X	X			X		X		X		X	X	X
5	CSM_BH09S	Jul 16, 2020		Water	S20-Jl29874	X	X	X	X	X	X			X		X		X		X	X	X
6	CSM_BH10S	Jul 15, 2020		Water	S20-Jl29875	X	X	X	X	X	X			X	X	X		X		X	X	X
7	SRT_BH047	Jul 17, 2020		Water	S20-Jl29876	X	X	X	X	X	X			X		X		X		X	X	X
8	SRT_BH052	Jul 17, 2020		Water	S20-Jl29877	X	X	X	X	X	X			X		X		X		X	X	X
9	SRT_BH059	Jul 17, 2020		Water	S20-Jl29878	X	X	X	X	X	X			X		X		X		X	X	X
10	GASW_BH10	Jul 15, 2020		Water	S20-Jl29879	X	X	X	X	X	X			X	X	X		X		X	X	X

eurofins | Environment Testing

ABN – 50 005 085 521 web : www.eurofins.com.au e.mail : EnviroSales@eurofins.com

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: GHD Pty Ltd NSW
Address: Level 15, 133 Castlereagh Street
Sydney
NSW 2000

Project Name: CENTRAL
Project ID: 21-27234

Order No.: 21-27234
Report #: 732590
Phone: 02 9239 7100
Fax: 02 9239 7199

Received: Jul 17, 2020 1:36 PM
Due: Jul 24, 2020
Priority: 5 Day
Contact Name: Henry Luo

Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail						Ammonia (as N)	Cyanide (total)	Ferrous Iron - Fe2+	Manganese (filtered)	pH (at 25°C)	Total Suspended Solids Dried at 103–105°C	Metals M8	Phenols (IWRG 621)	Phenols (IWRG 621)	TRH (after Silica Gel cleanup)	Eurofins Suite B6 (filtered metals)	BTEXN and Volatile TRH	Eurofins Suite B11E: Cl/SO4/Alkalinity	BTEXN and Volatile TRH	Eurofins Suite B11C: Na/K/Ca/Mg	Polycyclic Aromatic Hydrocarbons (Trace level)	Total Dissolved Solids Dried at 180°C ± 2°C
Melbourne Laboratory - NATA Site # 1254 & 14271							X						X	X		X		X			X	
Sydney Laboratory - NATA Site # 18217						X		X	X	X	X	X	X	X	X	X	X	X	X	X		X
Brisbane Laboratory - NATA Site # 20794																						
Perth Laboratory - NATA Site # 23736																						
11	GASW_BH11	Jul 16, 2020		Water	S20-Jl29880	X	X	X	X	X	X			X	X	X		X		X	X	X
12	GASW_BH23	Jul 16, 2020		Water	S20-Jl29881	X	X	X	X	X	X			X	X	X		X		X	X	X
13	GASW_BH25A	Jul 16, 2020		Water	S20-Jl29882	X	X	X	X	X	X			X	X	X		X		X	X	X
14	QC02	Jul 16, 2020		Water	S20-Jl29883											X					X	
15	RB01	Jul 16, 2020		Water	S20-Jl29884							X										
16	TRIP BLANK	Jul 15, 2020		Water	S20-Jl29885												X					
17	TRIP SPIKE	Jul 15, 2020		Water	S20-Jl29886														X			
18	SRT_BH050	Jul 17, 2020		Water	S20-Jl29887	X	X	X	X				X			X					X	
Test Counts						14	14	14	14	13	13	1	14	14	6	15	1	13	1	13	15	13

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total*	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.01			0.01	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/L	< 0.003			0.003	Pass	
2.4-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
2.4.5-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.4.6-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.6-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
4-Chloro-3-methylphenol	mg/L	< 0.01			0.01	Pass	
Pentachlorophenol	mg/L	< 0.01			0.01	Pass	
Tetrachlorophenols - Total	mg/L	< 0.03			0.03	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	mg/L	< 0.1			0.1	Pass	
2-Methyl-4.6-dinitrophenol	mg/L	< 0.03			0.03	Pass	
2-Methylphenol (o-Cresol)	mg/L	< 0.003			0.003	Pass	
2-Nitrophenol	mg/L	< 0.01			0.01	Pass	
2.4-Dimethylphenol	mg/L	< 0.003			0.003	Pass	
2.4-Dinitrophenol	mg/L	< 0.03			0.03	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/L	< 0.006			0.006	Pass	
4-Nitrophenol	mg/L	< 0.03			0.03	Pass	
Dinoseb	mg/L	< 0.1			0.1	Pass	
Phenol	mg/L	< 0.003			0.003	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons (Trace level)							
Acenaphthene	mg/L	< 0.00001			0.00001	Pass	
Acenaphthylene	mg/L	< 0.00001			0.00001	Pass	
Anthracene	mg/L	< 0.00001			0.00001	Pass	
Benz(a)anthracene	mg/L	< 0.00001			0.00001	Pass	
Benzo(a)pyrene	mg/L	< 0.00001			0.00001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.00001			0.00001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.00001			0.00001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(k)fluoranthene	mg/L	< 0.00001			0.00001	Pass	
Chrysene	mg/L	< 0.00001			0.00001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.00001			0.00001	Pass	
Fluoranthene	mg/L	< 0.00001			0.00001	Pass	
Fluorene	mg/L	< 0.00001			0.00001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.00001			0.00001	Pass	
Naphthalene	mg/L	< 0.00001			0.00001	Pass	
Phenanthrene	mg/L	< 0.00001			0.00001	Pass	
Pyrene	mg/L	< 0.00001			0.00001	Pass	
Method Blank							
Chloride	mg/L	< 1			1	Pass	
Cyanide (total)	mg/L	< 0.004			0.004	Pass	
Ferrous Iron - Fe2+	mg/L	< 0.5			0.5	Pass	
Sulphate (as SO4)	mg/L	< 2			2	Pass	
Total Dissolved Solids Dried at 180°C ± 2°C	mg/L	< 5			5	Pass	
Total Suspended Solids Dried at 103–105°C	mg/L	< 5			5	Pass	
Method Blank							
Alkalinity (speciated)							
Bicarbonate Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Carbonate Alkalinity (as CaCO3)	mg/L	< 10			10	Pass	
Hydroxide Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Total Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
Method Blank							
Alkali Metals							
Calcium	mg/L	< 0.5			0.5	Pass	
Magnesium	mg/L	< 0.5			0.5	Pass	
Potassium	mg/L	< 0.5			0.5	Pass	
Sodium	mg/L	< 0.5			0.5	Pass	
Method Blank							
TRH - 2013 NEPM Fractions (after silica gel clean-up)							
TRH >C10-C16 (after silica gel clean-up)	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34 (after silica gel clean-up)	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40 (after silica gel clean-up)	mg/L	< 0.1			0.1	Pass	
Method Blank							
TRH - 1999 NEPM Fractions (after silica gel clean-up)							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
TRH C10-C14 (after silica gel clean-up)	mg/L	< 0.05			0.05	Pass	
TRH C15-C28 (after silica gel clean-up)	mg/L	< 0.1			0.1	Pass	
TRH C29-C36 (after silica gel clean-up)	mg/L	< 0.1			0.1	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	104			70-130	Pass	
TRH C10-C14	%	119			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	101			70-130	Pass	
Toluene	%	99			70-130	Pass	
Ethylbenzene	%	97			70-130	Pass	
m&p-Xylenes	%	96			70-130	Pass	
o-Xylene	%	99			70-130	Pass	
Xylenes - Total*	%	97			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	111			70-130	Pass	
TRH C6-C10	%	106			70-130	Pass	
TRH >C10-C16	%	109			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	92			30-130	Pass	
2.4-Dichlorophenol	%	89			30-130	Pass	
2.4.5-Trichlorophenol	%	124			30-130	Pass	
2.4.6-Trichlorophenol	%	120			30-130	Pass	
2.6-Dichlorophenol	%	94			30-130	Pass	
4-Chloro-3-methylphenol	%	90			30-130	Pass	
Pentachlorophenol	%	95			30-130	Pass	
Tetrachlorophenols - Total	%	95			30-130	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	%	32			30-130	Pass	
2-Methyl-4.6-dinitrophenol	%	80			30-130	Pass	
2-Methylphenol (o-Cresol)	%	84			30-130	Pass	
2-Nitrophenol	%	73			30-130	Pass	
2.4-Dimethylphenol	%	122			30-130	Pass	
2.4-Dinitrophenol	%	76			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	%	85			30-130	Pass	
4-Nitrophenol	%	41			30-130	Pass	
Dinoseb	%	112			30-130	Pass	
Phenol	%	71			30-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons (Trace level)							
Acenaphthene	%	91			70-130	Pass	
Acenaphthylene	%	92			70-130	Pass	
Anthracene	%	83			70-130	Pass	
Benz(a)anthracene	%	79			70-130	Pass	
Benzo(a)pyrene	%	84			70-130	Pass	
Benzo(b&j)fluoranthene	%	80			70-130	Pass	
Benzo(g.h.i)perylene	%	94			70-130	Pass	
Benzo(k)fluoranthene	%	105			70-130	Pass	
Chrysene	%	99			70-130	Pass	
Dibenz(a.h)anthracene	%	89			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Fluoranthene	%	84			70-130	Pass	
Fluorene	%	90			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	90			70-130	Pass	
Naphthalene	%	81			70-130	Pass	
Phenanthrene	%	82			70-130	Pass	
Pyrene	%	85			70-130	Pass	
LCS - % Recovery							
Ammonia (as N)	%	82			70-130	Pass	
Chloride	%	98			70-130	Pass	
Cyanide (total)	%	105			70-130	Pass	
Ferrous Iron - Fe2+	%	99			70-130	Pass	
Sulphate (as SO4)	%	98			70-130	Pass	
Total Dissolved Solids Dried at 180°C ± 2°C	%	107			70-130	Pass	
Total Suspended Solids Dried at 103–105°C	%	89			70-130	Pass	
LCS - % Recovery							
Alkalinity (speciated)							
Carbonate Alkalinity (as CaCO3)	%	108			70-130	Pass	
Total Alkalinity (as CaCO3)	%	110			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	90			80-120	Pass	
Arsenic (filtered)	%	111			80-120	Pass	
Cadmium	%	95			80-120	Pass	
Cadmium (filtered)	%	108			80-120	Pass	
Chromium	%	91			80-120	Pass	
Chromium (filtered)	%	110			80-120	Pass	
Copper	%	87			80-120	Pass	
Copper (filtered)	%	109			80-120	Pass	
Lead	%	93			80-120	Pass	
Lead (filtered)	%	107			80-120	Pass	
Manganese (filtered)	%	110			80-120	Pass	
Mercury	%	99			80-120	Pass	
Mercury (filtered)	%	107			80-120	Pass	
Nickel	%	90			80-120	Pass	
Nickel (filtered)	%	110			80-120	Pass	
Zinc	%	86			80-120	Pass	
Zinc (filtered)	%	106			80-120	Pass	
LCS - % Recovery							
Alkali Metals							
Calcium	%	96			80-120	Pass	
Magnesium	%	97			80-120	Pass	
Potassium	%	95			80-120	Pass	
Sodium	%	102			80-120	Pass	
LCS - % Recovery							
TRH - 2013 NEPM Fractions (after silica gel clean-up)							
TRH >C10-C16 (after silica gel clean-up)	%	73			70-130	Pass	
LCS - % Recovery							
TRH - 1999 NEPM Fractions (after silica gel clean-up)							
TRH C10-C14 (after silica gel clean-up)	%	80			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons (Trace level)				Result 1					
Acenaphthene	S20-Jl25246	NCP	%	106			70-130	Pass	
Acenaphthylene	S20-Jl25246	NCP	%	102			70-130	Pass	
Anthracene	S20-Jl25246	NCP	%	88			70-130	Pass	
Benz(a)anthracene	S20-Jl25246	NCP	%	103			70-130	Pass	
Benzo(a)pyrene	S20-Jl25246	NCP	%	108			70-130	Pass	
Benzo(b&j)fluoranthene	S20-Jl25246	NCP	%	104			70-130	Pass	
Benzo(g.h.i)perylene	S20-Jl25246	NCP	%	122			70-130	Pass	
Benzo(k)fluoranthene	S20-Jl25246	NCP	%	93			70-130	Pass	
Chrysene	S20-Jl25246	NCP	%	129			70-130	Pass	
Dibenz(a.h)anthracene	S20-Jl25246	NCP	%	113			70-130	Pass	
Fluoranthene	S20-Jl25246	NCP	%	109			70-130	Pass	
Fluorene	S20-Jl25246	NCP	%	107			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S20-Jl25246	NCP	%	120			70-130	Pass	
Naphthalene	S20-Jl25246	NCP	%	87			70-130	Pass	
Phenanthrene	S20-Jl25246	NCP	%	104			70-130	Pass	
Pyrene	S20-Jl25246	NCP	%	109			70-130	Pass	
Spike - % Recovery									
				Result 1					
Ammonia (as N)	S20-Jl29870	CP	%	116			70-130	Pass	
Chloride	S20-Jl29870	CP	%	128			70-130	Pass	
Ferrous Iron - Fe2+	S20-Jl26109	NCP	%	81			70-130	Pass	
Sulphate (as SO4)	S20-Jl29870	CP	%	118			70-130	Pass	
Spike - % Recovery									
Alkalinity (speciated)				Result 1					
Carbonate Alkalinity (as CaCO3)	S20-My27345	NCP	%	75			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic (filtered)	S20-Jl29912	NCP	%	89			75-125	Pass	
Cadmium (filtered)	S20-Jl29912	NCP	%	86			75-125	Pass	
Chromium (filtered)	S20-Jl29912	NCP	%	86			75-125	Pass	
Copper (filtered)	S20-Jl29912	NCP	%	86			75-125	Pass	
Lead (filtered)	S20-Jl29912	NCP	%	79			75-125	Pass	
Manganese (filtered)	S20-Jl29912	NCP	%	81			75-125	Pass	
Mercury (filtered)	S20-Jl29912	NCP	%	87			75-125	Pass	
Nickel (filtered)	S20-Jl29912	NCP	%	87			75-125	Pass	
Zinc (filtered)	S20-Jl29912	NCP	%	82			75-125	Pass	
Spike - % Recovery									
Alkalinity (speciated)				Result 1					
Bicarbonate Alkalinity (as CaCO3)	M20-My31793	NCP	%	100			70-130	Pass	
Total Alkalinity (as CaCO3)	M20-My31783	NCP	%	112			70-130	Pass	
Spike - % Recovery									
				Result 1					
Cyanide (total)	S20-Jl29878	CP	%	118			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S20-Jl29882	CP	%	89			75-125	Pass	
Cadmium	S20-Jl29882	CP	%	92			75-125	Pass	
Chromium	S20-Jl29882	CP	%	91			75-125	Pass	
Copper	S20-Jl29882	CP	%	89			75-125	Pass	
Lead	S20-Jl29882	CP	%	93			75-125	Pass	
Mercury	S20-Jl29882	CP	%	99			75-125	Pass	
Nickel	S20-Jl29882	CP	%	92			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Zinc	S20-Jl29882	CP	%	88			75-125	Pass	
Spike - % Recovery									
Alkali Metals				Result 1					
Calcium	S20-Jl29882	CP	%	76			75-125	Pass	
Magnesium	S20-Jl29882	CP	%	97			75-125	Pass	
Potassium	S20-Jl29882	CP	%	98			75-125	Pass	
Sodium	S20-Jl29882	CP	%	95			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S20-Jl28831	NCP	%	95			75-125	Pass	
Cadmium	S20-Jl28831	NCP	%	93			75-125	Pass	
Chromium	S20-Jl28831	NCP	%	86			75-125	Pass	
Copper	S20-Jl28831	NCP	%	81			75-125	Pass	
Lead	S20-Jl28831	NCP	%	87			75-125	Pass	
Mercury	S20-Jl28831	NCP	%	83			75-125	Pass	
Nickel	S20-Jl28831	NCP	%	83			75-125	Pass	
Zinc	S20-Jl28831	NCP	%	79			75-125	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	M20-Jl38658	NCP	%	104			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	M20-Jl38658	NCP	%	101			70-130	Pass	
Spike - % Recovery									
Phenols (Halogenated)				Result 1					
2-Chlorophenol	S20-Jl25246	NCP	%	78			30-130	Pass	
2.4-Dichlorophenol	S20-Jl25246	NCP	%	85			30-130	Pass	
2.4.5-Trichlorophenol	S20-Jl25246	NCP	%	123			30-130	Pass	
2.4.6-Trichlorophenol	S20-Jl25246	NCP	%	112			30-130	Pass	
2.6-Dichlorophenol	S20-Jl25246	NCP	%	87			30-130	Pass	
4-Chloro-3-methylphenol	S20-Jl25246	NCP	%	92			30-130	Pass	
Pentachlorophenol	S20-Jl25246	NCP	%	103			30-130	Pass	
Tetrachlorophenols - Total	S20-Jl25246	NCP	%	79			30-130	Pass	
Spike - % Recovery									
Phenols (non-Halogenated)				Result 1					
2-Methyl-4.6-dinitrophenol	S20-Jl25246	NCP	%	82			30-130	Pass	
2-Methylphenol (o-Cresol)	S20-Jl25246	NCP	%	75			30-130	Pass	
2-Nitrophenol	S20-Jl25246	NCP	%	71			30-130	Pass	
2.4-Dimethylphenol	S20-Jl25246	NCP	%	92			30-130	Pass	
2.4-Dinitrophenol	S20-Jl17265	NCP	%	58			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	S20-Jl25246	NCP	%	77			30-130	Pass	
4-Nitrophenol	S20-Jl25246	NCP	%	70			30-130	Pass	
Dinoseb	S20-Jl25246	NCP	%	105			30-130	Pass	
Phenol	S20-Jl25246	NCP	%	62			30-130	Pass	
Spike - % Recovery									
				Result 1					
Cyanide (total)	S20-Jl29887	CP	%	125			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Polycyclic Aromatic Hydrocarbons (Trace level)				Result 1	Result 2	RPD			
Acenaphthene	S20-Jl25245	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Acenaphthylene	S20-Jl25245	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Anthracene	S20-Jl25245	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Benz(a)anthracene	S20-Jl25245	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Polycyclic Aromatic Hydrocarbons (Trace level)				Result 1	Result 2	RPD			
Benzo(a)pyrene	S20-Jl25245	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Benzo(b&j)fluoranthene	S20-Jl25245	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Benzo(g.h.i)perylene	S20-Jl25245	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Benzo(k)fluoranthene	S20-Jl25245	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Chrysene	S20-Jl25245	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Dibenz(a.h)anthracene	S20-Jl25245	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Fluoranthene	S20-Jl25245	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Fluorene	S20-Jl25245	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S20-Jl25245	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Naphthalene	S20-Jl25245	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Phenanthrene	S20-Jl25245	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Pyrene	S20-Jl25245	NCP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Ammonia (as N)	S20-Jl29870	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Chloride	S20-Jl29870	CP	mg/L	160	180	11	30%	Pass	
Sulphate (as SO4)	S20-Jl29870	CP	mg/L	32	37	15	30%	Pass	
Total Dissolved Solids Dried at 180°C ± 2°C	S20-Jl29870	CP	mg/L	1000	1100	8.0	30%	Pass	
Duplicate									
Alkalinity (speciated)				Result 1	Result 2	RPD			
Bicarbonate Alkalinity (as CaCO3)	M20-Jl34239	NCP	mg/L	960	990	3.0	30%	Pass	
Carbonate Alkalinity (as CaCO3)	M20-Jl34239	NCP	mg/L	< 10	< 10	<1	30%	Pass	
Hydroxide Alkalinity (as CaCO3)	M20-Jl34239	NCP	mg/L	< 20	< 20	<1	30%	Pass	
Total Alkalinity (as CaCO3)	M20-Jl34239	NCP	mg/L	960	990	3.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S20-Jl29870	CP	mg/L	0.010	0.011	4.0	30%	Pass	
Cadmium	S20-Jl29870	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S20-Jl29870	CP	mg/L	0.047	0.046	1.0	30%	Pass	
Copper	S20-Jl29870	CP	mg/L	0.035	0.034	1.0	30%	Pass	
Lead	S20-Jl29870	CP	mg/L	0.047	0.048	4.0	30%	Pass	
Mercury	S20-Jl29870	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S20-Jl29870	CP	mg/L	0.043	0.044	2.0	30%	Pass	
Zinc	S20-Jl29870	CP	mg/L	0.098	0.097	1.0	30%	Pass	
Duplicate									
Alkali Metals				Result 1	Result 2	RPD			
Calcium	S20-Jl29870	CP	mg/L	38	39	4.0	30%	Pass	
Magnesium	S20-Jl29870	CP	mg/L	37	37	1.0	30%	Pass	
Potassium	S20-Jl29870	CP	mg/L	7.4	7.3	1.0	30%	Pass	
Sodium	S20-Jl29870	CP	mg/L	110	120	4.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic (filtered)	S20-Jl29874	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium (filtered)	S20-Jl29874	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium (filtered)	S20-Jl29874	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	S20-Jl29874	CP	mg/L	0.002	0.002	10	30%	Pass	
Lead (filtered)	S20-Jl29874	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese (filtered)	S20-Jl29874	CP	mg/L	0.80	0.86	7.0	30%	Pass	
Mercury (filtered)	S20-Jl29874	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel (filtered)	S20-Jl29874	CP	mg/L	0.007	0.008	6.0	30%	Pass	
Zinc (filtered)	S20-Jl29874	CP	mg/L	0.025	0.028	8.0	30%	Pass	

Duplicate									
				Result 1	Result 2	RPD			
Total Suspended Solids Dried at 103–105°C	S20-Jl29876	CP	mg/L	6.2	10	47	30%	Fail	Q15
Duplicate									
				Result 1	Result 2	RPD			
Cyanide (total)	S20-Jl29878	CP	mg/L	< 0.004	< 0.004	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Total Dissolved Solids Dried at 180°C ± 2°C	S20-Jl29879	CP	mg/L	840	890	6.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S20-Jl29884	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S20-Jl29884	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S20-Jl29884	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	S20-Jl29884	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead	S20-Jl29884	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury	S20-Jl29884	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S20-Jl29884	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	S20-Jl29884	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
Alkali Metals				Result 1	Result 2	RPD			
Calcium	S20-Jl29884	CP	mg/L	< 0.5	< 0.5	<1	30%	Pass	
Magnesium	S20-Jl29884	CP	mg/L	< 0.5	< 0.5	<1	30%	Pass	
Potassium	S20-Jl29884	CP	mg/L	< 0.5	< 0.5	<1	30%	Pass	
Sodium	S20-Jl29884	CP	mg/L	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S20-Jl29885	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S20-Jl29885	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S20-Jl29885	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S20-Jl29885	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S20-Jl29885	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S20-Jl29885	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total*	S20-Jl29885	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S20-Jl29885	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	S20-Jl29885	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	M20-Jl38657	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	M20-Jl38657	NCP	mg/L	0.2	0.1	22	30%	Pass	
TRH C29-C36	M20-Jl38657	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	M20-Jl38657	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	M20-Jl38657	NCP	mg/L	0.2	0.2	16	30%	Pass	
TRH >C34-C40	M20-Jl38657	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	

Duplicate									
Phenols (Halogenated)				Result 1	Result 2	RPD			
2-Chlorophenol	S20-Jl26109	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.4-Dichlorophenol	S20-Jl26109	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.4.5-Trichlorophenol	S20-Jl26109	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.4.6-Trichlorophenol	S20-Jl26109	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.6-Dichlorophenol	S20-Jl26109	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
4-Chloro-3-methylphenol	S20-Jl26109	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Pentachlorophenol	S20-Jl26109	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Tetrachlorophenols - Total	S20-Jl26109	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
Duplicate									
Phenols (non-Halogenated)				Result 1	Result 2	RPD			
2-Cyclohexyl-4.6-dinitrophenol	S20-Jl26109	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
2-Methyl-4.6-dinitrophenol	S20-Jl26109	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
2-Methylphenol (o-Cresol)	S20-Jl26109	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2-Nitrophenol	S20-Jl26109	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.4-Dimethylphenol	S20-Jl26109	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.4-Dinitrophenol	S20-Jl26109	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	S20-Jl26109	NCP	mg/L	< 0.006	< 0.006	<1	30%	Pass	
4-Nitrophenol	S20-Jl26109	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
Dinoseb	S20-Jl26109	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Phenol	S20-Jl26109	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Cyanide (total)	S20-Jl29887	CP	mg/L	< 0.004	< 0.004	<1	30%	Pass	
Ferrous Iron - Fe2+	S20-Jl29887	CP	mg/L	< 0.5	< 0.5	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.
R16	The LORs have been raised due to the high concentration of one or more analytes

Authorised By

Alena Bounkeua	Analytical Services Manager
Andrew Sullivan	Senior Analyst-Organic (NSW)
Gabriele Cordero	Senior Analyst-Inorganic (NSW)
Gabriele Cordero	Senior Analyst-Metal (NSW)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)
Scott Beddoes	Senior Analyst-Inorganic (VIC)



Glenn Jackson

General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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☑ **Sydney**
Unit F3 - 6 Building F, 16 Mars Road, Lane Cove
Phone: +612 9900 8400
Email: enviro.syd@mgtlabmark.com.au

☐ **Brisbane**
Unit 1-21 Smallwood Place, Murrarie
Phone: +617 3902 4600
Email: enviro.bris@mgtlabmark.com.au

☐ **Melbourne**
2 Kingston Town Close, Oakleigh, VIC 3166
Phone: +613 8564 5000 Fax: +613 8564 5090
Email: enquiries.melb@mgtlabmark.com.au

CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name : GHD Pty Ltd, Sydney	**Contact Name :** Terry Nham	**Purchase Order :** 2127234	**COC Number :**
Office Address : Level 15, 133 Castlereagh Street, Sydney NSW 2000	**Project Manager :** Henry Luo	**PROJECT Number :** 21-27234	**Eurofins | mgt quote ID :** GHD Rates 2020
	Email for results : terry.nham@ghd.com henry.luo@ghd.com	**PROJECT Name :** Central	**Data output format:** ESDAT

Special Directions & Comments :

Eurofins | mgt DI water batch number:

	Sample ID	Date	Matrix	TRH, BTEXN, 8 Metals (Dissolved) (Suite B6)	PAH - Trace LOR	Phenols	TRH (with Silica Gel Cleanup)	Cyanide - Trace Level (<0.004 mg/L)	Ammonia	Major Anions and Cations	Ferrous Iron	Manganese	pH	TDS	TSS	TRH C6-C10 / BTEX	8 Metals (Total)
1	CSM_BH02	18/8/20	Water	X	X	X	X	X	X	X	X	X	X	X	X		
2	CSM_BH04	17/8/20	Water	X	X	X	X	X	X	X	X	X	X	X	X		
3	CSM_BH06	18/8/20	Water	X	X	X	X	X	X	X	X	X	X	X	X		
4	CSM_BH08	19/8/20	Water	X	X	X	X	X	X	X	X	X	X	X	X		
5	CSM_BH09S	19/8/20	Water	X	X	X	X	X	X	X	X	X	X	X	X		
6	CSM_BH10S	17/8/20	Water	X	X	X	X	X	X	X	X	X	X	X	X		
7	SRT_BH047	19/8/20	Water	X	X	X	X	X	X	X	X	X	X	X	X		
8	SRT_BH050	19/8/20	Water	X	X	X	X	X	X	[illegible]	X	X	[illegible]				
9	SRT_BH052	19/8/20	Water	X	X	X	X	X	X	X	X	X	X	X	X		
~~10~~	~~GASW_BH7~~		~~Water~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~		
11	GASW_BH10	17/8/20	Water	X	X	X	X	X	X	X	X	X	X	X	X		
12	GASW_BH11	17/8/20	Water	X	X	X	X	X	X	X	X	X	X	X	X		
13	GASW_BH23	17/8/20	Water	X	X	X	X	X	X	X	X	X	X	X	X		
14	GASW_BH25a	17/8/20	Water	X	X	X	X	X	X	X	X	X	X	X	X		
~~15~~	~~QC01~~		~~Water~~	~~PLEASE SEND TO ALS WITH ATTACHED COC~~													
16	QC02	18/8/20	Water	X	X												

Analytes

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

500P	250P	60P	1LA	40mL vial	200mL A	Jar	Bag
1		4		2	2		
1		4		2	2		
1		4		2	2		
1		4		2	2		
1		4		2	2		
1		4		2	2		
1		4		2	2		
[illegible]		4		2	2		
1		4		2	2		
~~1~~		~~4~~		~~2~~	~~2~~		
1		4		2	2		
1		4		2	2		
1		4		2	2		
1		4		2	2		
~~1~~		~~4~~		~~2~~	~~2~~		
1		4		2	2		

Sample comments:

Relinquished By: Terry Nham - GHD
Date & Time : 19/8/2020
Signature:

Laboratory Staff
Received By:
Date & Time : 19/8/2020 3:45PM
Signature:

Turn around time
1 DAY ☐ 2 DAY ☐ 3 DAY ☐
5 DAY ☒ 10 DAY ☐ Other:

Method Of Shipment
☐ Courier
☒ Hand Delivered
☐ Postal
Courier Consignment # :

Temperature on arrival: 3.86°C

Report number: 738860

eurofins | mgt

☑ **Sydney**
Unit F3 - 6 Building F, 16 Mars Road, Lane Cove
Phone: +612 9900 8400
Email: enviro.syd@mgtlabmark.com.au

☐ **Brisbane**
Unit 1-21 Smallwood Place, Murrarie
Phone: +617 3902 4600
Email: enviro.bris@mgtlabmark.com.au

☐ **Melbourne**
2 Kingston Town Close, Oakleigh, VIC 3166
Phone: +613 8564 5000 Fax: +613 8564 5090
Email: enquiries.melb@mgtlabmark.com.au

CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name : GHD Pty Ltd, Sydney	**Contact Name :** Terry Nham	**Purchase Order :** 2127234	**COC Number :**
Office Address : Level 15, 133 Castlereagh Street, Sydney NSW 2000	**Project Manager :** Henry Luo	**PROJECT Number :** 21-27234	**Eurofins | mgt quote ID :** GHD Rates 2020
	Email for results : terry.nham@ghd.com henry.luo@ghd.com	**PROJECT Name :** Central	**Data output format:** ESDAT

Special Directions & Comments :

Eurofins | mgt DI water batch number:

Analytes

	Sample ID	Date	Matrix	TRH, BTEXN, 8 Metals (Dissolved) (Suite B6)	PAH - Trace LOR	Phenols		TRH (with Silica Gel Cleanup)	Cyanide - Trace Level (<0.004 mg/L)	Ammonia	Major Anions and Cations		Ferrous Iron	Manganese	pH	TDS	TSS		TRH C6-C10 / BTEX	8 Metals (Total)					
1	RB01	17/8/20	Water																	X					
2	Trip Blank	17/8/20	Water																X						
3	Trip Spike	17/8/20	Water																X						
4	SRT_BH059	15/8/20	Water	X	X	X		X	X	X	X		X	X	X	X	X								
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									
13																									
14																									
15																									
16																									

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

500P	250P	60P	1LA	40mL vial	200mL A	Jar	Bag	Sample comments:
		1						
				2				
				2				
1		4		2	2			

Laboratory Staff

Relinquished By: Terry Nham - GHD
Date & Time : 19/8/2020
Signature:

Received By:
Date & Time : 19/8/2020 3:42PM
Signature:

Turn around time

1 DAY ☐ 2 DAY ☐ 3 DAY ☐
5 DAY ☑ 10 DAY ☐ Other:

Method Of Shipment

☐ Courier
☒ Hand Delivered
☐ Postal
Courier Consignment # :

Temperature on arrival: 3.8°C

Report number: 738860

eurofins | Environment Testing

ABN: 50 005 085 521 www.eurofins.com.au EnviroSales@eurofins.com

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Sample Receipt Advice

Company name:	GHD Pty Ltd NSW
Contact name:	Henry Luo
Project name:	CENTRAL
Project ID:	21-27234
Turnaround time:	5 Day
Date/Time received	Aug 19, 2020 3:42 PM
Eurofins reference	738860

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	Sample Temperature of a random sample selected from the batch as recorded by Eurofins Sample Receipt : 3.9 degrees Celsius.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Alena Bounkeua on phone : or by email: AlenaBounkeua@eurofins.com

Results will be delivered electronically via email to Henry Luo - henry.luo@ghd.com.

Note: A copy of these results will also be delivered to the general GHD Pty Ltd NSW email address.

eurofins | Environment Testing

ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
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Site # 23736

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PO Box 60 Wickham 2293
Phone : +61 2 4968 8448

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: GHD Pty Ltd NSW
Address: Level 15, 133 Castlereagh Street
Sydney
NSW 2000

Project Name: CENTRAL
Project ID: 21-27234

Order No.: 2127234
Report #: 738860
Phone: 02 9239 7100
Fax: 02 9239 7199

Received: Aug 19, 2020 3:42 PM
Due: Aug 26, 2020
Priority: 5 Day
Contact Name: Henry Luo

Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail						Cyanide (total)	Ferrous Iron - Fe2+	Manganese (filtered)	pH (at 25 °C)	Total Suspended Solids Dried at 103–105°C	Metals M8	Phenols (IWRG 621)	Major Anions	Major Cations	TRH (after Silica Gel cleanup)	Eurofins Suite B6 (filtered metals)	BTEXN and Volatile TRH	BTEXN and Volatile TRH	Polycyclic Aromatic Hydrocarbons (Trace level)	Total Dissolved Solids Dried at 180°C ± 2°C
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217																				
Brisbane Laboratory - NATA Site # 20794																				
Perth Laboratory - NATA Site # 23736																				
Newcastle Laboratory																				
External Laboratory																				
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**															
1	CSM_BH02	Aug 18, 2020		Water	S20-Au29620	X	X	X	X	X		X	X	X	X	X			X	X
2	CSM_BH04	Aug 17, 2020		Water	S20-Au29621	X	X	X	X	X		X	X	X	X	X			X	X
3	CSM_BH06	Aug 18, 2020		Water	S20-Au29622	X	X	X	X	X		X	X	X	X	X			X	X
4	CSM_BH08	Aug 19, 2020		Water	S20-Au29623	X	X	X	X	X		X	X	X	X	X			X	X
5	CSM_BH09S	Aug 18, 2020		Water	S20-Au29624	X	X	X	X	X		X	X	X	X	X			X	X
6	CSM_BH10S	Aug 17, 2020		Water	S20-Au29625	X	X	X	X	X		X	X	X	X	X			X	X
7	CSM_BH047	Aug 19, 2020		Water	S20-Au29626	X	X	X	X	X		X	X	X	X	X			X	X
8	CSM_BH050	Aug 19, 2020		Water	S20-Au29627	X	X	X				X			X	X			X	
9	CSM_BH052	Aug 19, 2020		Water	S20-Au29628	X	X	X	X	X		X	X	X	X	X			X	X

eurofins | Environment Testing

ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

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Company Name: GHD Pty Ltd NSW
Address: Level 15, 133 Castlereagh Street
Sydney
NSW 2000

Project Name: CENTRAL
Project ID: 21-27234

Order No.: 2127234
Report #: 738860
Phone: 02 9239 7100
Fax: 02 9239 7199

Received: Aug 19, 2020 3:42 PM
Due: Aug 26, 2020
Priority: 5 Day
Contact Name: Henry Luo

Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail						Cyanide (total)	Ferrous Iron - Fe2+	Manganese (filtered)	pH (at 25 °C)	Total Suspended Solids Dried at 103–105°C	Metals M8	Phenols (IWRG 621)	Major Anions	Major Cations	TRH (after Silica Gel cleanup)	Eurofins Suite B6 (filtered metals)	BTEXN and Volatile TRH	BTEXN and Volatile TRH	Polycyclic Aromatic Hydrocarbons (Trace level)	Total Dissolved Solids Dried at 180°C ± 2°C
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217																				
Brisbane Laboratory - NATA Site # 20794																				
Perth Laboratory - NATA Site # 23736																				
10	GASW_BH10	Aug 17, 2020		Water	S20-Au29629	X	X	X	X	X		X	X	X	X	X			X	X
11	GASW_BH11	Aug 17, 2020		Water	S20-Au29630	X	X	X	X	X		X	X	X	X	X			X	X
12	GASW_BH23	Aug 17, 2020		Water	S20-Au29631	X	X	X	X	X		X	X	X	X	X			X	X
13	GASW_BH25A	Aug 17, 2020		Water	S20-Au29632	X	X	X	X	X		X	X	X	X	X			X	X
14	QC02	Aug 18, 2020		Water	S20-Au29633											X			X	
15	RB01	Aug 17, 2020		Water	S20-Au29634						X									
16	TRIP BLANK	Aug 17, 2020		Water	S20-Au29635												X			
17	TRIP SPIKE	Aug 17, 2020		Water	S20-Au29636													X		
18	SRT_BH059	Aug 18, 2020		Water	S20-Au29637	X	X	X	X	X		X	X	X	X	X			X	X
Test Counts						14	14	14	13	13	1	14	13	13	14	15	1	1	15	13

GHD Pty Ltd NSW
Level 15, 133 Castlereagh Street
Sydney
NSW 2000

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Attention: **Henry Luo**

Report **738860-W**
Project name CENTRAL
Project ID 21-27234
Received Date Aug 19, 2020

Client Sample ID			**CSM_BH02**	**CSM_BH04**	**CSM_BH06**	**CSM_BH08**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**S20-Au29620**	**S20-Au29621**	**S20-Au29622**	**S20-Au29623**
Date Sampled			**Aug 18, 2020**	**Aug 17, 2020**	**Aug 18, 2020**	**Aug 19, 2020**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	< 0.05	0.05
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	86	85	85	86
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	< 0.05	0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	< 0.05	< 0.05	0.05
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenols (Halogenated)						
2-Chlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.6-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachlorophenols - Total	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Total Halogenated Phenol*	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01

Client Sample ID			CSM_BH02	CSM_BH04	CSM_BH06	CSM_BH08
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Au29620	S20-Au29621	S20-Au29622	S20-Au29623
Date Sampled			Aug 18, 2020	Aug 17, 2020	Aug 18, 2020	Aug 19, 2020
Test/Reference	LOR	Unit				
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2-Nitrophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4-Dimethylphenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006	< 0.006	< 0.006	< 0.006
4-Nitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Dinoseb	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
Total Non-Halogenated Phenol*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol-d6 (surr.)	1	%	30	44	47	58
TRH - 2013 NEPM Fractions (after silica gel clean-up)						
TRH >C10-C16 (after silica gel clean-up)	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C16-C34 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C34-C40 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH - 1999 NEPM Fractions (after silica gel clean-up)						
TRH C10-C36 (Total) (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C10-C14 (after silica gel clean-up)	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH C15-C28 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C29-C36 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Polycyclic Aromatic Hydrocarbons (Trace level)						
Acenaphthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Acenaphthylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benz(a)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(a)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(b&j)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(g.h.i)perylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(k)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Chrysene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Dibenz(a.h)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Fluorene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Indeno(1.2.3-cd)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Naphthalene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Phenanthrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Total PAH*	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
2-Fluorobiphenyl (surr.)	1	%	58	66	87	80
p-Terphenyl-d14 (surr.)	1	%	52	72	76	71
Ammonia (as N)	0.01	mg/L	< 0.01	< 0.01	0.02	0.02
Chloride	1	mg/L	47	71	200	84
Cyanide (total)	0.004	mg/L	< 0.004	< 0.004	< 0.004	< 0.004
Ferrous Iron - Fe2+	0.05	mg/L	0.09	3.0	7.3	4.7
Nitrate (as N)	0.02	mg/L	0.03	0.02	< 0.02	0.35
pH (at 25 °C)	0.1	pH Units	6.9	6.5	6.6	6.7
Sulphate (as SO4)	5	mg/L	37	40	21	46

Client Sample ID			CSM_BH02	CSM_BH04	CSM_BH06	CSM_BH08
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Au29620	S20-Au29621	S20-Au29622	S20-Au29623
Date Sampled			Aug 18, 2020	Aug 17, 2020	Aug 18, 2020	Aug 19, 2020
Test/Reference	LOR	Unit				
Total Dissolved Solids Dried at 180°C ± 2°C	10	mg/L	350	260	490	290
Total Suspended Solids Dried at 103–105°C	1	mg/L	980	940	97	6.7
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	240	110	120	120
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10	< 10	< 10	< 10
Alkali Metals						
Calcium	0.5	mg/L	26	6.3	20	9.4
Magnesium	0.5	mg/L	19	13	23	12
Potassium	0.5	mg/L	< 5	< 5	< 5	< 5
Sodium	0.5	mg/L	53	51	89	61
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	0.002	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.006	0.001	0.005	0.005
Lead (filtered)	0.001	mg/L	0.002	< 0.001	< 0.001	< 0.001
Manganese (filtered)	0.005	mg/L	0.13	0.51	0.38	0.31
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.013	0.048	0.015	0.004
Zinc (filtered)	0.005	mg/L	0.046	0.039	0.056	0.015

Client Sample ID			CSM_BH09S	CSM_BH10S	CSM_BH047	CSM_BH050
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Au29624	S20-Au29625	S20-Au29626	S20-Au29627
Date Sampled			Aug 18, 2020	Aug 17, 2020	Aug 19, 2020	Aug 19, 2020
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	0.05	0.05	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	83	83	87	88
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID			CSM_BH09S	CSM_BH10S	CSM_BH047	CSM_BH050
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Au29624	S20-Au29625	S20-Au29626	S20-Au29627
Date Sampled			Aug 18, 2020	Aug 17, 2020	Aug 19, 2020	Aug 19, 2020
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenols (Halogenated)						
2-Chlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.6-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachlorophenols - Total	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Total Halogenated Phenol*	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2-Nitrophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4-Dimethylphenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006	< 0.006	< 0.006	< 0.006
4-Nitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Dinoseb	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
Total Non-Halogenated Phenol*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol-d6 (surr.)	1	%	71	60	46	46
TRH - 2013 NEPM Fractions (after silica gel clean-up)						
TRH >C10-C16 (after silica gel clean-up)	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C16-C34 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C34-C40 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH - 1999 NEPM Fractions (after silica gel clean-up)						
TRH C10-C36 (Total) (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C10-C14 (after silica gel clean-up)	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH C15-C28 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C29-C36 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Polycyclic Aromatic Hydrocarbons (Trace level)						
Acenaphthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Acenaphthylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benz(a)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(a)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(b&j)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(g.h.i)perylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(k)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Chrysene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Dibenz(a.h)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Fluorene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Indeno(1.2.3-cd)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Naphthalene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001

Client Sample ID			CSM_BH09S	CSM_BH10S	CSM_BH047	CSM_BH050
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Au29624	S20-Au29625	S20-Au29626	S20-Au29627
Date Sampled			Aug 18, 2020	Aug 17, 2020	Aug 19, 2020	Aug 19, 2020
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons (Trace level)						
Phenanthrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Total PAH*	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
2-Fluorobiphenyl (surr.)	1	%	97	58	72	80
p-Terphenyl-d14 (surr.)	1	%	72	80	60	94
Ammonia (as N)	0.01	mg/L	0.03	< 0.01	< 0.01	-
Chloride	1	mg/L	52	23	22	-
Cyanide (total)	0.004	mg/L	< 0.004	< 0.004	< 0.004	< 0.004
Ferrous Iron - Fe2+	0.05	mg/L	6.6	< 0.05	< 0.05	< 0.05
Nitrate (as N)	0.02	mg/L	< 0.02	2.1	18	-
pH (at 25 °C)	0.1	pH Units	6.4	6.1	7.6	-
Sulphate (as SO4)	5	mg/L	140	62	11	-
Total Dissolved Solids Dried at 180°C ± 2°C	10	mg/L	360	180	290	-
Total Suspended Solids Dried at 103–105°C	1	mg/L	57	920	33	-
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	59	40	120	-
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10	< 10	< 10	-
Alkali Metals						
Calcium	0.5	mg/L	< 5	6.5	35	-
Magnesium	0.5	mg/L	6.1	5.5	8.0	-
Potassium	0.5	mg/L	< 5	< 5	< 5	-
Sodium	0.5	mg/L	83	27	22	-
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.002	0.011	0.001	0.009
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Manganese (filtered)	0.005	mg/L	1.2	0.60	< 0.005	0.025
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.011	0.003	0.004	0.002
Zinc (filtered)	0.005	mg/L	0.051	0.009	0.020	0.013

Client Sample ID			CSM_BH052	GASW_BH10	GASW_BH11	GASW_BH23
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Au29628	S20-Au29629	S20-Au29630	S20-Au29631
Date Sampled			Aug 19, 2020	Aug 17, 2020	Aug 17, 2020	Aug 17, 2020
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	0.24
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID			CSM_BH052	GASW_BH10	GASW_BH11	GASW_BH23
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Au29628	S20-Au29629	S20-Au29630	S20-Au29631
Date Sampled			Aug 19, 2020	Aug 17, 2020	Aug 17, 2020	Aug 17, 2020
Test/Reference	LOR	Unit				
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	0.13
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	0.007
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	0.004
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	0.004
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	0.002
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	< 0.003	0.007
4-Bromofluorobenzene (surr.)	1	%	86	91	90	91
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	0.24
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02	0.09
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenols (Halogenated)						
2-Chlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.6-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachlorophenols - Total	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Total Halogenated Phenol*	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2-Nitrophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4-Dimethylphenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006	< 0.006	0.058	< 0.006
4-Nitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Dinoseb	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
Total Non-Halogenated Phenol*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol-d6 (surr.)	1	%	51	52	44	46
TRH - 2013 NEPM Fractions (after silica gel clean-up)						
TRH >C10-C16 (after silica gel clean-up)	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C16-C34 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C34-C40 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH - 1999 NEPM Fractions (after silica gel clean-up)						
TRH C10-C36 (Total) (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C10-C14 (after silica gel clean-up)	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH C15-C28 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C29-C36 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID			CSM_BH052	GASW_BH10	GASW_BH11	GASW_BH23
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Au29628	S20-Au29629	S20-Au29630	S20-Au29631
Date Sampled			Aug 19, 2020	Aug 17, 2020	Aug 17, 2020	Aug 17, 2020
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons (Trace level)						
Acenaphthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Acenaphthylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benz(a)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(a)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(b&j)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(g.h.i)perylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(k)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Chrysene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Dibenz(a.h)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Fluorene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Indeno(1.2.3-cd)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Naphthalene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Phenanthrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Total PAH*	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
2-Fluorobiphenyl (surr.)	1	%	51	74	73	80
p-Terphenyl-d14 (surr.)	1	%	83	76	81	94
Ammonia (as N)	0.01	mg/L	< 0.01	< 0.01	0.06	0.07
Chloride	1	mg/L	38	180	27	15
Cyanide (total)	0.004	mg/L	< 0.004	< 0.004	< 0.004	0.010
Ferrous Iron - Fe2+	0.05	mg/L	< 0.05	7.6	0.61	4.6
Nitrate (as N)	0.02	mg/L	10	< 0.02	0.03	< 0.02
pH (at 25 °C)	0.1	pH Units	6.4	7.0	6.9	7.4
Sulphate (as SO4)	5	mg/L	18	< 5	25	79
Total Dissolved Solids Dried at 180°C ± 2°C	10	mg/L	200	880	220	390
Total Suspended Solids Dried at 103–105°C	1	mg/L	99	430	3900	1100
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	37	650	170	340
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10	< 10	< 10	< 10
Alkali Metals						
Calcium	0.5	mg/L	9.7	78	14	80
Magnesium	0.5	mg/L	< 5	51	< 5	6.2
Potassium	0.5	mg/L	< 5	9.1	< 5	12
Sodium	0.5	mg/L	32	110	27	23
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	0.003
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.12	0.002	0.015	0.005
Lead (filtered)	0.001	mg/L	0.002	< 0.001	< 0.001	< 0.001
Manganese (filtered)	0.005	mg/L	0.012	0.25	0.21	0.24
Mercury (filtered)	0.0001	mg/L	< 0.0001	0.0004	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.011	0.031	0.005	0.007
Zinc (filtered)	0.005	mg/L	0.10	0.020	0.059	0.009

Client Sample ID			GASW_BH25A	QC02	RB01	TRIP BLANK
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Au29632	S20-Au29633	S20-Au29634	S20-Au29635
Date Sampled			Aug 17, 2020	Aug 18, 2020	Aug 17, 2020	Aug 17, 2020
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	17	< 0.02	-	< 0.02
TRH C10-C14	0.05	mg/L	0.25	< 0.05	-	-
TRH C15-C28	0.1	mg/L	0.1	< 0.1	-	-
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	-	-
TRH C10-C36 (Total)	0.1	mg/L	0.35	< 0.1	-	-
BTEX						
Benzene	0.001	mg/L	7.1	< 0.001	-	< 0.001
Toluene	0.001	mg/L	4.5	< 0.001	-	< 0.001
Ethylbenzene	0.001	mg/L	0.22	< 0.001	-	< 0.001
m&p-Xylenes	0.002	mg/L	0.59	< 0.002	-	< 0.002
o-Xylene	0.001	mg/L	0.30	< 0.001	-	< 0.001
Xylenes - Total*	0.003	mg/L	0.89	< 0.003	-	< 0.003
4-Bromofluorobenzene (surr.)	1	%	89	88	-	79
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	< 1	< 0.01	-	< 0.01
TRH C6-C10	0.02	mg/L	17	< 0.02	-	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	4.3	< 0.02	-	< 0.02
TRH >C10-C16	0.05	mg/L	0.22	< 0.05	-	-
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 1	< 0.05	-	-
TRH >C16-C34	0.1	mg/L	0.1	< 0.1	-	-
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	-	-
TRH >C10-C40 (total)*	0.1	mg/L	0.32	< 0.1	-	-
Phenols (Halogenated)						
2-Chlorophenol	0.003	mg/L	< 0.003	-	-	-
2.4-Dichlorophenol	0.003	mg/L	< 0.003	-	-	-
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01	-	-	-
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	-	-	-
2.6-Dichlorophenol	0.003	mg/L	< 0.003	-	-	-
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	-	-	-
Pentachlorophenol	0.01	mg/L	< 0.01	-	-	-
Tetrachlorophenols - Total	0.03	mg/L	< 0.03	-	-	-
Total Halogenated Phenol*	0.01	mg/L	< 0.01	-	-	-
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	< 0.1	-	-	-
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03	-	-	-
2-Methylphenol (o-Cresol)	0.003	mg/L	0.025	-	-	-
2-Nitrophenol	0.01	mg/L	< 0.01	-	-	-
2.4-Dimethylphenol	0.003	mg/L	0.025	-	-	-
2.4-Dinitrophenol	0.03	mg/L	< 0.03	-	-	-
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	0.016	-	-	-
4-Nitrophenol	0.03	mg/L	< 0.03	-	-	-
Dinoseb	0.1	mg/L	< 0.1	-	-	-
Phenol	0.003	mg/L	0.035	-	-	-
Total Non-Halogenated Phenol*	0.1	mg/L	0.101	-	-	-
Phenol-d6 (surr.)	1	%	52	-	-	-
TRH - 2013 NEPM Fractions (after silica gel clean-up)						
TRH >C10-C16 (after silica gel clean-up)	0.05	mg/L	< 0.05	-	-	-
TRH >C16-C34 (after silica gel clean-up)	0.1	mg/L	< 0.1	-	-	-
TRH >C34-C40 (after silica gel clean-up)	0.1	mg/L	< 0.1	-	-	-

Client Sample ID			GASW_BH25A	QC02	RB01	TRIP BLANK
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Au29632	S20-Au29633	S20-Au29634	S20-Au29635
Date Sampled			Aug 17, 2020	Aug 18, 2020	Aug 17, 2020	Aug 17, 2020
Test/Reference	LOR	Unit				
TRH - 1999 NEPM Fractions (after silica gel clean-up)						
TRH C10-C36 (Total) (after silica gel clean-up)	0.1	mg/L	< 0.1	-	-	-
TRH C10-C14 (after silica gel clean-up)	0.05	mg/L	< 0.05	-	-	-
TRH C15-C28 (after silica gel clean-up)	0.1	mg/L	< 0.1	-	-	-
TRH C29-C36 (after silica gel clean-up)	0.1	mg/L	< 0.1	-	-	-
Polycyclic Aromatic Hydrocarbons (Trace level)						
Acenaphthene	0.00001	mg/L	0.00030	< 0.00001	-	-
Acenaphthylene	0.00001	mg/L	0.00031	< 0.00001	-	-
Anthracene	0.00001	mg/L	0.00044	< 0.00001	-	-
Benz(a)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	-	-
Benzo(a)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	-	-
Benzo(b&j)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	-	-
Benzo(g.h.i)perylene	0.00001	mg/L	< 0.00001	< 0.00001	-	-
Benzo(k)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	-	-
Chrysene	0.00001	mg/L	< 0.00001	< 0.00001	-	-
Dibenz(a.h)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	-	-
Fluoranthene	0.00001	mg/L	0.00041	< 0.00001	-	-
Fluorene	0.00001	mg/L	0.00095	< 0.00001	-	-
Indeno(1.2.3-cd)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	-	-
Naphthalene	0.00001	mg/L	0.015	< 0.00001	-	-
Phenanthrene	0.00001	mg/L	0.0013	< 0.00001	-	-
Pyrene	0.00001	mg/L	0.00060	< 0.00001	-	-
Total PAH*	0.00001	mg/L	0.01931	< 0.00001	-	-
2-Fluorobiphenyl (surr.)	1	%	59	108	-	-
p-Terphenyl-d14 (surr.)	1	%	99	112	-	-
Ammonia (as N)	0.01	mg/L	< 0.01	-	-	-
Chloride	1	mg/L	12	-	-	-
Cyanide (total)	0.004	mg/L	0.050	-	-	-
Ferrous Iron - Fe2+	0.05	mg/L	0.48	-	-	-
Nitrate (as N)	0.02	mg/L	< 0.02	-	-	-
pH (at 25 °C)	0.1	pH Units	7.1	-	-	-
Sulphate (as SO4)	5	mg/L	71	-	-	-
Total Dissolved Solids Dried at 180°C ± 2°C	10	mg/L	290	-	-	-
Total Suspended Solids Dried at 103–105°C	1	mg/L	150	-	-	-
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	170	-	-	-
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10	-	-	-
Alkali Metals						
Calcium	0.5	mg/L	56	-	-	-
Magnesium	0.5	mg/L	< 5	-	-	-
Potassium	0.5	mg/L	< 5	-	-	-
Sodium	0.5	mg/L	15	-	-	-
Heavy Metals						
Arsenic	0.001	mg/L	-	-	< 0.001	-
Arsenic (filtered)	0.001	mg/L	0.006	< 0.001	-	-
Cadmium	0.0002	mg/L	-	-	< 0.0002	-
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Chromium	0.001	mg/L	-	-	< 0.001	-
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	-	-

Client Sample ID			GASW_BH25A	QC02	RB01	TRIP BLANK
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Au29632	S20-Au29633	S20-Au29634	S20-Au29635
Date Sampled			Aug 17, 2020	Aug 18, 2020	Aug 17, 2020	Aug 17, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Copper	0.001	mg/L	-	-	< 0.001	-
Copper (filtered)	0.001	mg/L	0.052	0.001	-	-
Lead	0.001	mg/L	-	-	< 0.001	-
Lead (filtered)	0.001	mg/L	0.002	< 0.001	-	-
Manganese (filtered)	0.005	mg/L	0.078	-	-	-
Mercury	0.0001	mg/L	-	-	< 0.0001	-
Mercury (filtered)	0.0001	mg/L	0.0002	< 0.0001	-	-
Nickel	0.001	mg/L	-	-	< 0.001	-
Nickel (filtered)	0.001	mg/L	0.012	0.011	-	-
Zinc	0.005	mg/L	-	-	< 0.005	-
Zinc (filtered)	0.005	mg/L	0.094	0.051	-	-

Client Sample ID			TRIP SPIKE	SRT_BH059
Sample Matrix			Water	Water
Eurofins Sample No.			S20-Au29636	S20-Au29637
Date Sampled			Aug 17, 2020	Aug 18, 2020
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				
TRH C6-C9	0.02	mg/L	-	< 0.02
TRH C10-C14	0.05	mg/L	-	< 0.05
TRH C15-C28	0.1	mg/L	-	< 0.1
TRH C29-C36	0.1	mg/L	-	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	-	< 0.1
BTEX				
Benzene	0.001	mg/L	-	< 0.001
Toluene	0.001	mg/L	-	< 0.001
Ethylbenzene	0.001	mg/L	-	< 0.001
m&p-Xylenes	0.002	mg/L	-	< 0.002
o-Xylene	0.001	mg/L	-	< 0.001
Xylenes - Total*	0.003	mg/L	-	< 0.003
4-Bromofluorobenzene (surr.)	1	%	-	83
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
Naphthalene[N02]	0.01	mg/L	-	< 0.01
TRH C6-C10	0.02	mg/L	-	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	-	< 0.02
TRH >C10-C16	0.05	mg/L	-	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	-	< 0.05
TRH >C16-C34	0.1	mg/L	-	< 0.1
TRH >C34-C40	0.1	mg/L	-	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	-	< 0.1
Phenols (Halogenated)				
2-Chlorophenol	0.003	mg/L	-	< 0.003
2.4-Dichlorophenol	0.003	mg/L	-	< 0.003
2.4.5-Trichlorophenol	0.01	mg/L	-	< 0.01
2.4.6-Trichlorophenol	0.01	mg/L	-	< 0.01
2.6-Dichlorophenol	0.003	mg/L	-	< 0.003
4-Chloro-3-methylphenol	0.01	mg/L	-	< 0.01
Pentachlorophenol	0.01	mg/L	-	< 0.01

Client Sample ID			TRIP SPIKE	SRT_BH059
Sample Matrix			Water	Water
Eurofins Sample No.			S20-Au29636	S20-Au29637
Date Sampled			Aug 17, 2020	Aug 18, 2020
Test/Reference	LOR	Unit		
Phenols (Halogenated)				
Tetrachlorophenols - Total	0.03	mg/L	-	< 0.03
Total Halogenated Phenol*	0.01	mg/L	-	< 0.01
Phenols (non-Halogenated)				
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	-	< 0.1
2-Methyl-4.6-dinitrophenol	0.03	mg/L	-	< 0.03
2-Methylphenol (o-Cresol)	0.003	mg/L	-	< 0.003
2-Nitrophenol	0.01	mg/L	-	< 0.01
2.4-Dimethylphenol	0.003	mg/L	-	< 0.003
2.4-Dinitrophenol	0.03	mg/L	-	< 0.03
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	-	< 0.006
4-Nitrophenol	0.03	mg/L	-	< 0.03
Dinoseb	0.1	mg/L	-	< 0.1
Phenol	0.003	mg/L	-	< 0.003
Total Non-Halogenated Phenol*	0.1	mg/L	-	< 0.1
Phenol-d6 (surr.)	1	%	-	38
TRH - 2013 NEPM Fractions (after silica gel clean-up)				
TRH >C10-C16 (after silica gel clean-up)	0.05	mg/L	-	< 0.05
TRH >C16-C34 (after silica gel clean-up)	0.1	mg/L	-	< 0.1
TRH >C34-C40 (after silica gel clean-up)	0.1	mg/L	-	< 0.1
TRH - 1999 NEPM Fractions (after silica gel clean-up)				
TRH C10-C36 (Total) (after silica gel clean-up)	0.1	mg/L	-	< 0.1
TRH C10-C14 (after silica gel clean-up)	0.05	mg/L	-	< 0.05
TRH C15-C28 (after silica gel clean-up)	0.1	mg/L	-	< 0.1
TRH C29-C36 (after silica gel clean-up)	0.1	mg/L	-	< 0.1
Polycyclic Aromatic Hydrocarbons (Trace level)				
Acenaphthene	0.00001	mg/L	-	< 0.00001
Acenaphthylene	0.00001	mg/L	-	< 0.00001
Anthracene	0.00001	mg/L	-	< 0.00001
Benz(a)anthracene	0.00001	mg/L	-	< 0.00001
Benzo(a)pyrene	0.00001	mg/L	-	< 0.00001
Benzo(b&j)fluoranthene	0.00001	mg/L	-	< 0.00001
Benzo(g.h.i)perylene	0.00001	mg/L	-	< 0.00001
Benzo(k)fluoranthene	0.00001	mg/L	-	< 0.00001
Chrysene	0.00001	mg/L	-	< 0.00001
Dibenz(a.h)anthracene	0.00001	mg/L	-	< 0.00001
Fluoranthene	0.00001	mg/L	-	< 0.00001
Fluorene	0.00001	mg/L	-	< 0.00001
Indeno(1.2.3-cd)pyrene	0.00001	mg/L	-	< 0.00001
Naphthalene	0.00001	mg/L	-	< 0.00001
Phenanthrene	0.00001	mg/L	-	< 0.00001
Pyrene	0.00001	mg/L	-	< 0.00001
Total PAH*	0.00001	mg/L	-	< 0.00001
2-Fluorobiphenyl (surr.)	1	%	-	60
p-Terphenyl-d14 (surr.)	1	%	-	78
Ammonia (as N)	0.01	mg/L	-	< 0.01
Chloride	1	mg/L	-	9.2
Cyanide (total)	0.004	mg/L	-	< 0.004
Ferrous Iron - Fe2+	0.05	mg/L	-	< 0.05

Client Sample ID			TRIP SPIKE	SRT_BH059
Sample Matrix			Water	Water
Eurofins Sample No.			S20-Au29636	S20-Au29637
Date Sampled			Aug 17, 2020	Aug 18, 2020
Test/Reference	LOR	Unit		
Nitrate (as N)	0.02	mg/L	-	1.4
pH (at 25 °C)	0.1	pH Units	-	7.3
Sulphate (as SO4)	5	mg/L	-	22
Total Dissolved Solids Dried at 180°C ± 2°C	10	mg/L	-	240
Total Suspended Solids Dried at 103–105°C	1	mg/L	-	350
Alkalinity (speciated)				
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	-	210
Carbonate Alkalinity (as CaCO3)	10	mg/L	-	< 10
Alkali Metals				
Calcium	0.5	mg/L	-	44
Magnesium	0.5	mg/L	-	8.1
Potassium	0.5	mg/L	-	5.6
Sodium	0.5	mg/L	-	13
Heavy Metals				
Arsenic (filtered)	0.001	mg/L	-	< 0.001
Cadmium (filtered)	0.0002	mg/L	-	< 0.0002
Chromium (filtered)	0.001	mg/L	-	0.002
Copper (filtered)	0.001	mg/L	-	0.010
Lead (filtered)	0.001	mg/L	-	< 0.001
Manganese (filtered)	0.005	mg/L	-	< 0.005
Mercury (filtered)	0.0001	mg/L	-	< 0.0001
Nickel (filtered)	0.001	mg/L	-	< 0.001
Zinc (filtered)	0.005	mg/L	-	< 0.005
Total Recoverable Hydrocarbons				
Naphthalene	1	%	110	-
TRH C6-C10	1	%	78	-
TRH C6-C9	1	%	78	-
BTEX				
Benzene	1	%	100	-
Ethylbenzene	1	%	100	-
m&p-Xylenes	1	%	100	-
o-Xylene	1	%	96	-
Toluene	1	%	120	-
Xylenes - Total	1	%	98	-
4-Bromofluorobenzene (surr.)	1	%	99	-

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Aug 21, 2020	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Melbourne	Aug 21, 2020	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Aug 21, 2020	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons	Melbourne	Aug 21, 2020	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Eurofins Suite B6 (filtered metals)			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Aug 21, 2020	
- Method: LTM-ORG-2010 TRH C6-C40			
Metals M8 filtered	Melbourne	Aug 21, 2020	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Phenols (IWRG 621)			
Phenols (Halogenated)	Melbourne	Aug 21, 2020	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (non-Halogenated)	Melbourne	Aug 21, 2020	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
TRH - 2013 NEPM Fractions (after silica gel clean-up)	Melbourne	Aug 21, 2020	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
TRH - 1999 NEPM Fractions (after silica gel clean-up)	Melbourne	Aug 21, 2020	7 Days
- Method: TRH C6-C36 (Silica Gel Cleanup) - MGT 100A			
Polycyclic Aromatic Hydrocarbons (Trace level)	Melbourne	Aug 21, 2020	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water (trace)			
Cyanide (total)	Melbourne	Aug 21, 2020	14 Days
- Method: LTM-INO-4020 Total Free WAD Cyanide by CFA			
Ferrous Iron - Fe2+	Melbourne	Aug 21, 2020	7 Days
- Method: LTM-INO-4190 Ferrous Iron in Water by Discrete Analyser			
pH (at 25 °C)	Melbourne	Aug 21, 2020	0 Hours
- Method: LTM-GEN-7090 pH in water by ISE			
Total Suspended Solids Dried at 103–105°C	Melbourne	Aug 21, 2020	7 Days
- Method: LTM-INO-4070 Analysis of Suspended Solids in Water by Gravimetry			
Metals M8	Melbourne	Aug 21, 2020	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Heavy Metals (filtered)	Melbourne	Aug 21, 2020	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Major Cations			
Ammonia (as N)	Melbourne	Aug 21, 2020	28 Days
- Method: APHA 4500-NH3 Ammonia Nitrogen by FIA			
Alkali Metals	Melbourne	Aug 21, 2020	180 Days
- Method: LTM-MET-3010 Alkali Metals Sulfur Silicon Phosphorus by ICP-AES			
Major Anions			
Chloride	Melbourne	Aug 21, 2020	28 Days
- Method: LTM-INO-4090 Chloride by Discrete Analyser			
Nitrate (as N)	Melbourne	Aug 21, 2020	28 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Sulphate (as SO4)	Melbourne	Aug 21, 2020	28 Days
- Method: LTM-INO-4110 Sulfate by Discrete Analyser			
Alkalinity (speciated)	Melbourne	Aug 21, 2020	14 Days
- Method: LTM-INO-4250 Alkalinity by Electrometric Titration			

Description	Testing Site	Extracted	Holding Time
Total Dissolved Solids Dried at 180°C ± 2°C - Method: LTM-INO-4170 Total Dissolved Solids in Water	Melbourne	Aug 21, 2020	7 Days

eurofins | Environment Testing

ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: GHD Pty Ltd NSW
Address: Level 15, 133 Castlereagh Street
Sydney
NSW 2000

Project Name: CENTRAL
Project ID: 21-27234

Order No.: 2127234
Report #: 738860
Phone: 02 9239 7100
Fax: 02 9239 7199

Received: Aug 19, 2020 3:42 PM
Due: Aug 26, 2020
Priority: 5 Day
Contact Name: Henry Luo

Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail						Cyanide (total)	Ferrous Iron - Fe2+	Manganese (filtered)	pH (at 25 °C)	Total Suspended Solids Dried at 103–105°C	Metals M8	Phenols (IWRG 621)	Major Anions	Major Cations	TRH (after Silica Gel cleanup)	Eurofins Suite B6 (filtered metals)	BTEXN and Volatile TRH	BTEXN and Volatile TRH	Polycyclic Aromatic Hydrocarbons (Trace level)	Total Dissolved Solids Dried at 180°C ± 2°C
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217																				
Brisbane Laboratory - NATA Site # 20794																				
Perth Laboratory - NATA Site # 23736																				
Newcastle Laboratory																				
External Laboratory																				
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**															
1	CSM_BH02	Aug 18, 2020		Water	S20-Au29620	X	X	X	X	X		X	X	X	X	X			X	X
2	CSM_BH04	Aug 17, 2020		Water	S20-Au29621	X	X	X	X	X		X	X	X	X	X			X	X
3	CSM_BH06	Aug 18, 2020		Water	S20-Au29622	X	X	X	X	X		X	X	X	X	X			X	X
4	CSM_BH08	Aug 19, 2020		Water	S20-Au29623	X	X	X	X	X		X	X	X	X	X			X	X
5	CSM_BH09S	Aug 18, 2020		Water	S20-Au29624	X	X	X	X	X		X	X	X	X	X			X	X
6	CSM_BH10S	Aug 17, 2020		Water	S20-Au29625	X	X	X	X	X		X	X	X	X	X			X	X
7	CSM_BH047	Aug 19, 2020		Water	S20-Au29626	X	X	X	X	X		X	X	X	X	X			X	X
8	CSM_BH050	Aug 19, 2020		Water	S20-Au29627	X	X	X				X			X	X			X	
9	CSM_BH052	Aug 19, 2020		Water	S20-Au29628	X	X	X	X	X		X	X	X	X	X			X	X

eurofins | Environment Testing

ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: GHD Pty Ltd NSW
Address: Level 15, 133 Castlereagh Street
Sydney
NSW 2000

Project Name: CENTRAL
Project ID: 21-27234

Order No.: 2127234
Report #: 738860
Phone: 02 9239 7100
Fax: 02 9239 7199

Received: Aug 19, 2020 3:42 PM
Due: Aug 26, 2020
Priority: 5 Day
Contact Name: Henry Luo

Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail						Cyanide (total)	Ferrous Iron - Fe2+	Manganese (filtered)	pH (at 25 °C)	Total Suspended Solids Dried at 103–105°C	Metals M8	Phenols (IWRG 621)	Major Anions	Major Cations	TRH (after Silica Gel cleanup)	Eurofins Suite B6 (filtered metals)	BTEXN and Volatile TRH	BTEXN and Volatile TRH	Polycyclic Aromatic Hydrocarbons (Trace level)	Total Dissolved Solids Dried at 180°C ± 2°C
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217																				
Brisbane Laboratory - NATA Site # 20794																				
Perth Laboratory - NATA Site # 23736																				
10	GASW_BH10	Aug 17, 2020		Water	S20-Au29629	X	X	X	X	X		X	X	X	X	X			X	X
11	GASW_BH11	Aug 17, 2020		Water	S20-Au29630	X	X	X	X	X		X	X	X	X	X			X	X
12	GASW_BH23	Aug 17, 2020		Water	S20-Au29631	X	X	X	X	X		X	X	X	X	X			X	X
13	GASW_BH25A	Aug 17, 2020		Water	S20-Au29632	X	X	X	X	X		X	X	X	X	X			X	X
14	QC02	Aug 18, 2020		Water	S20-Au29633											X			X	
15	RB01	Aug 17, 2020		Water	S20-Au29634						X									
16	TRIP BLANK	Aug 17, 2020		Water	S20-Au29635												X			
17	TRIP SPIKE	Aug 17, 2020		Water	S20-Au29636													X		
18	SRT_BH059	Aug 18, 2020		Water	S20-Au29637	X	X	X	X	X		X	X	X	X	X			X	X
Test Counts						14	14	14	13	13	1	14	13	13	14	15	1	1	15	13

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram
mg/L: milligrams per litre
ug/L: micrograms per litre
ppm: Parts per million
ppb: Parts per billion
%: Percentage
org/100mL: Organisms per 100 millilitres
NTU: Nephelometric Turbidity Units
MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total*	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.01			0.01	Pass	
Naphthalene	mg/L	< 0.01			0.01	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/L	< 0.003			0.003	Pass	
2.4-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
2.4.5-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.4.6-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.6-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
4-Chloro-3-methylphenol	mg/L	< 0.01			0.01	Pass	
Pentachlorophenol	mg/L	< 0.01			0.01	Pass	
Tetrachlorophenols - Total	mg/L	< 0.03			0.03	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	mg/L	< 0.1			0.1	Pass	
2-Methyl-4.6-dinitrophenol	mg/L	< 0.03			0.03	Pass	
2-Methylphenol (o-Cresol)	mg/L	< 0.003			0.003	Pass	
2-Nitrophenol	mg/L	< 0.01			0.01	Pass	
2.4-Dimethylphenol	mg/L	< 0.003			0.003	Pass	
2.4-Dinitrophenol	mg/L	< 0.03			0.03	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/L	< 0.006			0.006	Pass	
4-Nitrophenol	mg/L	< 0.03			0.03	Pass	
Dinoseb	mg/L	< 0.1			0.1	Pass	
Phenol	mg/L	< 0.003			0.003	Pass	
Method Blank							
TRH - 2013 NEPM Fractions (after silica gel clean-up)							
TRH >C10-C16 (after silica gel clean-up)	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34 (after silica gel clean-up)	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40 (after silica gel clean-up)	mg/L	< 0.1			0.1	Pass	
Method Blank							
TRH - 1999 NEPM Fractions (after silica gel clean-up)							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
TRH C10-C14 (after silica gel clean-up)	mg/L	< 0.05			0.05	Pass	
TRH C15-C28 (after silica gel clean-up)	mg/L	< 0.1			0.1	Pass	
TRH C29-C36 (after silica gel clean-up)	mg/L	< 0.1			0.1	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons (Trace level)							
Acenaphthene	mg/L	< 0.00001			0.00001	Pass	
Acenaphthylene	mg/L	< 0.00001			0.00001	Pass	
Anthracene	mg/L	< 0.00001			0.00001	Pass	
Benz(a)anthracene	mg/L	< 0.00001			0.00001	Pass	
Benzo(a)pyrene	mg/L	< 0.00001			0.00001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.00001			0.00001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.00001			0.00001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.00001			0.00001	Pass	
Chrysene	mg/L	< 0.00001			0.00001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.00001			0.00001	Pass	
Fluoranthene	mg/L	< 0.00001			0.00001	Pass	
Fluorene	mg/L	< 0.00001			0.00001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.00001			0.00001	Pass	
Naphthalene	mg/L	< 0.00001			0.00001	Pass	
Phenanthrene	mg/L	< 0.00001			0.00001	Pass	
Pyrene	mg/L	< 0.00001			0.00001	Pass	
Total PAH*	mg/L	< 0			0.00001	Pass	
Method Blank							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Chloride	mg/L	< 1			1	Pass	
Cyanide (total)	mg/L	< 0.004			0.004	Pass	
Ferrous Iron - Fe2+	mg/L	< 0.05			0.05	Pass	
Nitrate (as N)	mg/L	< 0.02			0.02	Pass	
Sulphate (as SO4)	mg/L	< 5			5	Pass	
Total Dissolved Solids Dried at 180°C ± 2°C	mg/L	< 10			10	Pass	
Total Suspended Solids Dried at 103–105°C	mg/L	< 1			1	Pass	
Method Blank							
Alkalinity (speciated)							
Bicarbonate Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Carbonate Alkalinity (as CaCO3)	mg/L	< 10			10	Pass	
Method Blank							
Alkali Metals							
Calcium	mg/L	< 0.5			0.5	Pass	
Magnesium	mg/L	< 0.5			0.5	Pass	
Potassium	mg/L	< 0.5			0.5	Pass	
Sodium	mg/L	< 0.5			0.5	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	103			70-130	Pass	
TRH C10-C14	%	101			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	102			70-130	Pass	
Toluene	%	112			70-130	Pass	
Ethylbenzene	%	96			70-130	Pass	
m&p-Xylenes	%	93			70-130	Pass	
Xylenes - Total*	%	94			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	114			70-130	Pass	
TRH C6-C10	%	103			70-130	Pass	
TRH C6-C10	%	99			70-130	Pass	
TRH >C10-C16	%	93			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	82			30-130	Pass	
2.4-Dichlorophenol	%	103			30-130	Pass	
2.4.5-Trichlorophenol	%	89			30-130	Pass	
2.4.6-Trichlorophenol	%	96			30-130	Pass	
2.6-Dichlorophenol	%	94			30-130	Pass	
4-Chloro-3-methylphenol	%	83			30-130	Pass	
Pentachlorophenol	%	94			30-130	Pass	
Tetrachlorophenols - Total	%	64			30-130	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	%	72			30-130	Pass	
2-Methyl-4.6-dinitrophenol	%	96			30-130	Pass	
2-Methylphenol (o-Cresol)	%	75			30-130	Pass	
2-Nitrophenol	%	111			30-130	Pass	
2.4-Dimethylphenol	%	69			30-130	Pass	
2.4-Dinitrophenol	%	77			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	%	91			30-130	Pass	
4-Nitrophenol	%	99			30-130	Pass	
Dinoseb	%	100			30-130	Pass	
Phenol	%	62			30-130	Pass	
LCS - % Recovery							
TRH - 2013 NEPM Fractions (after silica gel clean-up)							
TRH >C10-C16 (after silica gel clean-up)	%	125			70-130	Pass	
LCS - % Recovery							
TRH - 1999 NEPM Fractions (after silica gel clean-up)							
TRH C10-C14 (after silica gel clean-up)	%	106			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons (Trace level)							
Acenaphthene	%	83			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Acenaphthylene	%	78			70-130	Pass	
Anthracene	%	78			70-130	Pass	
Benz(a)anthracene	%	80			70-130	Pass	
Benzo(a)pyrene	%	81			70-130	Pass	
Benzo(b&j)fluoranthene	%	95			70-130	Pass	
Benzo(g.h.i)perylene	%	105			70-130	Pass	
Benzo(k)fluoranthene	%	83			70-130	Pass	
Chrysene	%	104			70-130	Pass	
Dibenz(a.h)anthracene	%	103			70-130	Pass	
Fluoranthene	%	74			70-130	Pass	
Fluorene	%	88			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	104			70-130	Pass	
Naphthalene	%	76			70-130	Pass	
Phenanthrene	%	88			70-130	Pass	
Pyrene	%	78			70-130	Pass	
LCS - % Recovery							
Ammonia (as N)	%	92			70-130	Pass	
Chloride	%	98			70-130	Pass	
Cyanide (total)	%	106			70-130	Pass	
Ferrous Iron - Fe2+	%	87			70-130	Pass	
Nitrate (as N)	%	92			70-130	Pass	
Sulphate (as SO4)	%	104			70-130	Pass	
Total Dissolved Solids Dried at 180°C ± 2°C	%	92			70-130	Pass	
Total Suspended Solids Dried at 103–105°C	%	127			70-130	Pass	
LCS - % Recovery							
Alkalinity (speciated)							
Carbonate Alkalinity (as CaCO3)	%	94			70-130	Pass	
LCS - % Recovery							
Alkali Metals							
Calcium	%	80			80-120	Pass	
Magnesium	%	83			80-120	Pass	
Potassium	%	81			80-120	Pass	
Sodium	%	86			80-120	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	101			80-120	Pass	
Cadmium	%	99			80-120	Pass	
Chromium	%	99			80-120	Pass	
Copper	%	97			80-120	Pass	
Lead	%	99			80-120	Pass	
Mercury	%	82			80-120	Pass	
Nickel	%	99			80-120	Pass	
Zinc	%	99			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Alkali Metals				Result 1					
Calcium	S20-Au29620	CP	%	94			75-125	Pass	
Magnesium	S20-Au29620	CP	%	92			75-125	Pass	
Sodium	S20-Au29620	CP	%	94			75-125	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	M20-Au33300	NCP	%	83			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
TRH >C10-C16	M20-Au33300	NCP	%	83			70-130	Pass	
Spike - % Recovery									
				Result 1					
Total Suspended Solids Dried at 103–105°C	S20-Au29622	CP	%	98			70-130	Pass	
Spike - % Recovery									
Phenols (non-Halogenated)				Result 1					
2-Cyclohexyl-4.6-dinitrophenol	M20-Au19122	NCP	%	32			30-130	Pass	
Spike - % Recovery									
Phenols (Halogenated)				Result 1					
2-Chlorophenol	S20-Au29627	CP	%	89			30-130	Pass	
2.4-Dichlorophenol	S20-Au29627	CP	%	94			30-130	Pass	
2.4.5-Trichlorophenol	S20-Au29627	CP	%	67			30-130	Pass	
2.4.6-Trichlorophenol	S20-Au29627	CP	%	66			30-130	Pass	
2.6-Dichlorophenol	S20-Au29627	CP	%	99			30-130	Pass	
4-Chloro-3-methylphenol	S20-Au29627	CP	%	88			30-130	Pass	
Pentachlorophenol	S20-Au29627	CP	%	47			30-130	Pass	
Tetrachlorophenols - Total	S20-Au29627	CP	%	80			30-130	Pass	
Spike - % Recovery									
Phenols (non-Halogenated)				Result 1					
2-Methyl-4.6-dinitrophenol	S20-Au29627	CP	%	89			30-130	Pass	
2-Methylphenol (o-Cresol)	S20-Au29627	CP	%	87			30-130	Pass	
2-Nitrophenol	S20-Au29627	CP	%	120			30-130	Pass	
2.4-Dimethylphenol	S20-Au29627	CP	%	84			30-130	Pass	
2.4-Dinitrophenol	S20-Au29627	CP	%	43			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	S20-Au29627	CP	%	91			30-130	Pass	
4-Nitrophenol	S20-Au29627	CP	%	92			30-130	Pass	
Dinoseb	S20-Au29627	CP	%	71			30-130	Pass	
Phenol	S20-Au29627	CP	%	85			30-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons (Trace level)				Result 1					
Acenaphthene	S20-Au29627	CP	%	94			70-130	Pass	
Acenaphthylene	S20-Au29627	CP	%	90			70-130	Pass	
Anthracene	S20-Au29627	CP	%	99			70-130	Pass	
Benz(a)anthracene	S20-Au29627	CP	%	101			70-130	Pass	
Benzo(a)pyrene	S20-Au29627	CP	%	96			70-130	Pass	
Benzo(b&j)fluoranthene	S20-Au29627	CP	%	103			70-130	Pass	
Benzo(g.h.i)perylene	S20-Au29627	CP	%	87			70-130	Pass	
Benzo(k)fluoranthene	S20-Au29627	CP	%	116			70-130	Pass	
Chrysene	S20-Au29627	CP	%	102			70-130	Pass	
Dibenz(a.h)anthracene	S20-Au29627	CP	%	100			70-130	Pass	
Fluoranthene	S20-Au29627	CP	%	106			70-130	Pass	
Fluorene	S20-Au29627	CP	%	89			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S20-Au29627	CP	%	102			70-130	Pass	
Naphthalene	S20-Au29627	CP	%	77			70-130	Pass	
Phenanthrene	S20-Au29627	CP	%	108			70-130	Pass	
Pyrene	S20-Au29627	CP	%	113			70-130	Pass	
Spike - % Recovery									
				Result 1					
Ammonia (as N)	S20-Au29630	CP	%	92			70-130	Pass	
Nitrate (as N)	S20-Au29630	CP	%	91			70-130	Pass	
Spike - % Recovery									
Alkali Metals				Result 1					
Calcium	S20-Au29631	CP	%	107			75-125	Pass	
Magnesium	S20-Au29631	CP	%	105			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Potassium	S20-Au29631	CP	%	101			75-125	Pass	
Sodium	S20-Au29631	CP	%	103			75-125	Pass	
Spike - % Recovery									
				Result 1					
Chloride	S20-Au29632	CP	%	96			70-130	Pass	
Sulphate (as SO4)	S20-Au29632	CP	%	84			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M20-Au31532	NCP	%	108			75-125	Pass	
Cadmium	M20-Au31532	NCP	%	104			75-125	Pass	
Chromium	M20-Au31532	NCP	%	103			75-125	Pass	
Copper	M20-Au31532	NCP	%	101			75-125	Pass	
Lead	M20-Au31532	NCP	%	100			75-125	Pass	
Mercury	M20-Au31532	NCP	%	98			75-125	Pass	
Nickel	M20-Au31532	NCP	%	99			75-125	Pass	
Zinc	M20-Au31532	NCP	%	98			75-125	Pass	
Spike - % Recovery									
				Result 1					
Cyanide (total)	S20-Au29637	CP	%	117			70-130	Pass	
Ferrous Iron - Fe2+	S20-Au29637	CP	%	103			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	M20-Au33313	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	M20-Au33313	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	M20-Au33313	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	M20-Au33313	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	M20-Au33313	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	M20-Au33313	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total*	M20-Au33313	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	M20-Au33313	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	M20-Au33313	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Ferrous Iron - Fe2+	S20-Au29620	CP	mg/L	0.09	0.09	2.0	30%	Pass	
Duplicate									
Alkali Metals				Result 1	Result 2	RPD			
Calcium	S20-Au29620	CP	mg/L	26	25	4.0	30%	Pass	
Magnesium	S20-Au29620	CP	mg/L	19	19	2.0	30%	Pass	
Potassium	S20-Au29620	CP	mg/L	< 5	< 5	<1	30%	Pass	
Sodium	S20-Au29620	CP	mg/L	53	53	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	M20-Au33299	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	M20-Au33299	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	M20-Au33299	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	M20-Au33299	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	M20-Au33299	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	M20-Au33299	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	

Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	S20-Au29622	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	S20-Au29622	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	S20-Au29622	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	S20-Au29622	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	S20-Au29622	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	S20-Au29622	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
TRH - 2013 NEPM Fractions (after silica gel clean-up)				Result 1	Result 2	RPD			
TRH >C10-C16 (after silica gel clean-up)	S20-Au29622	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34 (after silica gel clean-up)	S20-Au29622	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40 (after silica gel clean-up)	S20-Au29622	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
TRH - 1999 NEPM Fractions (after silica gel clean-up)				Result 1	Result 2	RPD			
TRH C10-C36 (Total) (after silica gel clean-up)	S20-Au29622	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C10-C14 (after silica gel clean-up)	S20-Au29622	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28 (after silica gel clean-up)	S20-Au29622	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36 (after silica gel clean-up)	S20-Au29622	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chloride	S20-Au29622	CP	mg/L	200	190	4.0	30%	Pass	
Sulphate (as SO4)	S20-Au29622	CP	mg/L	21	20	4.0	30%	Pass	
Total Suspended Solids Dried at 103–105°C	S20-Au29622	CP	mg/L	97	78	22	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Cyanide (total)	S20-Au29624	CP	mg/L	< 0.004	< 0.004	<1	30%	Pass	
Duplicate									
Phenols (Halogenated)				Result 1	Result 2	RPD			
2-Chlorophenol	S20-Au29626	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.4-Dichlorophenol	S20-Au29626	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.4.5-Trichlorophenol	S20-Au29626	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.4.6-Trichlorophenol	S20-Au29626	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.6-Dichlorophenol	S20-Au29626	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
4-Chloro-3-methylphenol	S20-Au29626	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Pentachlorophenol	S20-Au29626	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Tetrachlorophenols - Total	S20-Au29626	CP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
Duplicate									
Phenols (non-Halogenated)				Result 1	Result 2	RPD			
2-Cyclohexyl-4.6-dinitrophenol	S20-Au29626	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
2-Methyl-4.6-dinitrophenol	S20-Au29626	CP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
2-Methylphenol (o-Cresol)	S20-Au29626	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2-Nitrophenol	S20-Au29626	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.4-Dimethylphenol	S20-Au29626	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.4-Dinitrophenol	S20-Au29626	CP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	S20-Au29626	CP	mg/L	< 0.006	< 0.006	<1	30%	Pass	
4-Nitrophenol	S20-Au29626	CP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
Dinoseb	S20-Au29626	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Phenol	S20-Au29626	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons (Trace level)				Result 1	Result 2	RPD			
Acenaphthene	S20-Au29626	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Acenaphthylene	S20-Au29626	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Anthracene	S20-Au29626	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Benz(a)anthracene	S20-Au29626	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Benzo(a)pyrene	S20-Au29626	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Benzo(b&j)fluoranthene	S20-Au29626	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Benzo(g.h.i)perylene	S20-Au29626	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Benzo(k)fluoranthene	S20-Au29626	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Chrysene	S20-Au29626	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Dibenz(a.h)anthracene	S20-Au29626	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Fluoranthene	S20-Au29626	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Fluorene	S20-Au29626	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S20-Au29626	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Naphthalene	S20-Au29626	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Phenanthrene	S20-Au29626	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Pyrene	S20-Au29626	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
pH (at 25 °C)	S20-Au29628	CP	pH Units	6.4	6.5	pass	30%	Pass	
Duplicate									
Alkalinity (speciated)				Result 1	Result 2	RPD			
Bicarbonate Alkalinity (as CaCO3)	S20-Au29628	CP	mg/L	37	37	2.0	30%	Pass	
Carbonate Alkalinity (as CaCO3)	S20-Au29628	CP	mg/L	< 10	< 10	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Total Dissolved Solids Dried at 180°C ± 2°C	S20-Au29629	CP	mg/L	880	890	1.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Ammonia (as N)	S20-Au29630	CP	mg/L	0.06	0.06	7.0	30%	Pass	
Ferrous Iron - Fe2+	S20-Au29630	CP	mg/L	0.61	0.66	8.0	30%	Pass	
Nitrate (as N)	S20-Au29630	CP	mg/L	0.03	0.03	16	30%	Pass	
Duplicate									
Alkali Metals				Result 1	Result 2	RPD			
Calcium	S20-Au29631	CP	mg/L	80	85	6.0	30%	Pass	
Magnesium	S20-Au29631	CP	mg/L	6.2	6.3	1.0	30%	Pass	
Potassium	S20-Au29631	CP	mg/L	12	13	5.0	30%	Pass	
Sodium	S20-Au29631	CP	mg/L	23	24	6.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M20-Au32083	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	M20-Au32083	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	M20-Au32083	NCP	mg/L	0.001	< 0.001	18	30%	Pass	
Copper	M20-Au32083	NCP	mg/L	0.002	< 0.001	3.0	30%	Pass	
Lead	M20-Au32083	NCP	mg/L	0.001	< 0.001	7.0	30%	Pass	
Mercury	M20-Au32083	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	M20-Au32083	NCP	mg/L	0.005	0.005	3.0	30%	Pass	
Zinc	M20-Au32083	NCP	mg/L	0.072	0.070	6.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Cyanide (total)	S20-Au29637	CP	mg/L	< 0.004	< 0.004	<1	30%	Pass	
Total Dissolved Solids Dried at 180°C ± 2°C	S20-Au29637	CP	mg/L	240	230	7.0	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.

Authorised By

Alena Bounkeua	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)
Scott Beddoes	Senior Analyst-Inorganic (VIC)



Glenn Jackson
General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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☑ **Sydney**
Unit F3 - 6 Building F, 16 Mars Road, Lane Cove
Phone: +612 9900 8400
Email: enviro.syd@mgtlabmark.com.au

☐ **Brisbane**
Unit 1-21 Smallwood Place, Murrarie
Phone: +617 3902 4600
Email: enviro.bris@mgtlabmark.com.au

☐ **Melbourne**
2 Kingston Town Close, Oakleigh, VIC 3166
Phone: +613 8564 5000 Fax: +613 8564 5090
Email: enquiries.melb@mgtlabmark.com.au

CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name : GHD Pty Ltd, Sydney	**Contact Name :** Terry Nham / Jake Vickers	**Purchase Order :** 2127234	**COC Number :**
Office Address :	**Project Manager :** Henry Luo	**PROJECT Number :** 2127234	**Eurofins | mgt quote ID :** GHD Rates 2020
Level 15, 133 Castlereagh Street, Sydney NSW 2000	**Email for results :** terry.nham@ghd.com henry.luo@ghd.com jake.vickers@ghd.com	**PROJECT Name :** Central	**Data output format:** ESDAT

Special Directions & Comments :

Eurofins | mgt DI water batch number:

Analytes

	Sample ID	Date	Matrix	TRH, BTEXN, 8 Metals (Dissolved) (Suite B6)	PAH - Trace LOR	Phenols		TRH (with Silica Gel Cleanup)	Cyanide - Trace Level (<0.004 mg/L)	Ammonia	Major Anions and Cations + Hardness		Ferrous Iron	Manganese	pH	TDS	TSS		TRH C6-C10 / BTEX	8 Metals (Total)				
1	CSM_BH02	14/09/20	Water	X	X	X		X	X	X	X		X	X	X	X	X							
2	CSM_BH04	14/09/20	Water	X	X	X		X	X	X	X		X	X	X	X	X							
3	CSM_BH06	14/09/20	Water	X	X	X		X	X	X	X		X	X	X	X	X							
4	CSM_BH08	14/09/20	Water	X	X	X		X	X	X	X		X	X	X	X	X							
5	CSM_BH09S	16/09/20	Water	X	X	X		X	X	X	X		X	X	X	X	X							
6	CSM_BH10S	15/09/20	Water	X	X	X		X	X	X	X		X	X	X	X	X							
7	SRT_BH047	15/09/20	Water	X	X	X		X	X	X	X		X	X	X	X	X							
8	SRT_BH052	15/09/20	Water	X	X	X		X	X	X	X		X	X	X	X	X							
9	GASW_BH10	14/09/20	Water	X	X	X		X	X	X	X		X	X	X	X	X							
10	GASW_BH11	16/09/20	Water	X	X	X		X	X	X	X		X	X	X	X	X							
11	GASW_BH23	15/09/20	Water	X	X	X		X	X	X			X	X										
12	GASW_BH25a	16/09/20	Water	X	X	X		X	X	X	X		X	X	X	X	X							
13	QC02	14/09/20	Water	X	X																			
14	RB01	15/09/20	Water																	X				
15	SRT_BH059	15/09/20	Water	X	X	X		X	X	X	X		X	X	X	X	X							
16	Trip Blank	14/09/20	Water																X					

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

	500P	250P	60P	1LA	40mL vial	200mL A	Jar	Bag	Sample comments:
1	1		4		2	2			
2	1		4		2	2			
3	1		4		2	2			
4	1		4		2	2			
5	1		4		2	2			
6	1		4		2	2			
7	1		4		2	2			
8	1		4		2	2			
9	1		4		2	2			
10	1		4		2	2			
11			4		2	2			
12	1		4		2	2			
13	1		4		2	2			
14			1						
15	1		4		2	2			
16					2				

Laboratory Staff

Relinquished By: Terry Nham - GHD

Date & Time : 16/09/2020

Signature: TN

Received By: Lina D.

Date & Time : 16/09/2020 2:10 PM

Signature:

Turn around time

1 DAY ☐ 2 DAY ☐ 3 DAY ☐

5 DAY ☑ 10 DAY ☐ Other:

Method Of Shipment

☐ Courier
☑ Hand Delivered
☐ Postal

Courier Consignment # :

Temperature on arrival: 3.5°C

Report number: 744463

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☑ **Sydney**
Unit F3 - 6 Building F, 16 Mars Road, Lane Cove
Phone: +612 9900 8400
Email: enviro.syd@mgtlabmark.com.au

☐ **Brisbane**
Unit 1-21 Smallwood Place, Murrarie
Phone: +617 3902 4600
Email: enviro.bris@mgtlabmark.com.au

☐ **Melbourne**
2 Kingston Town Close, Oakleigh, VIC 3166
Phone: +613 8564 5000 Fax: +613 8564 5090
Email: enquiries.melb@mgtlabmark.com.au

CHAIN OF CUSTODY RECORD

CLIENT DETAILS

Company Name : GHD Pty Ltd, Sydney	**Contact Name :** Terry Nham / Jake Vickers	**Purchase Order :** 2127234	**COC Number :**
Office Address :	**Project Manager :** Henry Luo	**PROJECT Number :** 2127234	**Eurofins | mgt quote ID :** GHD Rates 2020
Level 15, 133 Castlereagh Street, Sydney NSW 2000	**Email for results :** terry.nham@ghd.com henry.luo@ghd.com jake.vickers@ghd.com	**PROJECT Name :** Central	**Data output format:** ESDAT

Special Directions & Comments :

Eurofins | mgt DI water batch number:

Analytes

	Sample ID	Date	Matrix	TRH, BTEXN, 8 Metals (Dissolved) (Suite B6)	PAH - Trace LOR	Phenols		TRH (with Silica Gel Cleanup)	Cyanide - Trace Level (<0.004 mg/L)	Ammonia	Major Anions and Cations		Ferrous Iron	Manganese	pH	TDS	TSS		TRH C6-C10 / BTEX	8 Metals (Total)				
1	Trip Spike	14/09/20	Water																X					
2																								
3																								
4																								
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								
13																								
14																								
15																								
16																								

Some common holding times (with correct preservation).
For further information contact the lab

Waters		Soils	
BTEX, MAH, VOC	14 days	BTEX, MAH, VOC	14 days
TRH, PAH, Phenols, Pesticides	7 days	TRH, PAH, Phenols, Pesticides	14 days
Heavy Metals	6 months	Heavy Metals	6 months
Mercury, CrVI	28 days	Mercury, CrVI	28 days
Microbiological testing	24 hours	Microbiological testing	72 hours
BOD, Nitrate, Nitrite, Total N	2 days	Anions	28 days
Solids - TSS, TDS etc	7 days	SPOCAS, pH Field and FOX, CrS	24 hours
Ferrous iron	7 days	ASLP, TCLP	7 days

Containers:

500P	250P	60P	1LA	40mL vial	200mL A	Jar	Bag
				2			

Sample comments:

Laboratory Staff

Relinquished By: Terry Nham - GHD
Date & Time : 16/09/2020
Signature: TN

Received By: Luca D.
Date & Time : 16/09/2020 2:10 PM
Signature:

Turn around time

1 DAY ☐ 2 DAY ☐ 3 DAY ☐
5 DAY ☑ 10 DAY ☐ Other:

Method Of Shipment

☐ Courier
☑ Hand Delivered
☐ Postal
Courier Consignment # :

Temperature on arrival: 3.5°C

Report number: 744463

eurofins | Environment Testing

ABN: 50 005 085 521 www.eurofins.com.au EnviroSales@eurofins.com

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Sample Receipt Advice

Company name:	GHD Pty Ltd NSW
Contact name:	Terry Nham
Project name:	CENTRAL
Project ID:	2127234
Turnaround time:	5 Day
Date/Time received	Sep 16, 2020 2:10 PM
Eurofins reference	744463

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	Sample Temperature of a random sample selected from the batch as recorded by Eurofins Sample Receipt : 3.5 degrees Celsius.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Alena Bounkeua on phone : or by email: AlenaBounkeua@eurofins.com

Results will be delivered electronically via email to Terry Nham - Terry.Nham@ghd.com.

Note: A copy of these results will also be delivered to the general GHD Pty Ltd NSW email address.

eurofins | Environment Testing

ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

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New Zealand

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Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: GHD Pty Ltd NSW
Address: Level 15, 133 Castlereagh Street
Sydney
NSW 2000

Project Name: CENTRAL
Project ID: 2127234

Order No.: 2127234
Report #: 744463
Phone: 02 9239 7100
Fax: 02 9239 7199

Received: Sep 16, 2020 2:10 PM
Due: Sep 23, 2020
Priority: 5 Day
Contact Name: Terry Nham

Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail						Ammonia (as N)	Cyanide (total)	Ferrous Iron - Fe2+	Manganese (filtered)	pH (at 25 °C)	Total Suspended Solids Dried at 103–105°C	Metals M8	Phenols (IWRG 621)	Hardness Set	TRH (after Silica Gel cleanup)	Eurofins Suite B6 (filtered metals)	BTEXN and Volatile TRH	Eurofins Suite B11E: Cl/SO4/Alkalinity	BTEXN and Volatile TRH	Eurofins Suite B11C: Na/K/Ca/Mg	Polycyclic Aromatic Hydrocarbons (Trace level)	Total Dissolved Solids Dried at 180°C ± 2°C
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217																						
Brisbane Laboratory - NATA Site # 20794																						
Perth Laboratory - NATA Site # 23736																						
Newcastle Laboratory																						
External Laboratory																						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																	
1	CSM_BH02	Sep 14, 2020		Water	S20-Se28021	X	X	X	X	X	X		X	X	X	X		X		X	X	X
2	CSM_BH04	Sep 14, 2020		Water	S20-Se28041	X	X	X	X	X	X		X	X	X	X		X		X	X	X
3	CSM_BH06	Sep 14, 2020		Water	S20-Se28042	X	X	X	X	X	X		X	X	X	X		X		X	X	X
4	CSM_BH08	Sep 14, 2020		Water	S20-Se28043	X	X	X	X	X	X		X	X	X	X		X		X	X	X
5	CSM_BH09S	Sep 16, 2020		Water	S20-Se28044	X	X	X	X	X	X		X	X	X	X		X		X	X	X
6	CSM_BH10S	Sep 15, 2020		Water	S20-Se28045	X	X	X	X	X	X		X	X	X	X		X		X	X	X
7	SRT_BH047	Sep 15, 2020		Water	S20-Se28046	X	X	X	X	X	X		X	X	X	X		X		X	X	X
8	SRT_BH052	Sep 15, 2020		Water	S20-Se28047	X	X	X	X	X	X		X	X	X	X		X		X	X	X
9	GASW_BH10	Sep 14, 2020		Water	S20-Se28048	X	X	X	X	X	X		X	X	X	X		X		X	X	X

eurofins | Environment Testing

ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

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Company Name: GHD Pty Ltd NSW
Address: Level 15, 133 Castlereagh Street
Sydney
NSW 2000

Project Name: CENTRAL
Project ID: 2127234

Order No.: 2127234
Report #: 744463
Phone: 02 9239 7100
Fax: 02 9239 7199

Received: Sep 16, 2020 2:10 PM
Due: Sep 23, 2020
Priority: 5 Day
Contact Name: Terry Nham

Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail						Ammonia (as N)	Cyanide (total)	Ferrous Iron - Fe2+	Manganese (filtered)	pH (at 25 °C)	Total Suspended Solids Dried at 103–105°C	Metals M8	Phenols (IWRG 621)	Hardness Set	TRH (after Silica Gel cleanup)	Eurofins Suite B6 (filtered metals)	BTEXN and Volatile TRH	Eurofins Suite B11E: Cl/SO4/Alkalinity	BTEXN and Volatile TRH	Eurofins Suite B11C: Na/K/Ca/Mg	Polycyclic Aromatic Hydrocarbons (Trace level)	Total Dissolved Solids Dried at 180°C ± 2°C
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217																						
Brisbane Laboratory - NATA Site # 20794																						
Perth Laboratory - NATA Site # 23736																						
10	GASW_BH11	Sep 16, 2020		Water	S20-Se28049	X	X	X	X	X	X		X	X	X	X		X		X	X	X
11	GASW_BH23	Sep 15, 2020		Water	S20-Se28050	X	X	X	X				X		X	X					X	
12	GASW_BH25A	Sep 16, 2020		Water	S20-Se28051	X	X	X	X	X	X		X	X	X	X		X		X	X	X
13	QC02	Sep 14, 2020		Water	S20-Se28052											X					X	
14	RB01	Sep 15, 2020		Water	S20-Se28053							X										
15	SRT_BH059	Sep 15, 2020		Water	S20-Se28054	X	X	X	X	X	X		X	X	X	X		X		X	X	X
16	TRIP BLANK	Sep 15, 2020		Water	S20-Se28055												X					
17	TRIP SPIKE	Sep 15, 2020		Water	S20-Se28056														X			
Test Counts						13	13	13	13	12	12	1	13	12	13	14	1	12	1	12	14	12

GHD Pty Ltd NSW
Level 15, 133 Castlereagh Street
Sydney
NSW 2000

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards.

Attention: **Terry Nham**

Report **744463-W**
Project name CENTRAL
Project ID 2127234
Received Date Sep 16, 2020

Client Sample ID			**CSM_BH02**	**CSM_BH04**	**CSM_BH06**	**CSM_BH08**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**S20-Se28021**	**S20-Se28041**	**S20-Se28042**	**S20-Se28043**
Date Sampled			**Sep 14, 2020**	**Sep 14, 2020**	**Sep 14, 2020**	**Sep 14, 2020**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	126	100	101	96
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenols (Halogenated)						
2-Chlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.6-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachlorophenols - Total	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Total Halogenated Phenol*	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01

Client Sample ID			CSM_BH02	CSM_BH04	CSM_BH06	CSM_BH08
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Se28021	S20-Se28041	S20-Se28042	S20-Se28043
Date Sampled			Sep 14, 2020	Sep 14, 2020	Sep 14, 2020	Sep 14, 2020
Test/Reference	LOR	Unit				
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2-Nitrophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4-Dimethylphenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006	< 0.006	< 0.006	< 0.006
4-Nitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Dinoseb	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
Total Non-Halogenated Phenol*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol-d6 (surr.)	1	%	64	75	45	70
TRH - 2013 NEPM Fractions (after silica gel clean-up)						
TRH >C10-C16 (after silica gel clean-up)	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C16-C34 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C34-C40 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH - 1999 NEPM Fractions (after silica gel clean-up)						
TRH C10-C36 (Total) (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C10-C14 (after silica gel clean-up)	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH C15-C28 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C29-C36 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Polycyclic Aromatic Hydrocarbons (Trace level)						
Acenaphthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Acenaphthylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benz(a)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(a)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(b&j)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(g.h.i)perylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(k)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Chrysene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Dibenz(a.h)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Fluorene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Indeno(1.2.3-cd)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Naphthalene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Phenanthrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Total PAH*	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
2-Fluorobiphenyl (surr.)	1	%	85	75	76	62
p-Terphenyl-d14 (surr.)	1	%	114	51	76	66
Ammonia (as N)	0.01	mg/L	0.05	0.13	0.09	0.19
Chloride	1	mg/L	85	73	200	84
Cyanide (total)	0.004	mg/L	< 0.004	< 0.004	< 0.004	< 0.004
Ferrous Iron - Fe2+	0.05	mg/L	2.6	5.8	8.8	5.2
pH (at 25 °C)	0.1	pH Units	7.9	6.7	7.0	6.9
Sulphate (as SO4)	5	mg/L	34	34	20	48
Total Dissolved Solids Dried at 180°C ± 2°C	10	mg/L	420	260	440	280
Total Suspended Solids Dried at 103–105°C	1	mg/L	1100	330	200	14

Client Sample ID			CSM_BH02	CSM_BH04	CSM_BH06	CSM_BH08
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Se28021	S20-Se28041	S20-Se28042	S20-Se28043
Date Sampled			Sep 14, 2020	Sep 14, 2020	Sep 14, 2020	Sep 14, 2020
Test/Reference	LOR	Unit				
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	240	95	86	94
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10	< 10	< 10	< 10
Hydroxide Alkalinity (as CaCO3)	20	mg/L	< 20	< 20	< 20	< 20
Total Alkalinity (as CaCO3)	20	mg/L	240	95	86	94
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	0.001	< 0.001	0.002	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.003	0.083	0.002	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001	0.003	< 0.001	< 0.001
Manganese (filtered)	0.005	mg/L	0.49	0.44	0.40	0.30
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.019	0.032	0.017	0.004
Zinc (filtered)	0.005	mg/L	0.014	0.11	0.043	0.012
Alkali Metals						
Calcium	0.5	mg/L	35	7.4	20	8.3
Magnesium	0.5	mg/L	28	13	22	12
Potassium	0.5	mg/L	< 5	< 5	< 5	< 5
Sodium	0.5	mg/L	92	70	96	67
Hardness Set						
Hardness mg equivalent CaCO3/L	5	mg/L	200	73	140	71

Client Sample ID			CSM_BH09S	CSM_BH10S	SRT_BH047	SRT_BH052
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Se28044	S20-Se28045	S20-Se28046	S20-Se28047
Date Sampled			Sep 16, 2020	Sep 15, 2020	Sep 15, 2020	Sep 15, 2020
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	91	93	97	99
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			CSM_BH09S	CSM_BH10S	SRT_BH047	SRT_BH052
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Se28044	S20-Se28045	S20-Se28046	S20-Se28047
Date Sampled			Sep 16, 2020	Sep 15, 2020	Sep 15, 2020	Sep 15, 2020
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenols (Halogenated)						
2-Chlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.6-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachlorophenols - Total	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Total Halogenated Phenol*	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2-Nitrophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4-Dimethylphenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006	< 0.006	< 0.006	< 0.006
4-Nitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Dinoseb	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
Total Non-Halogenated Phenol*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol-d6 (surr.)	1	%	49	39	31	38
TRH - 2013 NEPM Fractions (after silica gel clean-up)						
TRH >C10-C16 (after silica gel clean-up)	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C16-C34 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C34-C40 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH - 1999 NEPM Fractions (after silica gel clean-up)						
TRH C10-C36 (Total) (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C10-C14 (after silica gel clean-up)	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH C15-C28 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C29-C36 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Polycyclic Aromatic Hydrocarbons (Trace level)						
Acenaphthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Acenaphthylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benz(a)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(a)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(b&j)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(g.h.i)perylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(k)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Chrysene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Dibenz(a.h)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Fluorene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Indeno(1.2.3-cd)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001

Client Sample ID			CSM_BH09S	CSM_BH10S	SRT_BH047	SRT_BH052
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Se28044	S20-Se28045	S20-Se28046	S20-Se28047
Date Sampled			Sep 16, 2020	Sep 15, 2020	Sep 15, 2020	Sep 15, 2020
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons (Trace level)						
Naphthalene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Phenanthrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Total PAH*	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
2-Fluorobiphenyl (surr.)	1	%	81	72	52	65
p-Terphenyl-d14 (surr.)	1	%	98	73	81	59
Ammonia (as N)	0.01	mg/L	0.05	0.08	< 0.01	0.01
Chloride	1	mg/L	51	23	22	45
Cyanide (total)	0.004	mg/L	< 0.004	< 0.004	< 0.004	< 0.004
Ferrous Iron - Fe2+	0.05	mg/L	7.3	< 0.05	< 0.05	< 0.05
pH (at 25 °C)	0.1	pH Units	6.5	6.3	7.9	7.6
Sulphate (as SO4)	5	mg/L	130	62	10	35
Total Dissolved Solids Dried at 180°C ± 2°C	10	mg/L	350	170	290	270
Total Suspended Solids Dried at 103–105°C	1	mg/L	91	270	49	1100
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	59	22	95	86
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10	< 10	< 10	< 10
Hydroxide Alkalinity (as CaCO3)	20	mg/L	< 20	< 20	< 20	< 20
Total Alkalinity (as CaCO3)	20	mg/L	59	22	95	86
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.015	0.088	0.008	0.007
Lead (filtered)	0.001	mg/L	< 0.001	0.003	< 0.001	< 0.001
Manganese (filtered)	0.005	mg/L	0.89	0.51	< 0.005	< 0.005
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.006	0.010	0.002	< 0.001
Zinc (filtered)	0.005	mg/L	0.031	0.086	0.020	0.008
Alkali Metals						
Calcium	0.5	mg/L	< 5	< 5	43	24
Magnesium	0.5	mg/L	6.4	5.3	9.7	< 5
Potassium	0.5	mg/L	< 5	< 5	< 5	< 5
Sodium	0.5	mg/L	89	35	27	44
Hardness Set						
Hardness mg equivalent CaCO3/L	5	mg/L	35	32	150	74

Client Sample ID			GASW_BH10	GASW_BH11	R16GASW_BH23	R16GASW_BH25A
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Se28048	S20-Se28049	S20-Se28050	S20-Se28051
Date Sampled			Sep 14, 2020	Sep 16, 2020	Sep 15, 2020	Sep 16, 2020
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	0.67	53
TRH C10-C14	0.05	mg/L	< 0.05	0.13	0.22	1.8
TRH C15-C28	0.1	mg/L	< 0.1	0.3	0.3	1.2
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	0.43	0.52	3
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	0.44	23
Toluene	0.001	mg/L	< 0.001	< 0.001	0.007	11
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	0.006	0.51
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.01	1.4
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.005	0.70
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	< 0.015	2.1
4-Bromofluorobenzene (surr.)	1	%	94	96	96	91
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	< 0.05	< 4
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	0.67	53
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	0.22	16
TRH >C10-C16	0.05	mg/L	< 0.05	0.35	0.24	1.8
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	0.35	0.24	< 4
TRH >C16-C34	0.1	mg/L	< 0.1	0.1	0.3	0.9
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	0.45	0.54	2.7
Phenols (Halogenated)						
2-Chlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.6-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachlorophenols - Total	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Total Halogenated Phenol*	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	< 0.003	< 0.003	0.026
2-Nitrophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.4-Dimethylphenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	0.006
2.4-Dinitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	0.026	< 0.006	< 0.006	0.014
4-Nitrophenol	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Dinoseb	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol	0.003	mg/L	< 0.003	< 0.003	0.020	0.038
Total Non-Halogenated Phenol*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol-d6 (surr.)	1	%	33	31	38	29
TRH - 2013 NEPM Fractions (after silica gel clean-up)						
TRH >C10-C16 (after silica gel clean-up)	0.05	mg/L	< 0.05	< 0.05	0.11	0.50
TRH >C16-C34 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	0.2	< 0.1
TRH >C34-C40 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID			GASW_BH10	GASW_BH11	R16GASW_BH23	R16GASW_BH25A
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Se28048	S20-Se28049	S20-Se28050	S20-Se28051
Date Sampled			Sep 14, 2020	Sep 16, 2020	Sep 15, 2020	Sep 16, 2020
Test/Reference	LOR	Unit				
TRH - 1999 NEPM Fractions (after silica gel clean-up)						
TRH C10-C36 (Total) (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	0.43	0.63
TRH C10-C14 (after silica gel clean-up)	0.05	mg/L	< 0.05	< 0.05	0.13	0.63
TRH C15-C28 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	0.2	< 0.1
TRH C29-C36 (after silica gel clean-up)	0.1	mg/L	< 0.1	< 0.1	0.1	< 0.1
Polycyclic Aromatic Hydrocarbons (Trace level)						
Acenaphthene	0.00001	mg/L	< 0.00001	< 0.00001	0.00028	0.00079
Acenaphthylene	0.00001	mg/L	< 0.00001	< 0.00001	0.00015	0.00027
Anthracene	0.00001	mg/L	< 0.00001	< 0.00001	0.00050	0.00058
Benz(a)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	0.00047	0.00017
Benzo(a)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	0.00072	0.00023
Benzo(b&j)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	0.00049	0.00013
Benzo(g.h.i)perylene	0.00001	mg/L	< 0.00001	< 0.00001	0.00047	0.00012
Benzo(k)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	0.00053	0.00014
Chrysene	0.00001	mg/L	< 0.00001	< 0.00001	0.00042	0.00012
Dibenz(a.h)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	0.00014	0.00003
Fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	0.0012	0.0011
Fluorene	0.00001	mg/L	< 0.00001	< 0.00001	0.00087	0.0018
Indeno(1.2.3-cd)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	0.00036	0.00008
Naphthalene	0.00001	mg/L	< 0.00001	< 0.00001	0.0017	0.021
Phenanthrene	0.00001	mg/L	< 0.00001	< 0.00001	0.00081	0.0022
Pyrene	0.00001	mg/L	< 0.00001	< 0.00001	0.0019	0.0015
Total PAH*	0.00001	mg/L	< 0.00001	< 0.00001	0.01101	0.03026
2-Fluorobiphenyl (surr.)	1	%	59	56	64	68
p-Terphenyl-d14 (surr.)	1	%	53	95	55	93
Ammonia (as N)	0.01	mg/L	0.05	0.12	0.19	0.41
Chloride	1	mg/L	190	37	-	14
Cyanide (total)	0.004	mg/L	< 0.004	< 0.004	0.006	0.082
Ferrous Iron - Fe2+	0.05	mg/L	3.6	0.47	2.3	0.20
pH (at 25 °C)	0.1	pH Units	7.2	6.7	-	7.9
Sulphate (as SO4)	5	mg/L	< 5	45	-	41
Total Dissolved Solids Dried at 180°C ± 2°C	10	mg/L	760	260	-	340
Total Suspended Solids Dried at 103–105°C	1	mg/L	390	6100	-	520
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	530	120	-	230
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10	< 10	-	< 10
Hydroxide Alkalinity (as CaCO3)	20	mg/L	< 20	< 20	-	< 20
Total Alkalinity (as CaCO3)	20	mg/L	530	120	-	230
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	0.002	0.009
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	< 0.001	0.010	0.070	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Manganese (filtered)	0.005	mg/L	0.21	0.23	0.20	0.052
Mercury (filtered)	0.0001	mg/L	0.0002	< 0.0001	< 0.0001	0.0003
Nickel (filtered)	0.001	mg/L	0.018	0.004	0.011	< 0.001
Zinc (filtered)	0.005	mg/L	0.008	0.064	0.064	< 0.005

Client Sample ID			GASW_BH10	GASW_BH11	R16GASW_BH23	R16GASW_BH25A
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Se28048	S20-Se28049	S20-Se28050	S20-Se28051
Date Sampled			Sep 14, 2020	Sep 16, 2020	Sep 15, 2020	Sep 16, 2020
Test/Reference	LOR	Unit				
Alkali Metals						
Calcium	0.5	mg/L	83	8.6	-	75
Magnesium	0.5	mg/L	50	5.3	-	< 5
Potassium	0.5	mg/L	9.0	< 5	-	< 5
Sodium	0.5	mg/L	120	37	-	20
Hardness Set						
Hardness mg equivalent CaCO3/L	5	mg/L	420	43	-	210

Client Sample ID			QC02	RB01	SRT_BH059	TRIP BLANK
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Se28052	S20-Se28053	S20-Se28054	S20-Se28055
Date Sampled			Sep 14, 2020	Sep 15, 2020	Sep 15, 2020	Sep 15, 2020
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	-	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	-	< 0.05	-
TRH C15-C28	0.1	mg/L	< 0.1	-	< 0.1	-
TRH C29-C36	0.1	mg/L	< 0.1	-	< 0.1	-
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	-	< 0.1	-
BTEX						
Benzene	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	-	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	-	< 0.001	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003	-	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	98	-	100	91
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	< 0.01	-	< 0.01	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02	-	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	-	< 0.02	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	-	< 0.05	-
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	-	< 0.05	-
TRH >C16-C34	0.1	mg/L	< 0.1	-	< 0.1	-
TRH >C34-C40	0.1	mg/L	< 0.1	-	< 0.1	-
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	-	< 0.1	-
Phenols (Halogenated)						
2-Chlorophenol	0.003	mg/L	-	-	< 0.003	-
2.4-Dichlorophenol	0.003	mg/L	-	-	< 0.003	-
2.4.5-Trichlorophenol	0.01	mg/L	-	-	< 0.01	-
2.4.6-Trichlorophenol	0.01	mg/L	-	-	< 0.01	-
2.6-Dichlorophenol	0.003	mg/L	-	-	< 0.003	-
4-Chloro-3-methylphenol	0.01	mg/L	-	-	< 0.01	-
Pentachlorophenol	0.01	mg/L	-	-	< 0.01	-
Tetrachlorophenols - Total	0.03	mg/L	-	-	< 0.03	-
Total Halogenated Phenol*	0.01	mg/L	-	-	< 0.01	-

Client Sample ID			QC02	RB01	SRT_BH059	TRIP BLANK
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Se28052	S20-Se28053	S20-Se28054	S20-Se28055
Date Sampled			Sep 14, 2020	Sep 15, 2020	Sep 15, 2020	Sep 15, 2020
Test/Reference	LOR	Unit				
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	-	-	< 0.1	-
2-Methyl-4.6-dinitrophenol	0.03	mg/L	-	-	< 0.03	-
2-Methylphenol (o-Cresol)	0.003	mg/L	-	-	< 0.003	-
2-Nitrophenol	0.01	mg/L	-	-	< 0.01	-
2.4-Dimethylphenol	0.003	mg/L	-	-	< 0.003	-
2.4-Dinitrophenol	0.03	mg/L	-	-	< 0.03	-
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	-	-	< 0.006	-
4-Nitrophenol	0.03	mg/L	-	-	< 0.03	-
Dinoseb	0.1	mg/L	-	-	< 0.1	-
Phenol	0.003	mg/L	-	-	< 0.003	-
Total Non-Halogenated Phenol*	0.1	mg/L	-	-	< 0.1	-
Phenol-d6 (surr.)	1	%	-	-	34	-
TRH - 2013 NEPM Fractions (after silica gel clean-up)						
TRH >C10-C16 (after silica gel clean-up)	0.05	mg/L	-	-	< 0.05	-
TRH >C16-C34 (after silica gel clean-up)	0.1	mg/L	-	-	< 0.1	-
TRH >C34-C40 (after silica gel clean-up)	0.1	mg/L	-	-	< 0.1	-
TRH - 1999 NEPM Fractions (after silica gel clean-up)						
TRH C10-C36 (Total) (after silica gel clean-up)	0.1	mg/L	-	-	< 0.1	-
TRH C10-C14 (after silica gel clean-up)	0.05	mg/L	-	-	< 0.05	-
TRH C15-C28 (after silica gel clean-up)	0.1	mg/L	-	-	< 0.1	-
TRH C29-C36 (after silica gel clean-up)	0.1	mg/L	-	-	< 0.1	-
Polycyclic Aromatic Hydrocarbons (Trace level)						
Acenaphthene	0.00001	mg/L	< 0.00001	-	< 0.00001	-
Acenaphthylene	0.00001	mg/L	< 0.00001	-	< 0.00001	-
Anthracene	0.00001	mg/L	< 0.00001	-	0.00003	-
Benz(a)anthracene	0.00001	mg/L	< 0.00001	-	0.00004	-
Benzo(a)pyrene	0.00001	mg/L	< 0.00001	-	< 0.00001	-
Benzo(b&j)fluoranthene	0.00001	mg/L	< 0.00001	-	< 0.00001	-
Benzo(g.h.i)perylene	0.00001	mg/L	< 0.00001	-	< 0.00001	-
Benzo(k)fluoranthene	0.00001	mg/L	< 0.00001	-	< 0.00001	-
Chrysene	0.00001	mg/L	< 0.00001	-	0.00004	-
Dibenz(a.h)anthracene	0.00001	mg/L	< 0.00001	-	< 0.00001	-
Fluoranthene	0.00001	mg/L	< 0.00001	-	0.00009	-
Fluorene	0.00001	mg/L	< 0.00001	-	< 0.00001	-
Indeno(1.2.3-cd)pyrene	0.00001	mg/L	< 0.00001	-	< 0.00001	-
Naphthalene	0.00001	mg/L	< 0.00001	-	< 0.00001	-
Phenanthrene	0.00001	mg/L	< 0.00001	-	0.00008	-
Pyrene	0.00001	mg/L	< 0.00001	-	0.00011	-
Total PAH*	0.00001	mg/L	< 0.00001	-	0.00039	-
2-Fluorobiphenyl (surr.)	1	%	89	-	68	-
p-Terphenyl-d14 (surr.)	1	%	54	-	62	-
Ammonia (as N)	0.01	mg/L	-	-	0.01	-
Chloride	1	mg/L	-	-	7.5	-
Cyanide (total)	0.004	mg/L	-	-	< 0.004	-
Ferrous Iron - Fe2+	0.05	mg/L	-	-	0.06	-
pH (at 25 °C)	0.1	pH Units	-	-	7.8	-
Sulphate (as SO4)	5	mg/L	-	-	21	-
Total Dissolved Solids Dried at 180°C ± 2°C	10	mg/L	-	-	250	-
Total Suspended Solids Dried at 103–105°C	1	mg/L	-	-	970	-

Client Sample ID			QC02	RB01	SRT_BH059	TRIP BLANK
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S20-Se28052	S20-Se28053	S20-Se28054	S20-Se28055
Date Sampled			Sep 14, 2020	Sep 15, 2020	Sep 15, 2020	Sep 15, 2020
Test/Reference	LOR	Unit				
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	-	-	180	-
Carbonate Alkalinity (as CaCO3)	10	mg/L	-	-	< 10	-
Hydroxide Alkalinity (as CaCO3)	20	mg/L	-	-	< 20	-
Total Alkalinity (as CaCO3)	20	mg/L	-	-	180	-
Heavy Metals						
Arsenic	0.001	mg/L	-	< 0.001	-	-
Arsenic (filtered)	0.001	mg/L	0.002	-	< 0.001	-
Cadmium	0.0002	mg/L	-	< 0.0002	-	-
Cadmium (filtered)	0.0002	mg/L	< 0.0002	-	< 0.0002	-
Chromium	0.001	mg/L	-	< 0.001	-	-
Chromium (filtered)	0.001	mg/L	< 0.001	-	< 0.001	-
Copper	0.001	mg/L	-	< 0.001	-	-
Copper (filtered)	0.001	mg/L	0.002	-	0.13	-
Lead	0.001	mg/L	-	< 0.001	-	-
Lead (filtered)	0.001	mg/L	< 0.001	-	0.002	-
Manganese (filtered)	0.005	mg/L	-	-	0.008	-
Mercury	0.0001	mg/L	-	< 0.0001	-	-
Mercury (filtered)	0.0001	mg/L	< 0.0001	-	< 0.0001	-
Nickel	0.001	mg/L	-	< 0.001	-	-
Nickel (filtered)	0.001	mg/L	0.020	-	0.011	-
Zinc	0.005	mg/L	-	< 0.005	-	-
Zinc (filtered)	0.005	mg/L	0.014	-	0.13	-
Alkali Metals						
Calcium	0.5	mg/L	-	-	50	-
Magnesium	0.5	mg/L	-	-	8.7	-
Potassium	0.5	mg/L	-	-	5.7	-
Sodium	0.5	mg/L	-	-	17	-
Hardness Set						
Hardness mg equivalent CaCO3/L	5	mg/L	-	-	160	-

Client Sample ID			TRIP SPIKE
Sample Matrix			Water
Eurofins Sample No.			S20-Se28056
Date Sampled			Sep 15, 2020
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons			
Naphthalene	1	%	94
TRH C6-C10	1	%	75
TRH C6-C9	1	%	74
BTEX			
Benzene	1	%	95
Ethylbenzene	1	%	91
m&p-Xylenes	1	%	96
o-Xylene	1	%	91
Toluene	1	%	110
Xylenes - Total	1	%	93
4-Bromofluorobenzene (surr.)	1	%	99

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Sep 28, 2020	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Melbourne	Sep 17, 2020	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Sep 17, 2020	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons	Melbourne	Sep 17, 2020	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Eurofins Suite B6 (filtered metals)			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Sep 28, 2020	
- Method: LTM-ORG-2010 TRH C6-C40			
Metals M8 filtered	Melbourne	Sep 17, 2020	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Phenols (IWRG 621)			
Phenols (Halogenated)	Melbourne	Sep 17, 2020	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (non-Halogenated)	Melbourne	Sep 17, 2020	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
TRH - 2013 NEPM Fractions (after silica gel clean-up)	Melbourne	Sep 28, 2020	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
TRH - 1999 NEPM Fractions (after silica gel clean-up)	Melbourne	Sep 28, 2020	7 Days
- Method: TRH C6-C36 (Silica Gel Cleanup) - MGT 100A			
Polycyclic Aromatic Hydrocarbons (Trace level)	Melbourne	Sep 17, 2020	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water (trace)			
Ammonia (as N)	Melbourne	Sep 17, 2020	28 Days
- Method: APHA 4500-NH3 Ammonia Nitrogen by FIA			
Cyanide (total)	Melbourne	Sep 17, 2020	14 Days
- Method: LTM-INO-4020 Total Free WAD Cyanide by CFA			
Ferrous Iron - Fe2+	Melbourne	Sep 17, 2020	7 Days
- Method: LTM-INO-4190 Ferrous Iron in Water by Discrete Analyser			
pH (at 25 °C)	Melbourne	Sep 17, 2020	0 Hours
- Method: LTM-GEN-7090 pH in water by ISE			
Total Suspended Solids Dried at 103–105°C	Melbourne	Sep 17, 2020	7 Days
- Method: LTM-INO-4070 Analysis of Suspended Solids in Water by Gravimetry			
Metals M8	Melbourne	Sep 21, 2020	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Heavy Metals (filtered)	Melbourne	Sep 17, 2020	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Hardness Set			
Calcium	Melbourne	Sep 17, 2020	180 Days
- Method:			
Eurofins Suite B11C: Na/K/Ca/Mg	Melbourne	Sep 17, 2020	180 Days
- Method: LTM-MET-3010 Alkali Metals by ICP-AES			
Magnesium	Melbourne	Sep 17, 2020	180 Days
- Method:			
Hardness mg equivalent CaCO3/L	Melbourne	Sep 17, 2020	28 Days
- Method:			
Eurofins Suite B11E: Cl/SO4/Alkalinity			
Chloride	Melbourne	Sep 17, 2020	28 Days
- Method: LTM-INO-4090 Chloride by Discrete Analyser			

Description	Testing Site	Extracted	Holding Time
Sulphate (as SO4)	Melbourne	Sep 17, 2020	28 Days
- Method: LTM-INO-4110 Sulfate by Discrete Analyser			
Alkalinity (speciated)	Melbourne	Sep 17, 2020	14 Days
- Method: LTM-INO-4250 Alkalinity by Electrometric Titration			
Total Dissolved Solids Dried at 180°C ± 2°C	Melbourne	Sep 17, 2020	7 Days
- Method: LTM-INO-4170 Total Dissolved Solids in Water			

eurofins | Environment Testing

ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name:	GHD Pty Ltd NSW	**Order No.:**	2127234
Address:	Level 15, 133 Castlereagh Street Sydney NSW 2000	**Report #:**	744463
		Phone:	02 9239 7100
		Fax:	02 9239 7199
Project Name:	CENTRAL		
Project ID:	2127234		

Received:	Sep 16, 2020 2:10 PM
Due:	Sep 23, 2020
Priority:	5 Day
Contact Name:	Terry Nham

Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail						Ammonia (as N)	Cyanide (total)	Ferrous Iron - Fe2+	Manganese (filtered)	pH (at 25 °C)	Total Suspended Solids Dried at 103–105°C	Metals M8	Phenols (IWRG 621)	Hardness Set	TRH (after Silica Gel cleanup)	Eurofins Suite B6 (filtered metals)	BTEXN and Volatile TRH	Eurofins Suite B11E: Cl/SO4/Alkalinity	BTEXN and Volatile TRH	Eurofins Suite B11C: Na/K/Ca/Mg	Polycyclic Aromatic Hydrocarbons (Trace level)	Total Dissolved Solids Dried at 180°C ± 2°C
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217																						
Brisbane Laboratory - NATA Site # 20794																						
Perth Laboratory - NATA Site # 23736																						
Newcastle Laboratory																						
External Laboratory																						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																	
1	CSM_BH02	Sep 14, 2020		Water	S20-Se28021	X	X	X	X	X	X		X	X	X	X		X		X	X	X
2	CSM_BH04	Sep 14, 2020		Water	S20-Se28041	X	X	X	X	X	X		X	X	X	X		X		X	X	X
3	CSM_BH06	Sep 14, 2020		Water	S20-Se28042	X	X	X	X	X	X		X	X	X	X		X		X	X	X
4	CSM_BH08	Sep 14, 2020		Water	S20-Se28043	X	X	X	X	X	X		X	X	X	X		X		X	X	X
5	CSM_BH09S	Sep 16, 2020		Water	S20-Se28044	X	X	X	X	X	X		X	X	X	X		X		X	X	X
6	CSM_BH10S	Sep 15, 2020		Water	S20-Se28045	X	X	X	X	X	X		X	X	X	X		X		X	X	X
7	SRT_BH047	Sep 15, 2020		Water	S20-Se28046	X	X	X	X	X	X		X	X	X	X		X		X	X	X
8	SRT_BH052	Sep 15, 2020		Water	S20-Se28047	X	X	X	X	X	X		X	X	X	X		X		X	X	X
9	GASW_BH10	Sep 14, 2020		Water	S20-Se28048	X	X	X	X	X	X		X	X	X	X		X		X	X	X

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ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: GHD Pty Ltd NSW
Address: Level 15, 133 Castlereagh Street
Sydney
NSW 2000

Project Name: CENTRAL
Project ID: 2127234

Order No.: 2127234
Report #: 744463
Phone: 02 9239 7100
Fax: 02 9239 7199

Received: Sep 16, 2020 2:10 PM
Due: Sep 23, 2020
Priority: 5 Day
Contact Name: Terry Nham

Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail						Ammonia (as N)	Cyanide (total)	Ferrous Iron - Fe2+	Manganese (filtered)	pH (at 25 °C)	Total Suspended Solids Dried at 103–105°C	Metals M8	Phenols (IWRG 621)	Hardness Set	TRH (after Silica Gel cleanup)	Eurofins Suite B6 (filtered metals)	BTEXN and Volatile TRH	Eurofins Suite B11E: Cl/SO4/Alkalinity	BTEXN and Volatile TRH	Eurofins Suite B11C: Na/K/Ca/Mg	Polycyclic Aromatic Hydrocarbons (Trace level)	Total Dissolved Solids Dried at 180°C ± 2°C
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217																						
Brisbane Laboratory - NATA Site # 20794																						
Perth Laboratory - NATA Site # 23736																						
10	GASW_BH11	Sep 16, 2020		Water	S20-Se28049	X	X	X	X	X	X		X	X	X	X		X		X	X	X
11	GASW_BH23	Sep 15, 2020		Water	S20-Se28050	X	X	X	X				X		X	X					X	
12	GASW_BH25A	Sep 16, 2020		Water	S20-Se28051	X	X	X	X	X	X		X	X	X	X		X		X	X	X
13	QC02	Sep 14, 2020		Water	S20-Se28052											X					X	
14	RB01	Sep 15, 2020		Water	S20-Se28053							X										
15	SRT_BH059	Sep 15, 2020		Water	S20-Se28054	X	X	X	X	X	X		X	X	X	X		X		X	X	X
16	TRIP BLANK	Sep 15, 2020		Water	S20-Se28055												X					
17	TRIP SPIKE	Sep 15, 2020		Water	S20-Se28056														X			
Test Counts						13	13	13	13	12	12	1	13	12	13	14	1	12	1	12	14	12

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total*	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.01			0.01	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
TRH - 2013 NEPM Fractions (after silica gel clean-up)							
TRH >C10-C16 (after silica gel clean-up)	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34 (after silica gel clean-up)	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40 (after silica gel clean-up)	mg/L	< 0.1			0.1	Pass	
Method Blank							
TRH - 1999 NEPM Fractions (after silica gel clean-up)							
TRH C10-C14 (after silica gel clean-up)	mg/L	< 0.05			0.05	Pass	
TRH C15-C28 (after silica gel clean-up)	mg/L	< 0.1			0.1	Pass	
TRH C29-C36 (after silica gel clean-up)	mg/L	< 0.1			0.1	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons (Trace level)							
Acenaphthene	mg/L	< 0.00001			0.00001	Pass	
Acenaphthylene	mg/L	< 0.00001			0.00001	Pass	
Anthracene	mg/L	< 0.00001			0.00001	Pass	
Benz(a)anthracene	mg/L	< 0.00001			0.00001	Pass	
Benzo(a)pyrene	mg/L	< 0.00001			0.00001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.00001			0.00001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.00001			0.00001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.00001			0.00001	Pass	
Chrysene	mg/L	< 0.00001			0.00001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.00001			0.00001	Pass	
Fluoranthene	mg/L	< 0.00001			0.00001	Pass	
Fluorene	mg/L	< 0.00001			0.00001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.00001			0.00001	Pass	
Naphthalene	mg/L	< 0.00001			0.00001	Pass	
Phenanthrene	mg/L	< 0.00001			0.00001	Pass	
Pyrene	mg/L	< 0.00001			0.00001	Pass	
Method Blank							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Chloride	mg/L	< 1			1	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Cyanide (total)	mg/L	< 0.004			0.004	Pass	
Sulphate (as SO4)	mg/L	< 5			5	Pass	
Total Dissolved Solids Dried at 180°C ± 2°C	mg/L	< 10			10	Pass	
Total Suspended Solids Dried at 103–105°C	mg/L	< 1			1	Pass	
Method Blank							
Alkalinity (speciated)							
Bicarbonate Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Carbonate Alkalinity (as CaCO3)	mg/L	< 10			10	Pass	
Hydroxide Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Total Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Method Blank							
Heavy Metals							
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
Method Blank							
Alkali Metals							
Calcium	mg/L	< 0.5			0.5	Pass	
Magnesium	mg/L	< 0.5			0.5	Pass	
Potassium	mg/L	< 0.5			0.5	Pass	
Sodium	mg/L	< 0.5			0.5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	109			70-130	Pass	
TRH C10-C14	%	110			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	85			70-130	Pass	
Toluene	%	117			70-130	Pass	
Ethylbenzene	%	90			70-130	Pass	
m&p-Xylenes	%	84			70-130	Pass	
Xylenes - Total*	%	84			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	114			70-130	Pass	
Naphthalene	%	96			70-130	Pass	
TRH C6-C10	%	98			70-130	Pass	
TRH C6-C10	%	112			70-130	Pass	
TRH >C10-C16	%	110			70-130	Pass	
LCS - % Recovery							
TRH - 2013 NEPM Fractions (after silica gel clean-up)							
TRH >C10-C16 (after silica gel clean-up)	%	110			70-130	Pass	
LCS - % Recovery							
TRH - 1999 NEPM Fractions (after silica gel clean-up)							
TRH C10-C14 (after silica gel clean-up)	%	110			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons (Trace level)							
Acenaphthene	%	92			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Acenaphthylene	%	87			70-130	Pass	
Anthracene	%	111			70-130	Pass	
Benz(a)anthracene	%	84			70-130	Pass	
Benzo(a)pyrene	%	92			70-130	Pass	
Benzo(b&j)fluoranthene	%	75			70-130	Pass	
Benzo(g.h.i)perylene	%	80			70-130	Pass	
Benzo(k)fluoranthene	%	104			70-130	Pass	
Chrysene	%	103			70-130	Pass	
Dibenz(a.h)anthracene	%	72			70-130	Pass	
Fluoranthene	%	93			70-130	Pass	
Fluorene	%	109			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	74			70-130	Pass	
Naphthalene	%	78			70-130	Pass	
Phenanthrene	%	106			70-130	Pass	
Pyrene	%	86			70-130	Pass	
LCS - % Recovery							
Chloride	%	114			70-130	Pass	
Cyanide (total)	%	97			70-130	Pass	
Sulphate (as SO4)	%	102			70-130	Pass	
Total Dissolved Solids Dried at 180°C ± 2°C	%	94			70-130	Pass	
Total Suspended Solids Dried at 103–105°C	%	103			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
				Result 1					
Ammonia (as N)	S20-Se28043	CP	%	98			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic (filtered)	S20-Se28043	CP	%	99			75-125	Pass	
Cadmium (filtered)	S20-Se28043	CP	%	92			75-125	Pass	
Chromium (filtered)	S20-Se28043	CP	%	93			75-125	Pass	
Copper (filtered)	S20-Se28043	CP	%	92			75-125	Pass	
Lead (filtered)	S20-Se28043	CP	%	95			75-125	Pass	
Manganese (filtered)	S20-Se28043	CP	%	62			75-125	Fail	Q08
Mercury (filtered)	S20-Se28043	CP	%	77			75-125	Pass	
Nickel (filtered)	S20-Se28043	CP	%	93			75-125	Pass	
Zinc (filtered)	S20-Se28043	CP	%	92			75-125	Pass	
Spike - % Recovery									
Alkali Metals				Result 1					
Calcium	S20-Se28043	CP	%	117			75-125	Pass	
Magnesium	S20-Se28043	CP	%	107			75-125	Pass	
Potassium	S20-Se28043	CP	%	96			75-125	Pass	
Sodium	S20-Se28043	CP	%	106			75-125	Pass	
Spike - % Recovery									
				Result 1					
Total Suspended Solids Dried at 103–105°C	S20-Se28044	CP	%	108			70-130	Pass	
Spike - % Recovery									
Alkalinity (speciated)				Result 1					
Bicarbonate Alkalinity (as CaCO3)	S20-Se28044	CP	%	80			70-130	Pass	
Total Alkalinity (as CaCO3)	S20-Se28044	CP	%	108			70-130	Pass	
Spike - % Recovery									
				Result 1					
Chloride	S20-Se28045	CP	%	99			70-130	Pass	
Sulphate (as SO4)	S20-Se28045	CP	%	80			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
				Result 1					
Chloride	S20-Se28048	CP	%	93			70-130	Pass	
Sulphate (as SO4)	S20-Se28048	CP	%	105			70-130	Pass	
Spike - % Recovery									
				Result 1					
Total Suspended Solids Dried at 103–105°C	S20-Se28051	CP	%	103			70-130	Pass	
Spike - % Recovery									
				Result 1					
Cyanide (total)	S20-Se28054	CP	%	100			70-130	Pass	
Ferrous Iron - Fe2+	S20-Se28054	CP	%	99			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic (filtered)	S20-Se28054	CP	%	100			75-125	Pass	
Cadmium (filtered)	S20-Se28054	CP	%	96			75-125	Pass	
Chromium (filtered)	S20-Se28054	CP	%	98			75-125	Pass	
Copper (filtered)	S20-Se28054	CP	%	80			75-125	Pass	
Lead (filtered)	S20-Se28054	CP	%	95			75-125	Pass	
Manganese (filtered)	S20-Se28054	CP	%	98			75-125	Pass	
Mercury (filtered)	S20-Se28054	CP	%	90			75-125	Pass	
Nickel (filtered)	S20-Se28054	CP	%	93			75-125	Pass	
Zinc (filtered)	S20-Se28054	CP	%	82			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
				Result 1	Result 2	RPD			
Ammonia (as N)	S20-Se28043	CP	mg/L	0.19	0.17	10	30%	Pass	
pH (at 25 °C)	S20-Se28043	CP	pH Units	6.9	6.8	pass	30%	Pass	
Total Dissolved Solids Dried at 180°C ± 2°C	S20-Se28043	CP	mg/L	280	260	9.0	30%	Pass	
Duplicate									
Alkalinity (speciated)				Result 1	Result 2	RPD			
Bicarbonate Alkalinity (as CaCO3)	S20-Se28043	CP	mg/L	94	87	8.0	30%	Pass	
Carbonate Alkalinity (as CaCO3)	S20-Se28043	CP	mg/L	< 10	< 10	<1	30%	Pass	
Hydroxide Alkalinity (as CaCO3)	S20-Se28043	CP	mg/L	< 20	< 20	<1	30%	Pass	
Total Alkalinity (as CaCO3)	S20-Se28043	CP	mg/L	94	87	8.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic (filtered)	S20-Se28043	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium (filtered)	S20-Se28043	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium (filtered)	S20-Se28043	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	S20-Se28043	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead (filtered)	S20-Se28043	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese (filtered)	S20-Se28043	CP	mg/L	0.30	0.29	2.0	30%	Pass	
Mercury (filtered)	S20-Se28043	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel (filtered)	S20-Se28043	CP	mg/L	0.004	0.004	2.0	30%	Pass	
Zinc (filtered)	S20-Se28043	CP	mg/L	0.012	0.011	4.0	30%	Pass	
Duplicate									
Alkali Metals				Result 1	Result 2	RPD			
Calcium	S20-Se28043	CP	mg/L	8.3	8.2	1.0	30%	Pass	
Magnesium	S20-Se28043	CP	mg/L	12	12	<1	30%	Pass	
Potassium	S20-Se28043	CP	mg/L	< 5	< 5	<1	30%	Pass	
Sodium	S20-Se28043	CP	mg/L	67	67	1.0	30%	Pass	

Duplicate									
				Result 1	Result 2	RPD			
Chloride	S20-Se28044	CP	mg/L	51	48	5.0	30%	Pass	
Sulphate (as SO4)	S20-Se28044	CP	mg/L	130	130	3.0	30%	Pass	
Total Suspended Solids Dried at 103–105°C	S20-Se28044	CP	mg/L	91	96	5.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Ferrous Iron - Fe2+	S20-Se28045	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Total Suspended Solids Dried at 103–105°C	S20-Se28051	CP	mg/L	520	540	3.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Cyanide (total)	S20-Se28054	CP	mg/L	< 0.004	< 0.004	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic (filtered)	S20-Se28054	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium (filtered)	S20-Se28054	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium (filtered)	S20-Se28054	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	S20-Se28054	CP	mg/L	0.13	0.13	1.0	30%	Pass	
Lead (filtered)	S20-Se28054	CP	mg/L	0.002	0.002	6.0	30%	Pass	
Manganese (filtered)	S20-Se28054	CP	mg/L	0.008	0.008	1.0	30%	Pass	
Mercury (filtered)	S20-Se28054	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel (filtered)	S20-Se28054	CP	mg/L	0.011	0.011	<1	30%	Pass	
Zinc (filtered)	S20-Se28054	CP	mg/L	0.13	0.13	1.0	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference.
R16	The LORs have been raised due to the high concentration of one or more analytes

Authorised By

Alena Bounkeua	Analytical Services Manager
Emily Rosenberg	Senior Analyst-Metal (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)
Scott Beddoes	Senior Analyst-Inorganic (VIC)



Glenn Jackson

General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

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ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2012716**	Page	: 1 of 5
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Contact	: Angus Harding
Address	: LEVEL 15, 133 CASTLEREAGH STREET SYDNEY NSW, AUSTRALIA 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9239 7100	Telephone	: +61 2 8784 8555
Project	: 2127234	Date Samples Received	: 15-Apr-2020 14:25
Order number	: ----	Date Analysis Commenced	: 16-Apr-2020
C-O-C number	: ----	Issue Date	: 22-Apr-2020 16:36
Sampler	: TERRY NHAM		
Site	:		
Quote number	: EN/005/19		
No. of samples received	: 1		
No. of samples analysed	: 1		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- Total PAH reported as the sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene and Benzo(g,h,i)perylene.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC01	----	----	----	----
				Client sampling date / time	14-Apr-2020 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2012716-001	--------	--------	--------	--------	
				Result	----	----	----	----	
EG020F: Dissolved Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L	**0.002**	----	----	----	----	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	----	----	
Chromium	7440-47-3	0.001	mg/L	**0.001**	----	----	----	----	
Copper	7440-50-8	0.001	mg/L	**0.017**	----	----	----	----	
Nickel	7440-02-0	0.001	mg/L	**0.012**	----	----	----	----	
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	----	
Zinc	7440-66-6	0.005	mg/L	**0.098**	----	----	----	----	
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----	
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L	<20	----	----	----	----	
C10 - C14 Fraction	----	50	µg/L	<50	----	----	----	----	
C15 - C28 Fraction	----	100	µg/L	<100	----	----	----	----	
C29 - C36 Fraction	----	50	µg/L	<50	----	----	----	----	
^ **C10 - C36 Fraction (sum)**	----	50	µg/L	<50	----	----	----	----	
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	----	----	----	----	
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	20	µg/L	<20	----	----	----	----	
>C10 - C16 Fraction	----	100	µg/L	<100	----	----	----	----	
>C16 - C34 Fraction	----	100	µg/L	<100	----	----	----	----	
>C34 - C40 Fraction	----	100	µg/L	<100	----	----	----	----	
^ **>C10 - C40 Fraction (sum)**	----	100	µg/L	<100	----	----	----	----	
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	100	µg/L	<100	----	----	----	----	
EP080: BTEXN									
Benzene	71-43-2	1	µg/L	<1	----	----	----	----	
Toluene	108-88-3	2	µg/L	<2	----	----	----	----	
Ethylbenzene	100-41-4	2	µg/L	<2	----	----	----	----	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	----	----	----	----	
ortho-Xylene	95-47-6	2	µg/L	<2	----	----	----	----	
^ **Total Xylenes**	----	2	µg/L	<2	----	----	----	----	
^ **Sum of BTEX**	----	1	µg/L	<1	----	----	----	----	
Naphthalene	91-20-3	5	µg/L	<5	----	----	----	----	

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC01	----	----	----	----
				Client sampling date / time	14-Apr-2020 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2012716-001	--------	--------	--------	--------
					Result	----	----	----	----
EP132B: Polynuclear Aromatic Hydrocarbons									
3-Methylcholanthrene	56-49-5	0.1	µg/L		<0.1	----	----	----	----
2-Methylnaphthalene	91-57-6	0.1	µg/L		<0.1	----	----	----	----
7.12-Dimethylbenz(a)anthracene	57-97-6	0.1	µg/L		<0.1	----	----	----	----
Acenaphthene	83-32-9	0.1	µg/L		<0.1	----	----	----	----
Acenaphthylene	208-96-8	0.1	µg/L		<0.1	----	----	----	----
Anthracene	120-12-7	0.1	µg/L		<0.1	----	----	----	----
Benz(a)anthracene	56-55-3	0.1	µg/L		<0.1	----	----	----	----
Benzo(a)pyrene	50-32-8	0.05	µg/L		<0.05	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.1	µg/L		<0.1	----	----	----	----
Benzo(e)pyrene	192-97-2	0.1	µg/L		<0.1	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.1	µg/L		<0.1	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.1	µg/L		<0.1	----	----	----	----
Chrysene	218-01-9	0.1	µg/L		<0.1	----	----	----	----
Coronene	191-07-1	0.1	µg/L		<0.1	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.1	µg/L		<0.1	----	----	----	----
Fluoranthene	206-44-0	0.1	µg/L		<0.1	----	----	----	----
Fluorene	86-73-7	0.1	µg/L		<0.1	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.1	µg/L		<0.1	----	----	----	----
Naphthalene	91-20-3	0.1	µg/L		<0.1	----	----	----	----
Perylene	198-55-0	0.1	µg/L		<0.1	----	----	----	----
Phenanthrene	85-01-8	0.1	µg/L		<0.1	----	----	----	----
Pyrene	129-00-0	0.1	µg/L		<0.1	----	----	----	----
^ Sum of PAHs	----	0.05	µg/L		<0.05	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.05	µg/L		<0.05	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**99.8**	----	----	----	----
Toluene-D8	2037-26-5	2	%		**102**	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		**84.9**	----	----	----	----
EP132T: Base/Neutral Extractable Surrogates									
2-Fluorobiphenyl	321-60-8	0.1	%		**73.4**	----	----	----	----
Anthracene-d10	1719-06-8	0.1	%		**88.3**	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%		**116**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**

Compound	CAS Number	Recovery Limits (%) Low	High
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128
EP132T: Base/Neutral Extractable Surrogates			
2-Fluorobiphenyl	321-60-8	43	135
Anthracene-d10	1719-06-8	48	138
4-Terphenyl-d14	1718-51-0	48	144

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **ES2012716**	Page	: 1 of 6
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Contact	: Angus Harding
Address	: LEVEL 15, 133 CASTLEREAGH STREET SYDNEY NSW, AUSTRALIA 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9239 7100	Telephone	: +61 2 8784 8555
Project	: 2127234	Date Samples Received	: 15-Apr-2020
Order number	: ----	Date Analysis Commenced	: 16-Apr-2020
C-O-C number	: ----	Issue Date	: 22-Apr-2020
Sampler	: TERRY NHAM		
Site	:		
Quote number	: EN/005/19		
No. of samples received	: 1		
No. of samples analysed	: 1		

ilac-MRA NATA
Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG020F: Dissolved Metals by ICP-MS (QC Lot: 2972370)									
ES2012688-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	0.0002	0.0002	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.001	0.001	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.010	0.010	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.007	0.007	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.034	0.034	0.00	No Limit
ES2012797-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 2972371)									
ES2012663-002	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
ES2012830-002	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2972070)									
ES2012890-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2972070)									
ES2012890-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EP080: BTEXN (QC Lot: 2972070)									
ES2012890-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP080: BTEXN (QC Lot: 2972070) - continued									
ES2012890-001	Anonymous	EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit

Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 2972370)								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	93.9	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	94.9	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	94.1	85.0	111
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	90.6	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	91.1	83.0	111
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	89.2	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	90.8	81.0	117
EG035F: Dissolved Mercury by FIMS (QCLot: 2972371)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	94.3	83.0	105
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2971853)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	82.7	55.8	112
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	84.6	71.6	113
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	74.3	56.0	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2972070)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	98.9	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2971853)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	89.8	57.9	119
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	89.7	62.5	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	84.3	61.5	121
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2972070)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	100	75.0	127
EP080: BTEXN (QCLot: 2972070)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	109	70.0	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	114	69.0	123
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	101	70.0	120
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	99.0	69.0	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	100	72.0	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	94.2	70.0	120
EP132B: Polynuclear Aromatic Hydrocarbons (QCLot: 2971850)								
EP132: 3-Methylcholanthrene	56-49-5	0.1	µg/L	<0.1	2 µg/L	101	60.0	120
EP132: 2-Methylnaphthalene	91-57-6	0.1	µg/L	<0.1	2 µg/L	# 57.2	59.0	123
EP132: 7.12-Dimethylbenz(a)anthracene	57-97-6	0.1	µg/L	<0.1	2 µg/L	88.6	36.0	144

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP132B: Polynuclear Aromatic Hydrocarbons (QCLot: 2971850) - continued								
EP132: Acenaphthene	83-32-9	0.1	µg/L	<0.1	2 µg/L	68.5	64.0	122
EP132: Acenaphthylene	208-96-8	0.1	µg/L	<0.1	2 µg/L	70.3	64.0	126
EP132: Anthracene	120-12-7	0.1	µg/L	<0.1	2 µg/L	85.5	65.0	127
EP132: Benz(a)anthracene	56-55-3	0.1	µg/L	<0.1	2 µg/L	96.9	64.0	130
EP132: Benzo(a)pyrene	50-32-8	0.05	µg/L	<0.05	2 µg/L	94.6	64.0	126
EP132: Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.1	µg/L	<0.1	2 µg/L	94.2	62.0	126
EP132: Benzo(e)pyrene	192-97-2	0.1	µg/L	<0.1	2 µg/L	92.7	62.0	126
EP132: Benzo(g.h.i)perylene	191-24-2	0.1	µg/L	<0.1	2 µg/L	96.4	56.0	126
EP132: Benzo(k)fluoranthene	207-08-9	0.1	µg/L	<0.1	2 µg/L	91.5	68.0	130
EP132: Chrysene	218-01-9	0.1	µg/L	<0.1	2 µg/L	92.6	66.0	130
EP132: Coronene	191-07-1	0.1	µg/L	<0.1	2 µg/L	102	35.0	133
EP132: Dibenz(a.h)anthracene	53-70-3	0.1	µg/L	<0.1	2 µg/L	97.5	58.0	128
EP132: Fluoranthene	206-44-0	0.1	µg/L	<0.1	2 µg/L	92.2	65.0	127
EP132: Fluorene	86-73-7	0.1	µg/L	<0.1	2 µg/L	77.5	64.0	124
EP132: Indeno(1.2.3.cd)pyrene	193-39-5	0.1	µg/L	<0.1	2 µg/L	98.6	57.0	127
EP132: Naphthalene	91-20-3	0.1	µg/L	<0.1	2 µg/L	# 51.2	54.0	128
EP132: Perylene	198-55-0	0.1	µg/L	<0.1	2 µg/L	91.9	66.0	130
EP132: Phenanthrene	85-01-8	0.1	µg/L	<0.1	2 µg/L	85.0	65.0	129
EP132: Pyrene	129-00-0	0.1	µg/L	<0.1	2 µg/L	90.9	66.0	128

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EG020F: Dissolved Metals by ICP-MS (QCLot: 2972370)							
ES2012663-003	Anonymous	EG020A-F: Arsenic	7440-38-2	1 mg/L	108	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	96.8	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	99.8	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	100	70.0	130
		EG020A-F: Lead	7439-92-1	1 mg/L	98.4	70.0	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	99.8	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	98.1	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 2972371)							
ES2012663-001	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	80.6	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2972070)							
ES2012890-001	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	112	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2972070)							
ES2012890-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	111	70.0	130
EP080: BTEXN (QCLot: 2972070)							
ES2012890-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	118	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	110	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	119	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	116	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	118	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	105	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2012716**	Page	: 1 of 5
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Telephone	: +61 2 8784 8555
Project	: 2127234	Date Samples Received	: 15-Apr-2020
Site	:	Issue Date	: 22-Apr-2020
Sampler	: TERRY NHAM	No. of samples received	: 1
Order number	: ----	No. of samples analysed	: 1

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Matrix Spike outliers occur.**
- **Laboratory Control outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP132B: Polynuclear Aromatic Hydrocarbons	QC-2971850-002	----	**2-Methylnaphthalene**	91-57-6	57.2 %	59.0-123%	**Recovery less than lower control limit**
EP132B: Polynuclear Aromatic Hydrocarbons	QC-2971850-002	----	**Naphthalene**	91-20-3	51.2 %	54.0-128%	**Recovery less than lower control limit**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Method	Count QC	Count Regular	Rate (%) Actual	Rate (%) Expected	Quality Control Specification
Laboratory Duplicates (DUP)					
Semivolatile Compounds by GCMS(SIM - Ultra-trace)	0	1	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	1	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
Semivolatile Compounds by GCMS(SIM - Ultra-trace)	0	1	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	1	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / *Container / Client Sample ID(s)*	*Sample Date*	*Extraction / Preparation* Date extracted	Due for extraction	Evaluation	*Analysis* Date analysed	Due for analysis	Evaluation
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)							
QC01	**14-Apr-2020**	**----**	----	----	**17-Apr-2020**	11-Oct-2020	✓
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)							
QC01	**14-Apr-2020**	**----**	----	----	**17-Apr-2020**	12-May-2020	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071)							
QC01	**14-Apr-2020**	**17-Apr-2020**	21-Apr-2020	✓	**21-Apr-2020**	27-May-2020	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
QC01	**14-Apr-2020**	**16-Apr-2020**	28-Apr-2020	✓	**16-Apr-2020**	28-Apr-2020	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071)							
QC01	**14-Apr-2020**	**17-Apr-2020**	21-Apr-2020	✓	**21-Apr-2020**	27-May-2020	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
QC01	**14-Apr-2020**	**16-Apr-2020**	28-Apr-2020	✓	**16-Apr-2020**	28-Apr-2020	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080)							
QC01	**14-Apr-2020**	**16-Apr-2020**	28-Apr-2020	✓	**16-Apr-2020**	28-Apr-2020	✓
EP132B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP132)							
QC01	**14-Apr-2020**	**17-Apr-2020**	21-Apr-2020	✓	**21-Apr-2020**	27-May-2020	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Dissolved Mercury by FIMS	EG035F	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	10	**20.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Compounds by GCMS(SIM - Ultra-trace)	EP132	0	1	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	1	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	5	**20.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Dissolved Mercury by FIMS	EG035F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Compounds by GCMS(SIM - Ultra-trace)	EP132	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Dissolved Mercury by FIMS	EG035F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Compounds by GCMS(SIM - Ultra-trace)	EP132	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Dissolved Mercury by FIMS	EG035F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Compounds by GCMS(SIM - Ultra-trace)	EP132	0	1	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	1	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260D Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)
Semivolatile Compounds by GCMS(SIM - Ultra-trace)	EP132	WATER	In house: Referenced to USEPA 3640 (GPC Cleanup), 8270E GCMS Capiliary column, SIM mode. This method is compliant with NEPM (2013) Schedule B(3)

Preparation Methods	Method	Matrix	Method Descriptions
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Sep. Funnel Extraction /Acetylation of Phenolic Compounds	ORG14-AC	WATER	In house: Referenced to USEPA 3510 (Extraction) / In-house (Acetylation): A 1L sample is extracted into dichloromethane and concentrated to 1 mL with echange into cyclohexane. Phenolic compounds are reacted with acetic anhydride to yield phenyl acetates suitable for ultra-trace analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2017182**	Page	: 1 of 5
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Contact	: Angus Harding
Address	: LEVEL 15, 133 CASTLEREAGH STREET SYDNEY NSW, AUSTRALIA 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9239 7100	Telephone	: +61 2 8784 8555
Project	: 2127234	Date Samples Received	: 19-May-2020 14:30
Order number	: ----	Date Analysis Commenced	: 22-May-2020
C-O-C number	: ----	Issue Date	: 26-May-2020 17:35
Sampler	: TERRY NHAM		
Site	: 21-27234 Central		
Quote number	: EN/005/19		
No. of samples received	: 1		
No. of samples analysed	: 1		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- Total PAH reported as the sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene and Benzo(g,h,i)perylene.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC01	----	----	----	----
				Client sampling date / time	18-May-2020 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2017182-001	--------	--------	--------	--------
					Result	----	----	----	----
EG020F: Dissolved Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L		**0.002**	----	----	----	----
Nickel	7440-02-0	0.001	mg/L		**0.005**	----	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	----	----	----	----
Zinc	7440-66-6	0.005	mg/L		**0.023**	----	----	----	----
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	----	----	----	----
C10 - C14 Fraction	----	50	µg/L		<50	----	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	----	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	----	----	----	----
^ **C10 - C36 Fraction (sum)**	----	50	µg/L		<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	----	----	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	20	µg/L		<20	----	----	----	----
>C10 - C16 Fraction	----	100	µg/L		<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	----	----	----	----
^ **>C10 - C40 Fraction (sum)**	----	100	µg/L		<100	----	----	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	100	µg/L		<100	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	----	----	----	----
Toluene	108-88-3	2	µg/L		<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	----	----	----	----
^ **Total Xylenes**	----	2	µg/L		<2	----	----	----	----
^ **Sum of BTEX**	----	1	µg/L		<1	----	----	----	----
Naphthalene	91-20-3	5	µg/L		<5	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC01	----	----	----	----
				Client sampling date / time	18-May-2020 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2017182-001	--------	--------	--------	--------
					Result	----	----	----	----
EP132B: Polynuclear Aromatic Hydrocarbons									
3-Methylcholanthrene	56-49-5	0.1	µg/L		<0.1	----	----	----	----
2-Methylnaphthalene	91-57-6	0.1	µg/L		<0.1	----	----	----	----
7.12-Dimethylbenz(a)anthracene	57-97-6	0.1	µg/L		<0.1	----	----	----	----
Acenaphthene	83-32-9	0.1	µg/L		<0.1	----	----	----	----
Acenaphthylene	208-96-8	0.1	µg/L		<0.1	----	----	----	----
Anthracene	120-12-7	0.1	µg/L		<0.1	----	----	----	----
Benz(a)anthracene	56-55-3	0.1	µg/L		<0.1	----	----	----	----
Benzo(a)pyrene	50-32-8	0.05	µg/L		<0.05	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.1	µg/L		<0.1	----	----	----	----
Benzo(e)pyrene	192-97-2	0.1	µg/L		<0.1	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.1	µg/L		<0.1	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.1	µg/L		<0.1	----	----	----	----
Chrysene	218-01-9	0.1	µg/L		<0.1	----	----	----	----
Coronene	191-07-1	0.1	µg/L		<0.1	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.1	µg/L		<0.1	----	----	----	----
Fluoranthene	206-44-0	0.1	µg/L		<0.1	----	----	----	----
Fluorene	86-73-7	0.1	µg/L		<0.1	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.1	µg/L		<0.1	----	----	----	----
Naphthalene	91-20-3	0.1	µg/L		<0.1	----	----	----	----
Perylene	198-55-0	0.1	µg/L		<0.1	----	----	----	----
Phenanthrene	85-01-8	0.1	µg/L		<0.1	----	----	----	----
Pyrene	129-00-0	0.1	µg/L		<0.1	----	----	----	----
^ Sum of PAHs	----	0.05	µg/L		<0.05	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.05	µg/L		<0.05	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**94.4**	----	----	----	----
Toluene-D8	2037-26-5	2	%		**108**	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		**107**	----	----	----	----
EP132T: Base/Neutral Extractable Surrogates									
2-Fluorobiphenyl	321-60-8	0.1	%		**65.6**	----	----	----	----
Anthracene-d10	1719-06-8	0.1	%		**74.6**	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%		**87.6**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**

Compound	CAS Number	Recovery Limits (%) Low	High
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128
EP132T: Base/Neutral Extractable Surrogates			
2-Fluorobiphenyl	321-60-8	43	135
Anthracene-d10	1719-06-8	48	138
4-Terphenyl-d14	1718-51-0	48	144

QUALITY CONTROL REPORT

Work Order	: **ES2017182**	Page	: 1 of 8
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Contact	: Angus Harding
Address	: LEVEL 15, 133 CASTLEREAGH STREET SYDNEY NSW, AUSTRALIA 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9239 7100	Telephone	: +61 2 8784 8555
Project	: 2127234	Date Samples Received	: 19-May-2020
Order number	: ----	Date Analysis Commenced	: 22-May-2020
C-O-C number	: ----	Issue Date	: 26-May-2020
Sampler	: TERRY NHAM		
Site	: 21-27234 Central		
Quote number	: EN/005/19		
No. of samples received	: 1		
No. of samples analysed	: 1		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG020F: Dissolved Metals by ICP-MS (QC Lot: 3037265)									
ES2017037-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.001	0.001	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
ES2017240-005	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.003	0.002	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.001	<0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.004	0.003	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.087	0.086	1.16	0% - 50%
EG035F: Dissolved Mercury by FIMS (QC Lot: 3037263)									
ES2017099-001	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EW2002395-002	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3031806)									
ES2017046-015	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
ES2017046-023	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3032986)									
ES2017251-014	Anonymous	EP071: C15 - C28 Fraction	----	100	µg/L	370	280	27.5	No Limit
		EP071: C10 - C14 Fraction	----	50	µg/L	210	140	41.9	No Limit
		EP071: C29 - C36 Fraction	----	50	µg/L	<50	<50	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3031806)									
ES2017046-015	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
ES2017046-023	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3032986)									
ES2017251-014	Anonymous	EP071: >C10 - C16 Fraction	----	100	µg/L	260	190	30.9	No Limit
		EP071: >C16 - C34 Fraction	----	100	µg/L	280	210	27.6	No Limit
		EP071: >C34 - C40 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
EP080: BTEXN (QC Lot: 3031806)									
ES2017046-015	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
ES2017046-023	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
EP132B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3036434)									
EM2008397-001	Anonymous	EP132: Benzo(a)pyrene	50-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP132: 3-Methylcholanthrene	56-49-5	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: 2-Methylnaphthalene	91-57-6	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: 7.12-Dimethylbenz(a)anthracene	57-97-6	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Acenaphthene	83-32-9	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Acenaphthylene	208-96-8	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Anthracene	120-12-7	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Benz(a)anthracene	56-55-3	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Benzo(e)pyrene	192-97-2	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Benzo(g.h.i)perylene	191-24-2	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Benzo(k)fluoranthene	207-08-9	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Chrysene	218-01-9	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Coronene	191-07-1	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Dibenz(a.h)anthracene	53-70-3	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Fluoranthene	206-44-0	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Fluorene	86-73-7	0.1	µg/L	<0.1	<0.1	0.00	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP132B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3036434) - continued									
EM2008397-001	Anonymous	EP132: Indeno(1.2.3.cd)pyrene	193-39-5	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Naphthalene	91-20-3	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Perylene	198-55-0	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Phenanthrene	85-01-8	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Pyrene	129-00-0	0.1	µg/L	<0.1	<0.1	0.00	No Limit

Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 3037265)								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	98.2	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	94.3	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	93.5	85.0	111
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	93.9	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	92.2	83.0	111
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	93.6	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	98.8	81.0	117
EG035F: Dissolved Mercury by FIMS (QCLot: 3037263)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	95.3	83.0	105
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3031806)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	79.3	75.0	127
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3032986)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	80.9	55.8	112
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	104	71.6	113
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	106	56.0	121
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3031806)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	83.0	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3032986)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	80.4	57.9	119
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	92.2	62.5	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	86.2	61.5	121
EP080: BTEXN (QCLot: 3031806)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	89.8	70.0	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	92.5	69.0	123
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	95.3	70.0	120
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	92.3	69.0	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	95.6	72.0	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	95.5	70.0	120
EP132B: Polynuclear Aromatic Hydrocarbons (QCLot: 3036434)								
EP132: 3-Methylcholanthrene	56-49-5	0.1	µg/L	<0.1	2 µg/L	75.7	60.0	120
EP132: 2-Methylnaphthalene	91-57-6	0.1	µg/L	<0.1	2 µg/L	62.4	59.0	123
EP132: 7.12-Dimethylbenz(a)anthracene	57-97-6	0.1	µg/L	<0.1	2 µg/L	67.4	36.0	144

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP132B: Polynuclear Aromatic Hydrocarbons (QCLot: 3036434) - continued								
EP132: Acenaphthene	83-32-9	0.1	µg/L	<0.1	2 µg/L	69.4	64.0	122
EP132: Acenaphthylene	208-96-8	0.1	µg/L	<0.1	2 µg/L	70.0	64.0	126
EP132: Anthracene	120-12-7	0.1	µg/L	<0.1	2 µg/L	74.5	65.0	127
EP132: Benz(a)anthracene	56-55-3	0.1	µg/L	<0.1	2 µg/L	83.3	64.0	130
EP132: Benzo(a)pyrene	50-32-8	0.05	µg/L	<0.05	2 µg/L	81.1	64.0	126
EP132: Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.1	µg/L	<0.1	2 µg/L	82.8	62.0	126
EP132: Benzo(e)pyrene	192-97-2	0.1	µg/L	<0.1	2 µg/L	81.7	62.0	126
EP132: Benzo(g.h.i)perylene	191-24-2	0.1	µg/L	<0.1	2 µg/L	81.3	56.0	126
EP132: Benzo(k)fluoranthene	207-08-9	0.1	µg/L	<0.1	2 µg/L	80.6	68.0	130
EP132: Chrysene	218-01-9	0.1	µg/L	<0.1	2 µg/L	81.0	66.0	130
EP132: Coronene	191-07-1	0.1	µg/L	<0.1	2 µg/L	79.0	35.0	133
EP132: Dibenz(a.h)anthracene	53-70-3	0.1	µg/L	<0.1	2 µg/L	81.1	58.0	128
EP132: Fluoranthene	206-44-0	0.1	µg/L	<0.1	2 µg/L	80.1	65.0	127
EP132: Fluorene	86-73-7	0.1	µg/L	<0.1	2 µg/L	72.3	64.0	124
EP132: Indeno(1.2.3.cd)pyrene	193-39-5	0.1	µg/L	<0.1	2 µg/L	81.8	57.0	127
EP132: Naphthalene	91-20-3	0.1	µg/L	<0.1	2 µg/L	59.3	54.0	128
EP132: Perylene	198-55-0	0.1	µg/L	<0.1	2 µg/L	80.0	66.0	130
EP132: Phenanthrene	85-01-8	0.1	µg/L	<0.1	2 µg/L	74.9	65.0	129
EP132: Pyrene	129-00-0	0.1	µg/L	<0.1	2 µg/L	78.8	66.0	128

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EG020F: Dissolved Metals by ICP-MS (QCLot: 3037265)							
ES2017095-001	Anonymous	EG020A-F: Arsenic	7440-38-2	1 mg/L	92.8	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	89.4	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	91.0	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	95.9	70.0	130
		EG020A-F: Lead	7439-92-1	1 mg/L	95.1	70.0	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	90.4	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	91.0	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 3037263)							
ES2017114-001	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	92.4	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3031806)							
ES2017046-015	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	98.1	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3032986)							
ES2017251-013	Anonymous	EP071: C10 - C14 Fraction	----	200 µg/L	103	70.0	130
		EP071: C15 - C28 Fraction	----	250 µg/L	111	71.0	130
		EP071: C29 - C36 Fraction	----	200 µg/L	86.6	67.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3031806)							
ES2017046-015	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	98.3	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3032986)							
ES2017251-013	Anonymous	EP071: >C10 - C16 Fraction	----	250 µg/L	95.2	70.0	130
		EP071: >C16 - C34 Fraction	----	350 µg/L	103	75.0	130
		EP071: >C34 - C40 Fraction	----	150 µg/L	110	67.0	130
EP080: BTEXN (QCLot: 3031806)							
ES2017046-015	Anonymous	EP080: Benzene	71-43-2	25 µg/L	106	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	103	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	106	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	105	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	106	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	83.3	70.0	130
EP132B: Polynuclear Aromatic Hydrocarbons (QCLot: 3036434)							
EM2008397-001	Anonymous	EP132: 3-Methylcholanthrene	56-49-5	2 µg/L	71.6	59.0	115
		EP132: 2-Methylnaphthalene	91-57-6	2 µg/L	62.2	46.0	120
		EP132: 7.12-Dimethylbenz(a)anthracene	57-97-6	2 µg/L	56.8	21.0	135
		EP132: Acenaphthene	83-32-9	2 µg/L	66.9	62.0	114
		EP132: Acenaphthylene	208-96-8	2 µg/L	67.4	61.0	119
		EP132: Anthracene	120-12-7	2 µg/L	70.0	68.0	116
		EP132: Benz(a)anthracene	56-55-3	2 µg/L	75.5	67.0	122
		EP132: Benzo(a)pyrene	50-32-8	2 µg/L	73.2	72.0	114
		EP132: Benzo(b+j)fluoranthene	205-99-2 205-82-3	2 µg/L	74.8	69.0	119
		EP132: Benzo(e)pyrene	192-97-2	2 µg/L	73.7	71.0	119
		EP132: Benzo(g.h.i)perylene	191-24-2	2 µg/L	73.1	49.0	133
		EP132: Benzo(k)fluoranthene	207-08-9	2 µg/L	72.2	71.0	124
		EP132: Chrysene	218-01-9	2 µg/L	73.8	70.0	118
		EP132: Coronene	191-07-1	2 µg/L	70.4	29.0	138
		EP132: Dibenz(a.h)anthracene	53-70-3	2 µg/L	72.8	60.0	122
		EP132: Fluoranthene	206-44-0	2 µg/L	73.0	65.0	121
		EP132: Fluorene	86-73-7	2 µg/L	69.5	63.0	118

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP132B: Polynuclear Aromatic Hydrocarbons (QCLot: 3036434) - continued							
EM2008397-001	Anonymous	EP132: Indeno(1.2.3.cd)pyrene	193-39-5	2 µg/L	73.4	57.0	123
		EP132: Naphthalene	91-20-3	2 µg/L	60.2	53.0	115
		EP132: Perylene	198-55-0	2 µg/L	72.2	71.0	118
		EP132: Phenanthrene	85-01-8	2 µg/L	70.3	67.0	120
		EP132: Pyrene	129-00-0	2 µg/L	72.2	70.0	117

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2017182**	Page	: 1 of 4
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Telephone	: +61 2 8784 8555
Project	: 2127234	Date Samples Received	: 19-May-2020
Site	: 21-27234 Central	Issue Date	: 26-May-2020
Sampler	: TERRY NHAM	No. of samples received	: 1
Order number	: ----	No. of samples analysed	: 1

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
TRH - Semivolatile Fraction	1	15	6.67	10.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / ***Container*** / Client Sample ID(s)	***Sample Date***	*Extraction / Preparation*			*Analysis*		
		Date extracted	*Due for extraction*	*Evaluation*	***Date analysed***	*Due for analysis*	*Evaluation*
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)							
QC01	**18-May-2020**	**----**	----	----	**23-May-2020**	14-Nov-2020	✓
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)							
QC01	**18-May-2020**	**----**	----	----	**25-May-2020**	15-Jun-2020	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071)							
QC01	**18-May-2020**	**22-May-2020**	25-May-2020	✓	**26-May-2020**	01-Jul-2020	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
QC01	**18-May-2020**	**22-May-2020**	01-Jun-2020	✓	**22-May-2020**	01-Jun-2020	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071)							
QC01	**18-May-2020**	**22-May-2020**	25-May-2020	✓	**26-May-2020**	01-Jul-2020	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
QC01	**18-May-2020**	**22-May-2020**	01-Jun-2020	✓	**22-May-2020**	01-Jun-2020	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080)							
QC01	**18-May-2020**	**22-May-2020**	01-Jun-2020	✓	**22-May-2020**	01-Jun-2020	✓
EP132B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP132)							
QC01	**18-May-2020**	**23-May-2020**	25-May-2020	✓	**25-May-2020**	02-Jul-2020	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Dissolved Mercury by FIMS	EG035F	2	10	**20.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	7	**28.57**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Compounds by GCMS(SIM - Ultra-trace)	EP132	1	3	**33.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	15	**6.67**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Dissolved Mercury by FIMS	EG035F	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Compounds by GCMS(SIM - Ultra-trace)	EP132	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Dissolved Mercury by FIMS	EG035F	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Compounds by GCMS(SIM - Ultra-trace)	EP132	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Dissolved Mercury by FIMS	EG035F	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Compounds by GCMS(SIM - Ultra-trace)	EP132	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260D Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)
Semivolatile Compounds by GCMS(SIM - Ultra-trace)	EP132	WATER	In house: Referenced to USEPA 3640 (GPC Cleanup), 8270E GCMS Capiliary column, SIM mode. This method is compliant with NEPM (2013) Schedule B(3)

Preparation Methods	Method	Matrix	Method Descriptions
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Sep. Funnel Extraction /Acetylation of Phenolic Compounds	ORG14-AC	WATER	In house: Referenced to USEPA 3510 (Extraction) / In-house (Acetylation): A 1L sample is extracted into dichloromethane and concentrated to 1 mL with echange into cyclohexane. Phenolic compounds are reacted with acetic anhydride to yield phenyl acetates suitable for ultra-trace analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging.

CHAIN OF CUSTODY

ALS Environmental

ALS Laboratory: please tick →

☐ADELAIDE 21 Burma Road Pooraka SA 5095 Ph: 08 8359 0890 E: adelaide@alsglobal.com

☐BRISBANE 32 Shand Street Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com

☐GLADSTONE 46 Callemondah Drive Clinton QLD 4680 Ph: 07 7471 5600 E: gladstone@alsglobal.com

☐MACKAY 78 Harbour Road Mackay QLD 4740 Ph: 07 4944 0177 E: mackay@alsglobal.com

☐MELBOURNE 2-4 Westall Road Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsglobal.com

☐MUDGEE 27 Sydney Road Mudgee NSW 2850 Ph: 02 6372 6735 E: mudgee.mail@alsglobal.com

☐NEWCASTLE 5 Rose Gum Road Warabrook NSW 2304 Ph: 02 4968 9433 E: samples.newcastle@alsglobal.com

☐NOWRA 4/13 Geary Place North Nowra NSW 2541 Ph: 024423 2063 E: nowra@alsglobal.com

☐PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com

☐SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com

☐TOWNSVILLE 14-15 Desma Court Bohle QLD 4818 Ph: 07 4796 0500 E: townesville.environmental@alsglobal.com

☐WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph. 02 4225 3125 E: portkembla@alsglobal.com

CLIENT: GHD Pty Ltd	**TURNAROUND REQUIREMENTS:** ☒ Standard TAT (List due date):	**FOR LABORATORY USE ONLY (Circle)**
OFFICE: Sydney	(Standard TAT may be longer for some tests e.g., Ultra Trace Organics) ☐ Non Standard or urgent TAT (List due date):	Custody Seal Intact? Yes No N/A
PROJECT: 21-27234 Central	**ALS QUOTE NO.:** EN/005/19	Free ice / frozen ice bricks present upon receipt? Yes No N/A
ORDER NUMBER:		Random Sample Temperature on Receipt: 4.5 °C
PROJECT MANAGER: Henry Luo	**CONTACT PH:** 02 9239 7044 / 0414 090 002	Other comment:
SAMPLER: Terry Nham	**SAMPLER MOBILE:** 0403 251 883	
COC emailed to ALS? (YES / NO)	**EDD FORMAT (or default):**	
Email Reports to: henry.luo@ghd.com terry.nham@ghd.com		
Email Invoice to (will default to PM if no other addresses are listed):		

COC SEQUENCE NUMBER (Circle)

COC: 1 2 3 4 5 6 7

OF: 1 2 3 4 5 6 7

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Terry Nham (GHD)	Sep M.		
DATE/TIME: 19/5/2020	DATE/TIME: 19/05/2020 1430	DATE/TIME:	DATE/TIME: 19/5/20 1845

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).		
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS	TRH / BTEXN / 8 Metals (W-5)	PAH - Ultra Trace	
1	QC01	18/5/2020	Water		9	X	X	
				TOTAL				

Environmental Division Sydney
Work Order Reference
ES2017182

Telephone : +61-2-8784 8555

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass;
Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2021404**	Page	: 1 of 9
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Contact	: Angus Harding
Address	: LEVEL 15, 133 CASTLEREAGH STREET SYDNEY NSW, AUSTRALIA 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9239 7100	Telephone	: +61 2 8784 8555
Project	: 2127234	Date Samples Received	: 19-Jun-2020 15:00
Order number	: 2127234	Date Analysis Commenced	: 22-Jun-2020
C-O-C number	: ----	Issue Date	: 30-Jun-2020 15:22
Sampler	: TERRY NHAM		
Site	:		
Quote number	: EN/005/19		
No. of samples received	: 10		
No. of samples analysed	: 10		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- Total PAH reported as the sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene and Benzo(g,h,i)perylene.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC01	CSM_BH02	CSM_BH04	CSM_BH06	CSM_BH08
				Client sampling date / time	17-Jun-2020 00:00	18-Jun-2020 00:00	18-Jun-2020 00:00	18-Jun-2020 00:00	17-Jun-2020 00:00
Compound	CAS Number	LOR	Unit		ES2021404-001	ES2021404-002	ES2021404-003	ES2021404-004	ES2021404-005
					Result	Result	Result	Result	Result
EG020F: Dissolved Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L		<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L		**0.010**	----	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	----	----	----	----
Zinc	7440-66-6	0.005	mg/L		**0.016**	----	----	----	----
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	----	----	----	----
C10 - C14 Fraction	----	50	µg/L		<50	----	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	----	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	----	----	----	----
^ **C10 - C36 Fraction (sum)**	----	50	µg/L		<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	----	----	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	20	µg/L		<20	----	----	----	----
>C10 - C16 Fraction	----	100	µg/L		<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	----	----	----	----
^ **>C10 - C40 Fraction (sum)**	----	100	µg/L		<100	----	----	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	100	µg/L		<100	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	----	----	----	----
Toluene	108-88-3	2	µg/L		<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	----	----	----	----
^ **Total Xylenes**	----	2	µg/L		<2	----	----	----	----
^ **Sum of BTEX**	----	1	µg/L		<1	----	----	----	----
Naphthalene	91-20-3	5	µg/L		<5	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC01	CSM_BH02	CSM_BH04	CSM_BH06	CSM_BH08
				Client sampling date / time	17-Jun-2020 00:00	18-Jun-2020 00:00	18-Jun-2020 00:00	18-Jun-2020 00:00	17-Jun-2020 00:00
Compound	CAS Number	LOR	Unit		ES2021404-001	ES2021404-002	ES2021404-003	ES2021404-004	ES2021404-005
					Result	Result	Result	Result	Result
EP131A: Organochlorine Pesticides									
Aldrin	309-00-2	0.001	µg/L		----	<0.001	<0.001	<0.001	<0.001
alpha-BHC	319-84-6	0.002	µg/L		----	<0.002	<0.002	<0.002	<0.002
beta-BHC	319-85-7	0.002	µg/L		----	<0.002	<0.002	<0.002	<0.002
delta-BHC	319-86-8	0.002	µg/L		----	<0.002	<0.002	<0.002	<0.002
4.4`-DDD	72-54-8	0.002	µg/L		----	<0.002	<0.002	<0.002	<0.002
4.4`-DDE	72-55-9	0.002	µg/L		----	<0.002	<0.002	<0.002	<0.002
4.4`-DDT	50-29-3	0.002	µg/L		----	<0.002	<0.002	<0.002	<0.002
Dieldrin	60-57-1	0.002	µg/L		----	<0.002	<0.002	<0.002	<0.002
alpha-Endosulfan	959-98-8	0.002	µg/L		----	<0.002	<0.002	<0.002	<0.002
beta-Endosulfan	33213-65-9	0.002	µg/L		----	<0.002	<0.002	<0.002	<0.002
Endosulfan sulfate	1031-07-8	0.002	µg/L		----	<0.002	<0.002	<0.002	<0.002
^ Sum of alpha- and beta-Endosulfan	115-29-7	0.002	µg/L		----	<0.002	<0.002	<0.002	<0.002
Endrin	72-20-8	0.002	µg/L		----	<0.002	<0.002	<0.002	<0.002
Endrin aldehyde	7421-93-4	0.002	µg/L		----	<0.002	<0.002	<0.002	<0.002
Endrin ketone	53494-70-5	0.002	µg/L		----	<0.002	<0.002	<0.002	<0.002
Heptachlor	76-44-8	0.002	µg/L		----	<0.002	<0.002	<0.002	<0.002
Heptachlor epoxide	1024-57-3	0.002	µg/L		----	<0.002	<0.002	<0.002	<0.002
Hexachlorobenzene (HCB)	118-74-1	0.002	µg/L		----	<0.002	<0.002	<0.002	<0.002
gamma-BHC (Lindane)	58-89-9	0.002	µg/L		----	<0.002	<0.002	<0.002	<0.002
Methoxychlor	72-43-5	0.002	µg/L		----	<0.002	<0.002	<0.002	<0.002
cis-Chlordane	5103-71-9	0.001	µg/L		----	<0.001	<0.001	<0.001	<0.001
trans-Chlordane	5103-74-2	0.001	µg/L		----	<0.001	<0.001	<0.001	<0.001
^ Sum of cis- and trans-Chlordane	57-74-9	0.001	µg/L		----	<0.001	<0.001	<0.001	<0.001
Oxychlordane	27304-13-8	0.002	µg/L		----	<0.002	<0.002	<0.002	<0.002
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.002	µg/L		----	<0.002	<0.002	<0.002	<0.002
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.002	µg/L		----	<0.002	<0.002	<0.002	<0.002
EP132B: Polynuclear Aromatic Hydrocarbons									
3-Methylcholanthrene	56-49-5	0.1	µg/L		<0.1	----	----	----	----
2-Methylnaphthalene	91-57-6	0.1	µg/L		<0.1	----	----	----	----
7.12-Dimethylbenz(a)anthracene	57-97-6	0.1	µg/L		<0.1	----	----	----	----
Acenaphthene	83-32-9	0.1	µg/L		<0.1	----	----	----	----
Acenaphthylene	208-96-8	0.1	µg/L		<0.1	----	----	----	----
Anthracene	120-12-7	0.1	µg/L		<0.1	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC01	CSM_BH02	CSM_BH04	CSM_BH06	CSM_BH08
				Client sampling date / time	17-Jun-2020 00:00	18-Jun-2020 00:00	18-Jun-2020 00:00	18-Jun-2020 00:00	17-Jun-2020 00:00
Compound	CAS Number	LOR	Unit		ES2021404-001	ES2021404-002	ES2021404-003	ES2021404-004	ES2021404-005
					Result	Result	Result	Result	Result
EP132B: Polynuclear Aromatic Hydrocarbons - Continued									
Benz(a)anthracene	56-55-3	0.1	µg/L		<0.1	----	----	----	----
Benzo(a)pyrene	50-32-8	0.05	µg/L		<0.05	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.1	µg/L		<0.1	----	----	----	----
Benzo(e)pyrene	192-97-2	0.1	µg/L		<0.1	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.1	µg/L		<0.1	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.1	µg/L		<0.1	----	----	----	----
Chrysene	218-01-9	0.1	µg/L		<0.1	----	----	----	----
Coronene	191-07-1	0.1	µg/L		<0.1	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.1	µg/L		<0.1	----	----	----	----
Fluoranthene	206-44-0	0.1	µg/L		<0.1	----	----	----	----
Fluorene	86-73-7	0.1	µg/L		<0.1	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.1	µg/L		<0.1	----	----	----	----
Naphthalene	91-20-3	0.1	µg/L		<0.1	----	----	----	----
Perylene	198-55-0	0.1	µg/L		<0.1	----	----	----	----
Phenanthrene	85-01-8	0.1	µg/L		<0.1	----	----	----	----
Pyrene	129-00-0	0.1	µg/L		<0.1	----	----	----	----
^ Sum of PAHs	----	0.05	µg/L		<0.05	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.05	µg/L		<0.05	----	----	----	----
EP215: Multiresidue Pesticide Residue Screen (Suite 2)									
Simazine	122-34-9	0.005	µg/L		----	<0.005	<0.005	<0.005	<0.005
Diuron	330-54-1	0.005	µg/L		----	<0.005	<0.005	<0.005	<0.005
Atrazine	1912-24-9	0.005	µg/L		----	<0.005	<0.005	<0.005	<0.005
Molinate	2212-67-1	0.005	µg/L		----	<0.005	<0.005	<0.005	<0.005
Metolachlor	51218-45-2	0.005	µg/L		----	<0.005	<0.005	<0.005	<0.005
Malathion	121-75-5	0.002	µg/L		----	<0.002	<0.002	<0.002	<0.002
Diazinon	333-41-5	0.005	µg/L		----	<0.005	<0.005	<0.005	<0.005
Thiobencarb	28249-77-6	0.005	µg/L		----	<0.005	<0.005	<0.005	<0.005
Chlorpyrifos	2921-88-2	0.005	µg/L		----	<0.005	<0.005	<0.005	<0.005
Trifluralin	1582-09-8	0.005	µg/L		----	<0.005	<0.005	<0.005	<0.005
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		110	----	----	----	----
Toluene-D8	2037-26-5	2	%		113	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		109	----	----	----	----
EP131S: OC Pesticide Surrogate									

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC01	CSM_BH02	CSM_BH04	CSM_BH06	CSM_BH08
				Client sampling date / time	17-Jun-2020 00:00	18-Jun-2020 00:00	18-Jun-2020 00:00	18-Jun-2020 00:00	17-Jun-2020 00:00
Compound	CAS Number	LOR	Unit		ES2021404-001	ES2021404-002	ES2021404-003	ES2021404-004	ES2021404-005
					Result	Result	Result	Result	Result
EP131S: OC Pesticide Surrogate - Continued									
Dibromo-DDE	21655-73-2	0.002	%		**----**	**109**	**111**	**111**	**109**
EP132T: Base/Neutral Extractable Surrogates									
2-Fluorobiphenyl	321-60-8	0.1	%		**49.1**	**----**	**----**	**----**	**----**
Anthracene-d10	1719-06-8	0.1	%		**69.4**	**----**	**----**	**----**	**----**
4-Terphenyl-d14	1718-51-0	0.1	%		**79.7**	**----**	**----**	**----**	**----**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	CSM_BH09s	CSM_BH10S	SRT_BH047	SRT_BH052	SRT_BH059
				Client sampling date / time	19-Jun-2020 00:00	19-Jun-2020 00:00	17-Jun-2020 00:00	17-Jun-2020 00:00	17-Jun-2020 00:00
Compound	CAS Number	LOR	Unit		ES2021404-006	ES2021404-007	ES2021404-008	ES2021404-009	ES2021404-010
					Result	Result	Result	Result	Result
EP131A: Organochlorine Pesticides									
Aldrin	309-00-2	0.001	µg/L		<0.001	<0.001	<0.001	<0.001	<0.001
alpha-BHC	319-84-6	0.002	µg/L		<0.002	<0.002	<0.002	<0.002	<0.002
beta-BHC	319-85-7	0.002	µg/L		<0.002	<0.002	<0.002	<0.002	<0.002
delta-BHC	319-86-8	0.002	µg/L		<0.002	<0.002	<0.002	<0.002	<0.002
4.4`-DDD	72-54-8	0.002	µg/L		<0.002	<0.002	<0.002	<0.002	<0.002
4.4`-DDE	72-55-9	0.002	µg/L		<0.002	<0.002	<0.002	<0.002	<0.002
4.4`-DDT	50-29-3	0.002	µg/L		<0.002	<0.002	<0.002	<0.002	<0.002
Dieldrin	60-57-1	0.002	µg/L		<0.002	<0.002	<0.002	<0.002	<0.002
alpha-Endosulfan	959-98-8	0.002	µg/L		<0.002	<0.002	<0.002	<0.002	<0.002
beta-Endosulfan	33213-65-9	0.002	µg/L		<0.002	<0.002	<0.002	<0.002	<0.002
Endosulfan sulfate	1031-07-8	0.002	µg/L		<0.002	<0.002	<0.002	<0.002	<0.002
^ **Sum of alpha- and beta-Endosulfan**	115-29-7	0.002	µg/L		<0.002	<0.002	<0.002	<0.002	<0.002
Endrin	72-20-8	0.002	µg/L		<0.002	<0.002	<0.002	<0.002	<0.002
Endrin aldehyde	7421-93-4	0.002	µg/L		<0.002	<0.002	<0.002	<0.002	<0.002
Endrin ketone	53494-70-5	0.002	µg/L		<0.002	<0.002	<0.002	<0.002	<0.002
Heptachlor	76-44-8	0.002	µg/L		<0.002	<0.002	<0.002	<0.002	<0.002
Heptachlor epoxide	1024-57-3	0.002	µg/L		<0.002	<0.002	<0.002	<0.002	<0.002
Hexachlorobenzene (HCB)	118-74-1	0.002	µg/L		<0.002	<0.002	<0.002	<0.002	<0.002
gamma-BHC (Lindane)	58-89-9	0.002	µg/L		<0.002	<0.002	<0.002	<0.002	<0.002
Methoxychlor	72-43-5	0.002	µg/L		<0.002	<0.002	<0.002	<0.002	<0.002
cis-Chlordane	5103-71-9	0.001	µg/L		<0.001	<0.001	<0.001	<0.001	<0.001
trans-Chlordane	5103-74-2	0.001	µg/L		<0.001	<0.001	<0.001	<0.001	<0.001
^ **Sum of cis- and trans-Chlordane**	57-74-9	0.001	µg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Oxychlordane	27304-13-8	0.002	µg/L		<0.002	<0.002	<0.002	<0.002	<0.002
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.002	µg/L		<0.002	<0.002	<0.002	<0.002	<0.002
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-2	0.002	µg/L		<0.002	<0.002	<0.002	<0.002	<0.002
EP215: Multiresidue Pesticide Residue Screen (Suite 2)									
Simazine	122-34-9	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Diuron	330-54-1	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Atrazine	1912-24-9	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Molinate	2212-67-1	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Metolachlor	51218-45-2	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Malathion	121-75-5	0.002	µg/L		<0.002	<0.002	<0.002	<0.002	<0.002

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	CSM_BH09s	CSM_BH10S	SRT_BH047	SRT_BH052	SRT_BH059
				Client sampling date / time	19-Jun-2020 00:00	19-Jun-2020 00:00	17-Jun-2020 00:00	17-Jun-2020 00:00	17-Jun-2020 00:00
Compound	CAS Number	LOR	Unit		ES2021404-006	ES2021404-007	ES2021404-008	ES2021404-009	ES2021404-010
					Result	Result	Result	Result	Result
EP215: Multiresidue Pesticide Residue Screen (Suite 2) - Continued									
Diazinon	333-41-5	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Thiobencarb	28249-77-6	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Chlorpyrifos	2921-88-2	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
Trifluralin	1582-09-8	0.005	µg/L		<0.005	<0.005	<0.005	<0.005	<0.005
EP131S: OC Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.002	%		**128**	**115**	**111**	**110**	**118**

Surrogate Control Limits

Sub-Matrix: **WATER**

Compound	CAS Number	Recovery Limits (%) Low	High
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128
EP131S: OC Pesticide Surrogate			
Dibromo-DDE	21655-73-2	41	136
EP132T: Base/Neutral Extractable Surrogates			
2-Fluorobiphenyl	321-60-8	43	135
Anthracene-d10	1719-06-8	48	138
4-Terphenyl-d14	1718-51-0	48	144

QUALITY CONTROL REPORT

Work Order	: **ES2021404**	Page	: 1 of 7
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Contact	: Angus Harding
Address	: LEVEL 15, 133 CASTLEREAGH STREET SYDNEY NSW, AUSTRALIA 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9239 7100	Telephone	: +61 2 8784 8555
Project	: 2127234	Date Samples Received	: 19-Jun-2020
Order number	: 2127234	Date Analysis Commenced	: 22-Jun-2020
C-O-C number	: ----	Issue Date	: 30-Jun-2020
Sampler	: TERRY NHAM		
Site	:		
Quote number	: EN/005/19		
No. of samples received	: 10		
No. of samples analysed	: 10		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG020F: Dissolved Metals by ICP-MS (QC Lot: 3095039)									
ES2021325-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.001	0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.001	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
ES2021196-002	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.004	0.005	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 3095040)									
ES2021322-008	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
ES2021196-002	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3095573)									
ES2021242-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
ES2021250-011	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3095573)									
ES2021242-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
ES2021250-011	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EP080: BTEXN (QC Lot: 3095573)									

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP080: BTEXN (QC Lot: 3095573) - continued									
ES2021242-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
ES2021250-011	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit

Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 3095039)								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	88.7	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	88.3	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	87.4	85.0	111
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	87.0	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	87.6	83.0	111
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	84.2	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	87.1	81.0	117
EG035F: Dissolved Mercury by FIMS (QCLot: 3095040)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	92.2	83.0	105
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3091950)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	78.9	55.8	112
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	93.7	71.6	113
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	85.3	56.0	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3095573)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	81.4	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3091950)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	84.4	57.9	119
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	88.2	62.5	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	81.0	61.5	121
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3095573)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	82.7	75.0	127
EP080: BTEXN (QCLot: 3095573)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	88.2	70.0	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	90.7	69.0	123
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	90.9	70.0	120
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	91.5	69.0	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	90.8	72.0	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	95.5	70.0	120
EP131A: Organochlorine Pesticides (super trace) (QCLot: 3091963)								
EP131A-ST: Aldrin	309-00-2	0.001	µg/L	<0.001	0.02 µg/L	124	25.2	143
EP131A-ST: alpha-BHC	319-84-6	0.001	µg/L	<0.001	0.02 µg/L	130	15.6	149
EP131A-ST: beta-BHC	319-85-7	0.001	µg/L	<0.001	0.02 µg/L	101	25.8	141

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP131A: Organochlorine Pesticides (super trace) (QCLot: 3091963) - continued								
EP131A-ST: gamma-BHC (Lindane)	58-89-9	0.001	µg/L	<0.001	0.02 µg/L	122	35.0	140
EP131A-ST: delta-BHC	319-86-8	0.002	µg/L	<0.002	0.02 µg/L	84.8	30.1	140
EP131A-ST: cis-Chlordane	5103-71-9	0.001	µg/L	<0.001	0.02 µg/L	130	36.0	136
EP131A-ST: trans-Chlordane	5103-74-2	0.001	µg/L	<0.001	0.02 µg/L	122	36.0	138
EP131A-ST: 4.4`-DDD	72-54-8	0.002	µg/L	<0.002	0.02 µg/L	126	36.0	158
EP131A-ST: 4.4`-DDE	72-55-9	0.002	µg/L	<0.002	0.02 µg/L	124	33.0	127
EP131A-ST: 4.4`-DDT	50-29-3	0.002	µg/L	<0.002	0.02 µg/L	81.7	27.8	149
EP131A-ST: Dieldrin	60-57-1	0.002	µg/L	<0.002	0.02 µg/L	124	30.0	144
EP131A-ST: alpha-Endosulfan	959-98-8	0.002	µg/L	<0.002	0.02 µg/L	120	33.0	133
EP131A-ST: Endosulfan sulfate	1031-07-8	0.002	µg/L	<0.002	0.02 µg/L	108	37.0	157
EP131A-ST: beta-Endosulfan	33213-65-9	0.002	µg/L	<0.002	0.02 µg/L	118	40.0	152
EP131A-ST: Endrin	72-20-8	0.002	µg/L	<0.002	0.02 µg/L	121	49.0	155
EP131A-ST: Endrin ketone	53494-70-5	0.002	µg/L	<0.002	0.02 µg/L	130	20.8	143
EP131A-ST: Endrin aldehyde	7421-93-4	0.002	µg/L	<0.002	0.02 µg/L	118	29.0	127
EP131A-ST: Heptachlor	76-44-8	0.002	µg/L	<0.002	0.02 µg/L	119	42.0	152
EP131A-ST: Heptachlor epoxide	1024-57-3	0.002	µg/L	<0.002	0.02 µg/L	124	28.8	139
EP131A-ST: Hexachlorobenzene (HCB)	118-74-1	0.002	µg/L	<0.002	0.02 µg/L	134	18.6	136
EP131A-ST: Methoxychlor	72-43-5	0.002	µg/L	<0.002	0.02 µg/L	67.9	41.0	159
EP132B: Polynuclear Aromatic Hydrocarbons (QCLot: 3092946)								
EP132: 3-Methylcholanthrene	56-49-5	0.1	µg/L	<0.1	2 µg/L	104	60.0	120
EP132: 2-Methylnaphthalene	91-57-6	0.1	µg/L	<0.1	2 µg/L	93.7	59.0	123
EP132: 7.12-Dimethylbenz(a)anthracene	57-97-6	0.1	µg/L	<0.1	2 µg/L	68.2	36.0	144
EP132: Acenaphthene	83-32-9	0.1	µg/L	<0.1	2 µg/L	97.7	64.0	122
EP132: Acenaphthylene	208-96-8	0.1	µg/L	<0.1	2 µg/L	99.8	64.0	126
EP132: Anthracene	120-12-7	0.1	µg/L	<0.1	2 µg/L	101	65.0	127
EP132: Benz(a)anthracene	56-55-3	0.1	µg/L	<0.1	2 µg/L	109	64.0	130
EP132: Benzo(a)pyrene	50-32-8	0.05	µg/L	<0.05	2 µg/L	109	64.0	126
EP132: Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.1	µg/L	<0.1	2 µg/L	108	62.0	126
EP132: Benzo(e)pyrene	192-97-2	0.1	µg/L	<0.1	2 µg/L	106	62.0	126
EP132: Benzo(g.h.i)perylene	191-24-2	0.1	µg/L	<0.1	2 µg/L	111	56.0	126
EP132: Benzo(k)fluoranthene	207-08-9	0.1	µg/L	<0.1	2 µg/L	104	68.0	130
EP132: Chrysene	218-01-9	0.1	µg/L	<0.1	2 µg/L	105	66.0	130
EP132: Coronene	191-07-1	0.1	µg/L	<0.1	2 µg/L	122	35.0	133
EP132: Dibenz(a.h)anthracene	53-70-3	0.1	µg/L	<0.1	2 µg/L	109	58.0	128
EP132: Fluoranthene	206-44-0	0.1	µg/L	<0.1	2 µg/L	107	65.0	127
EP132: Fluorene	86-73-7	0.1	µg/L	<0.1	2 µg/L	102	64.0	124
EP132: Indeno(1.2.3.cd)pyrene	193-39-5	0.1	µg/L	<0.1	2 µg/L	111	57.0	127
EP132: Naphthalene	91-20-3	0.1	µg/L	<0.1	2 µg/L	88.1	54.0	128

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP132B: Polynuclear Aromatic Hydrocarbons (QCLot: 3092946) - continued								
EP132: Perylene	198-55-0	0.1	µg/L	<0.1	2 µg/L	106	66.0	130
EP132: Phenanthrene	85-01-8	0.1	µg/L	<0.1	2 µg/L	102	65.0	129
EP132: Pyrene	129-00-0	0.1	µg/L	<0.1	2 µg/L	106	66.0	128
EP215: Multiresidue Pesticide Residue Screen (Suite 2) (QCLot: 3094854)								
EP215-LL: Simazine	122-34-9	0.005	µg/L	<0.005	0.0125 µg/L	87.4	65.0	130
EP215-LL: Diuron	330-54-1	0.005	µg/L	<0.005	0.0125 µg/L	97.0	65.0	130
EP215-LL: Atrazine	1912-24-9	0.005	µg/L	<0.005	0.0125 µg/L	93.4	65.0	130
EP215-LL: Molinate	2212-67-1	0.005	µg/L	<0.005	0.0125 µg/L	89.7	65.0	130
EP215-LL: Metolachlor	51218-45-2	0.005	µg/L	<0.005	0.0125 µg/L	98.7	65.0	130
EP215-LL: Malathion	121-75-5	0.002	µg/L	<0.002	0.0125 µg/L	99.5	65.0	130
EP215-LL: Diazinon	333-41-5	0.005	µg/L	<0.005	0.0125 µg/L	97.3	65.0	130
EP215-LL: Thiobencarb	28249-77-6	0.005	µg/L	<0.005	0.0125 µg/L	97.2	65.0	130
EP215-LL: Chlorpyrifos	2921-88-2	0.005	µg/L	<0.005	0.0125 µg/L	74.6	65.0	130
EP215-LL: Trifluralin	1582-09-8	0.005	µg/L	<0.005	0.0125 µg/L	67.4	65.0	130

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EG020F: Dissolved Metals by ICP-MS (QCLot: 3095039)							
ES2021196-001	Anonymous	EG020A-F: Arsenic	7440-38-2	1 mg/L	112	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	111	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	106	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	103	70.0	130
		EG020A-F: Lead	7439-92-1	1 mg/L	106	70.0	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	108	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	110	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 3095040)							
ES2021051-001	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	85.8	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3095573)							
ES2021242-001	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	94.6	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3095573)							
ES2021242-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	93.9	70.0	130
EP080: BTEXN (QCLot: 3095573)							

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP080: BTEXN (QCLot: 3095573) - continued							
ES2021242-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	79.6	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	89.9	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	86.3	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	90.1	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	86.4	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	83.9	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2021404**	Page	: 1 of 6
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Telephone	: +61 2 8784 8555
Project	: 2127234	Date Samples Received	: 19-Jun-2020
Site	:	Issue Date	: 30-Jun-2020
Sampler	: TERRY NHAM	No. of samples received	: 10
Order number	: 2127234	No. of samples analysed	: 10

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Method	Count QC	Count Regular	Rate (%) Actual	Rate (%) Expected	Quality Control Specification
Laboratory Duplicates (DUP)					
Multiresidue Pesticide Screen (No. 2)	0	9	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Organochlorine Pesticides (ADWG, ANZECC)	0	9	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Compounds by GCMS(SIM - Ultra-trace)	0	1	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	12	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
Multiresidue Pesticide Screen (No. 2)	0	9	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Organochlorine Pesticides (ADWG, ANZECC)	0	9	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Compounds by GCMS(SIM - Ultra-trace)	0	1	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	12	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Evaluation	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Evaluation
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)							
QC01	**17-Jun-2020**	**----**	----	----	**23-Jun-2020**	14-Dec-2020	✓
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)							
QC01	**17-Jun-2020**	**----**	----	----	**23-Jun-2020**	15-Jul-2020	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071)							
QC01	**17-Jun-2020**	**22-Jun-2020**	24-Jun-2020	✓	**25-Jun-2020**	01-Aug-2020	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
QC01	**17-Jun-2020**	**25-Jun-2020**	01-Jul-2020	✓	**25-Jun-2020**	01-Jul-2020	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071)							
QC01	**17-Jun-2020**	**22-Jun-2020**	24-Jun-2020	✓	**25-Jun-2020**	01-Aug-2020	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
QC01	**17-Jun-2020**	**25-Jun-2020**	01-Jul-2020	✓	**25-Jun-2020**	01-Jul-2020	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080)							
QC01	**17-Jun-2020**	**25-Jun-2020**	01-Jul-2020	✓	**25-Jun-2020**	01-Jul-2020	✓
EP131A: Organochlorine Pesticides							
Amber Glass Bottle - Unpreserved (EP131A-ST)							
CSM_BH08, SRT_BH047, SRT_BH052, SRT_BH059	**17-Jun-2020**	**22-Jun-2020**	24-Jun-2020	✓	**22-Jun-2020**	01-Aug-2020	✓
Amber Glass Bottle - Unpreserved (EP131A-ST)							
CSM_BH02, CSM_BH04, CSM_BH06	**18-Jun-2020**	**22-Jun-2020**	25-Jun-2020	✓	**22-Jun-2020**	01-Aug-2020	✓
Amber Glass Bottle - Unpreserved (EP131A-ST)							
CSM_BH09s, CSM_BH10S	**19-Jun-2020**	**22-Jun-2020**	26-Jun-2020	✓	**22-Jun-2020**	01-Aug-2020	✓
EP132B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP132)							
QC01	**17-Jun-2020**	**23-Jun-2020**	24-Jun-2020	✓	**23-Jun-2020**	02-Aug-2020	✓
EP215: Multiresidue Pesticide Residue Screen (Suite 2)							
Amber Glass Bottle - Unpreserved (EP215-LL)							
CSM_BH08, SRT_BH047, SRT_BH052, SRT_BH059	**17-Jun-2020**	**24-Jun-2020**	24-Jun-2020	✓	**26-Jun-2020**	03-Aug-2020	✓
Amber Glass Bottle - Unpreserved (EP215-LL)							
CSM_BH02, CSM_BH04, CSM_BH06	**18-Jun-2020**	**24-Jun-2020**	25-Jun-2020	✓	**26-Jun-2020**	03-Aug-2020	✓
Amber Glass Bottle - Unpreserved (EP215-LL)							
CSM_BH09s, CSM_BH10S	**19-Jun-2020**	**24-Jun-2020**	26-Jun-2020	✓	**26-Jun-2020**	03-Aug-2020	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Dissolved Mercury by FIMS	EG035F	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Multiresidue Pesticide Screen (No. 2)	EP215-LL	0	9	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Organochlorine Pesticides (ADWG, ANZECC)	EP131A-ST	0	9	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Semivolatile Compounds by GCMS(SIM - Ultra-trace)	EP132	0	1	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	12	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Dissolved Mercury by FIMS	EG035F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Multiresidue Pesticide Screen (No. 2)	EP215-LL	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Organochlorine Pesticides (ADWG, ANZECC)	EP131A-ST	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Compounds by GCMS(SIM - Ultra-trace)	EP132	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Dissolved Mercury by FIMS	EG035F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Multiresidue Pesticide Screen (No. 2)	EP215-LL	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Organochlorine Pesticides (ADWG, ANZECC)	EP131A-ST	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Compounds by GCMS(SIM - Ultra-trace)	EP132	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Dissolved Mercury by FIMS	EG035F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Multiresidue Pesticide Screen (No. 2)	EP215-LL	0	9	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Organochlorine Pesticides (ADWG, ANZECC)	EP131A-ST	0	9	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Semivolatile Compounds by GCMS(SIM - Ultra-trace)	EP132	0	1	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	12	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260D Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)
Organochlorine Pesticides (ADWG, ANZECC)	EP131A-ST	WATER	In house: Referenced to USEPA method 8081. Samples are extracted into solvent. Extracts analysed by large volume injection gas chromatography with electron capture detection. The method is designed to meet detection requirements of ADWG and ANZECC in clean waters.
Semivolatile Compounds by GCMS(SIM - Ultra-trace)	EP132	WATER	In house: Referenced to USEPA 3640 (GPC Cleanup), 8270E GCMS Capiliary column, SIM mode. This method is compliant with NEPM (2013) Schedule B(3)
Multiresidue Pesticide Screen (No. 2)	EP215-LL	WATER	In house: LCMS (APCI in positive mode). The compounds are extracted from water samples using dichloromethane. The organic phase is evaporated to dryness and reconstituted in a mixture of acetonitrile and water for reverse phase HPLC analysis.

Preparation Methods	Method	Matrix	Method Descriptions
Separatory funnel extraction for LCMS herbicides.	* EP215-PR	WATER	In house. A 1 L sample is extracted three times with 60 mL of methylene chloride, reduced to dryness and made up in HPLC mobile phase.
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Sep. Funnel Extraction /Acetylation of Phenolic Compounds	ORG14-AC	WATER	In house: Referenced to USEPA 3510 (Extraction) / In-house (Acetylation): A 1L sample is extracted into dichloromethane and concentrated to 1 mL with echange into cyclohexane. Phenolic compounds are reacted with acetic anhydride to yield phenyl acetates suitable for ultra-trace analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container.

Preparation Methods	Method	Matrix	Method Descriptions
Liquid Liquid Extraction (in-bottle - trace) -	ORG14-IB-ST	WATER	In house: A 50 mL of representative portion of a 500 mL sample is discarded. A portion of solvent (less dense than water) is used to extract the sample (horizontal shaker for 30 minutes) and a portion of the extract analysed directly.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2021404**

Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Contact	: Angus Harding
Address	: LEVEL 15, 133 CASTLEREAGH STREET SYDNEY NSW, AUSTRALIA 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: henry.luo@ghd.com	E-mail	: Angus.Harding@ALSGlobal.com
Telephone	: +61 02 9239 7100	Telephone	: +61 2 8784 8555
Facsimile	: +61 02 9239 7199	Facsimile	: +61-2-8784 8500
Project	: 2127234	Page	: 1 of 3
Order number	: 2127234	Quote number	: ES2018GHDSER0025 (EN/005/19)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	:		
Sampler	: TERRY NHAM		

Dates

Date Samples Received	: 19-Jun-2020 15:00	Issue Date	: 19-Jun-2020
Client Requested Due Date	: 26-Jun-2020	Scheduled Reporting Date	: **26-Jun-2020**

Delivery Details

Mode of Delivery	: Undefined	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: 5.9'C
Receipt Detail	:	No. of samples received / analysed	: 10 / 10

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Preliminary results will be available on the scheduled reporting date listed in this report. However the final report with Multiresidue Pesticides analysis will be complete on 03/07.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - EP131A-ST Super Trace OC Pesticides to meet ADWG and	WATER - EP132B(PAH) Ultra Trace Polynuclear Aromatic Compounds	WATER - EP215LL Multiresidue Pesticide Screen (Suite 2) - Low	WATER - W-05 TRH/BTEXN/8 Metals
ES2021404-001	17-Jun-2020 00:00	QC01		✓		✓
ES2021404-002	18-Jun-2020 00:00	CSM_BH02	✓		✓	
ES2021404-003	18-Jun-2020 00:00	CSM_BH04	✓		✓	
ES2021404-004	18-Jun-2020 00:00	CSM_BH06	✓		✓	
ES2021404-005	17-Jun-2020 00:00	CSM_BH08	✓		✓	
ES2021404-006	19-Jun-2020 00:00	CSM_BH09s	✓		✓	
ES2021404-007	19-Jun-2020 00:00	CSM_BH10S	✓		✓	
ES2021404-008	17-Jun-2020 00:00	SRT_BH047	✓		✓	
ES2021404-009	17-Jun-2020 00:00	SRT_BH052	✓		✓	
ES2021404-010	17-Jun-2020 00:00	SRT_BH059	✓		✓	

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE		
- A4 - AU Tax Invoice (INV)	Email	accountspayableAU@ghd.com
Accounts Payable Australia		
- A4 - AU Tax Invoice (INV)	Email	accountspayableAU@ghd.com
GHD LAB REPORTS		
- *AU Certificate of Analysis - NATA (COA)	Email	ghdlabreports@ghd.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	ghdlabreports@ghd.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	ghdlabreports@ghd.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	ghdlabreports@ghd.com
- EDI Format - ESDAT (ESDAT)	Email	ghdlabreports@ghd.com
- Electronic SRN for ESdat (ESRN_ESDAT)	Email	ghdlabreports@ghd.com
HENRY LUO		
- *AU Certificate of Analysis - NATA (COA)	Email	henry.luo@ghd.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	henry.luo@ghd.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	henry.luo@ghd.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	henry.luo@ghd.com
- A4 - AU Tax Invoice (INV)	Email	henry.luo@ghd.com
- Chain of Custody (CoC) (COC)	Email	henry.luo@ghd.com
- EDI Format - ENMRG (ENMRG)	Email	henry.luo@ghd.com
- EDI Format - ESDAT (ESDAT)	Email	henry.luo@ghd.com
- EDI Format - XTab (XTAB)	Email	henry.luo@ghd.com
- Electronic SRN for ESdat (ESRN_ESDAT)	Email	henry.luo@ghd.com
TERRY NHAM		
- *AU Certificate of Analysis - NATA (COA)	Email	terry.nham@ghd.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	terry.nham@ghd.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	terry.nham@ghd.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	terry.nham@ghd.com
- Chain of Custody (CoC) (COC)	Email	terry.nham@ghd.com
- EDI Format - ENMRG (ENMRG)	Email	terry.nham@ghd.com
- EDI Format - ESDAT (ESDAT)	Email	terry.nham@ghd.com
- EDI Format - XTab (XTAB)	Email	terry.nham@ghd.com
- Electronic SRN for ESdat (ESRN_ESDAT)	Email	terry.nham@ghd.com

CHAIN OF CUSTODY

ALS Laboratory: please tick →

☐ADELAIDE 21 Burma Road Pooraka SA 5095 Ph: 08 8359 0890 E: adelaide@alsglobal.com
☐BRISBANE 32 Shand Street Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com
☐GLADSTONE 46 Callemondah Drive Clinton QLD 4680 Ph: 07 7471 5600 E: gladstone@alsglobal.com
☐MACKAY 78 Harbour Road Mackay QLD 4740 Ph: 07 4944 0177 E: mackay@alsglobal.com
☐MELBOURNE 2-4 Westall Road Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsglobal.com
☐MUDGEE 27 Sydney Road Mudgee NSW 2850 Ph: 02 6372 6735 E: mudgee.mail@alsglobal.com
☐NEWCASTLE 5 Rose Gum Road Warabrook NSW 2304 Ph: 02 4968 9433 E: samples.newcastle@alsglobal.com
☐NOWRA 4/13 Geary Place North Nowra NSW 2541 Ph: 024423 2063 E: nowra@alsglobal.com
☐PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com
☐SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com
☐TOWNSVILLE 14-15 Desma Court Bohle QLD 4818 Ph: 07 4796 0600 E: townesville.environmental@alsglobal.com
☐WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: portkembla@alsglobal.com

CLIENT: GHD Pty Ltd	**TURNAROUND REQUIREMENTS:** ☒ Standard TAT (List due date):	**FOR LABORATORY USE ONLY (Circle)**
OFFICE: Sydney	(Standard TAT may be longer for some tests e.g., Ultra Trace Organics) ☐ Non Standard or urgent TAT (List due date):	Custody Seal Intact? Yes No N/A
PROJECT: 21-27234 Central	**ALS QUOTE NO.:** EN/006/19	Free ice / frozen ice bricks present upon receipt? Yes No N/A
ORDER NUMBER: 2127234	**COC SEQUENCE NUMBER (Circle)** COC: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt: 5.9 °C
PROJECT MANAGER: Henry Luo — **CONTACT PH:** 02 9239 7044 / 0414 090 002	OF: 1 2 3 4 5 6 7	Other comment:
SAMPLER: Terry Nham — **SAMPLER MOBILE:** 0403 251 883	**RELINQUISHED BY:** Terry Nham (GHD)	**RECEIVED BY:** Chris R
COC emailed to ALS? (YES / NO) — **EDD FORMAT (or default):** ESDAT	DATE/TIME: 19/06/2020	DATE/TIME: 19/6/20 15:00
Email Reports to: henry.luo@ghd.com terry.nham@ghd.com	**RELINQUISHED BY:**	**RECEIVED BY:**
Email Invoice to (will default to PM if no other addresses are listed):	DATE/TIME:	DATE/TIME: 19/6/20 1850

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price)
Where **Metals** are required, specify **Total** (unfiltered bottle required) or **Dissolved** (field filtered bottle required).

| ALS USE | SAMPLE DETAILS MATRIX: SOLID (S) WATER (W) | | | CONTAINER INFORMATION | | |

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2024606**	Page	: 1 of 5
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Contact	: Angus Harding
Address	: LEVEL 15, 133 CASTLEREAGH STREET SYDNEY NSW, AUSTRALIA 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9239 7100	Telephone	: +61 2 8784 8555
Project	: 2127234	Date Samples Received	: 16-Jul-2020 18:45
Order number	: ----	Date Analysis Commenced	: 20-Jul-2020
C-O-C number	: ----	Issue Date	: 23-Jul-2020 18:26
Sampler	: TERRY NHAM		
Site	:		
Quote number	: EN/005/19		
No. of samples received	: 1		
No. of samples analysed	: 1		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP080: Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EG020 : Positive result for sample ES2024606-001 has been confirmed by reanalysis.
- Total PAH reported as the sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene and Benzo(g,h,i)perylene.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	QC01	----	----	----	----
			Client sampling date / time	15-Jul-2020 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2024606-001	--------	--------	--------	--------
				Result	----	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L	<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L	**0.016**	----	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	----
Zinc	7440-66-6	0.005	mg/L	<0.005	----	----	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	----	----	----	----
C10 - C14 Fraction	----	50	µg/L	<50	----	----	----	----
C15 - C28 Fraction	----	100	µg/L	<100	----	----	----	----
C29 - C36 Fraction	----	50	µg/L	<50	----	----	----	----
^ **C10 - C36 Fraction (sum)**	----	50	µg/L	<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	----	----	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	20	µg/L	<20	----	----	----	----
>C10 - C16 Fraction	----	100	µg/L	<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L	<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L	<100	----	----	----	----
^ **>C10 - C40 Fraction (sum)**	----	100	µg/L	<100	----	----	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	100	µg/L	<100	----	----	----	----
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	----	----	----	----
Toluene	108-88-3	2	µg/L	<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	----	----	----	----
^ **Total Xylenes**	----	2	µg/L	<2	----	----	----	----
^ **Sum of BTEX**	----	1	µg/L	<1	----	----	----	----
Naphthalene	91-20-3	5	µg/L	<5	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC01	----	----	----	----
				Client sampling date / time	15-Jul-2020 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2024606-001	--------	--------	--------	--------
					Result	----	----	----	----
EP132B: Polynuclear Aromatic Hydrocarbons									
3-Methylcholanthrene	56-49-5	0.1	µg/L		<0.1	----	----	----	----
2-Methylnaphthalene	91-57-6	0.1	µg/L		<0.1	----	----	----	----
7.12-Dimethylbenz(a)anthracene	57-97-6	0.1	µg/L		<0.1	----	----	----	----
Acenaphthene	83-32-9	0.1	µg/L		<0.1	----	----	----	----
Acenaphthylene	208-96-8	0.1	µg/L		<0.1	----	----	----	----
Anthracene	120-12-7	0.1	µg/L		<0.1	----	----	----	----
Benz(a)anthracene	56-55-3	0.1	µg/L		<0.1	----	----	----	----
Benzo(a)pyrene	50-32-8	0.05	µg/L		<0.05	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.1	µg/L		<0.1	----	----	----	----
Benzo(e)pyrene	192-97-2	0.1	µg/L		<0.1	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.1	µg/L		<0.1	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.1	µg/L		<0.1	----	----	----	----
Chrysene	218-01-9	0.1	µg/L		<0.1	----	----	----	----
Coronene	191-07-1	0.1	µg/L		<0.1	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.1	µg/L		<0.1	----	----	----	----
Fluoranthene	206-44-0	0.1	µg/L		<0.1	----	----	----	----
Fluorene	86-73-7	0.1	µg/L		<0.1	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.1	µg/L		<0.1	----	----	----	----
Naphthalene	91-20-3	0.1	µg/L		<0.1	----	----	----	----
Perylene	198-55-0	0.1	µg/L		<0.1	----	----	----	----
Phenanthrene	85-01-8	0.1	µg/L		<0.1	----	----	----	----
Pyrene	129-00-0	0.1	µg/L		<0.1	----	----	----	----
^ Sum of PAHs	----	0.05	µg/L		<0.05	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.05	µg/L		<0.05	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**108**	----	----	----	----
Toluene-D8	2037-26-5	2	%		**98.1**	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		**92.7**	----	----	----	----
EP132T: Base/Neutral Extractable Surrogates									
2-Fluorobiphenyl	321-60-8	0.1	%		**76.9**	----	----	----	----
Anthracene-d10	1719-06-8	0.1	%		**89.9**	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%		**92.1**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**

Compound	CAS Number	Recovery Limits (%) Low	High
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128
EP132T: Base/Neutral Extractable Surrogates			
2-Fluorobiphenyl	321-60-8	43	135
Anthracene-d10	1719-06-8	48	138
4-Terphenyl-d14	1718-51-0	48	144

QUALITY CONTROL REPORT

Work Order	: **ES2024606**	Page	: 1 of 6
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Contact	: Angus Harding
Address	: LEVEL 15, 133 CASTLEREAGH STREET SYDNEY NSW, AUSTRALIA 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9239 7100	Telephone	: +61 2 8784 8555
Project	: 2127234	Date Samples Received	: 16-Jul-2020
Order number	: ----	Date Analysis Commenced	: 20-Jul-2020
C-O-C number	: ----	Issue Date	: 23-Jul-2020
Sampler	: TERRY NHAM		
Site	:		
Quote number	: EN/005/19		
No. of samples received	: 1		
No. of samples analysed	: 1		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG020F: Dissolved Metals by ICP-MS (QC Lot: 3150803)									
ES2024549-003	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
ES2024606-001	QC01	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.016	0.016	0.00	0% - 50%
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 3150804)									
ES2024549-003	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
ES2024606-001	QC01	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3146883)									
ES2024535-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
ES2024535-011	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3146883)									
ES2024535-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
ES2024535-011	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EP080: BTEXN (QC Lot: 3146883)									

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP080: BTEXN (QC Lot: 3146883) - continued									
ES2024535-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
ES2024535-011	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit

Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 3150803)								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	99.1	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	102	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	94.4	85.0	111
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	93.4	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	92.2	83.0	111
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	97.4	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	96.4	81.0	117
EG035F: Dissolved Mercury by FIMS (QCLot: 3150804)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	91.8	83.0	105
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3144785)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	84.7	55.8	112
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	91.0	71.6	113
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	82.0	56.0	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3146883)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	90.9	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3144785)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	90.7	57.9	119
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	77.2	62.5	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	93.3	61.5	121
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3146883)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	90.5	75.0	127
EP080: BTEXN (QCLot: 3146883)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	95.0	70.0	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	91.1	69.0	123
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	92.6	70.0	120
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	92.8	69.0	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	95.2	72.0	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	94.7	70.0	120
EP132B: Polynuclear Aromatic Hydrocarbons (QCLot: 3145706)								
EP132: 3-Methylcholanthrene	56-49-5	0.1	µg/L	<0.1	2 µg/L	84.6	60.0	120
EP132: 2-Methylnaphthalene	91-57-6	0.1	µg/L	<0.1	2 µg/L	82.6	59.0	123
EP132: 7.12-Dimethylbenz(a)anthracene	57-97-6	0.1	µg/L	<0.1	2 µg/L	88.6	36.0	144

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP132B: Polynuclear Aromatic Hydrocarbons (QCLot: 3145706) - continued								
EP132: Acenaphthene	83-32-9	0.1	µg/L	<0.1	2 µg/L	84.6	64.0	122
EP132: Acenaphthylene	208-96-8	0.1	µg/L	<0.1	2 µg/L	84.8	64.0	126
EP132: Anthracene	120-12-7	0.1	µg/L	<0.1	2 µg/L	88.1	65.0	127
EP132: Benz(a)anthracene	56-55-3	0.1	µg/L	<0.1	2 µg/L	86.4	64.0	130
EP132: Benzo(a)pyrene	50-32-8	0.05	µg/L	<0.05	2 µg/L	86.3	64.0	126
EP132: Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.1	µg/L	<0.1	2 µg/L	85.4	62.0	126
EP132: Benzo(e)pyrene	192-97-2	0.1	µg/L	<0.1	2 µg/L	85.3	62.0	126
EP132: Benzo(g.h.i)perylene	191-24-2	0.1	µg/L	<0.1	2 µg/L	86.6	56.0	126
EP132: Benzo(k)fluoranthene	207-08-9	0.1	µg/L	<0.1	2 µg/L	87.3	68.0	130
EP132: Chrysene	218-01-9	0.1	µg/L	<0.1	2 µg/L	87.3	66.0	130
EP132: Coronene	191-07-1	0.1	µg/L	<0.1	2 µg/L	86.3	35.0	133
EP132: Dibenz(a.h)anthracene	53-70-3	0.1	µg/L	<0.1	2 µg/L	85.5	58.0	128
EP132: Fluoranthene	206-44-0	0.1	µg/L	<0.1	2 µg/L	89.3	65.0	127
EP132: Fluorene	86-73-7	0.1	µg/L	<0.1	2 µg/L	85.1	64.0	124
EP132: Indeno(1.2.3.cd)pyrene	193-39-5	0.1	µg/L	<0.1	2 µg/L	86.0	57.0	127
EP132: Naphthalene	91-20-3	0.1	µg/L	<0.1	2 µg/L	79.9	54.0	128
EP132: Perylene	198-55-0	0.1	µg/L	<0.1	2 µg/L	86.8	66.0	130
EP132: Phenanthrene	85-01-8	0.1	µg/L	<0.1	2 µg/L	87.3	65.0	129
EP132: Pyrene	129-00-0	0.1	µg/L	<0.1	2 µg/L	89.2	66.0	128

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EG020F: Dissolved Metals by ICP-MS (QCLot: 3150803)							
ES2024549-002	Anonymous	EG020A-F: Arsenic	7440-38-2	1 mg/L	106	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	108	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	100	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	108	70.0	130
		EG020A-F: Lead	7439-92-1	1 mg/L	96.4	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	107	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 3150804)							
ES2024549-001	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	76.0	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3146883)							

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3146883) - continued							
ES2024535-001	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	115	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3146883)							
ES2024535-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	106	70.0	130
EP080: BTEXN (QCLot: 3146883)							
ES2024535-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	99.4	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	99.0	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	101	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	102	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	104	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	100.0	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2024606**	Page	: 1 of 4
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Telephone	: +61 2 8784 8555
Project	: 2127234	Date Samples Received	: 16-Jul-2020
Site	:	Issue Date	: 23-Jul-2020
Sampler	: TERRY NHAM	No. of samples received	: 1
Order number	: ----	No. of samples analysed	: 1

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Method	Count QC	Count Regular	Rate (%) Actual	Rate (%) Expected	Quality Control Specification
Laboratory Duplicates (DUP)					
Semivolatile Compounds by GCMS(SIM - Ultra-trace)	0	1	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	17	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
Semivolatile Compounds by GCMS(SIM - Ultra-trace)	0	1	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	17	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / *Container / Client Sample ID(s)*	*Sample Date*	*Extraction / Preparation* Date extracted	Due for extraction	Evaluation	*Analysis* Date analysed	Due for analysis	Evaluation
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F) QC01	**15-Jul-2020**	**----**	----	----	**21-Jul-2020**	11-Jan-2021	✓
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F) QC01	**15-Jul-2020**	**----**	----	----	**21-Jul-2020**	12-Aug-2020	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071) QC01	**15-Jul-2020**	**20-Jul-2020**	22-Jul-2020	✓	**22-Jul-2020**	29-Aug-2020	✓
Amber VOC Vial - Sulfuric Acid (EP080) QC01	**15-Jul-2020**	**20-Jul-2020**	29-Jul-2020	✓	**20-Jul-2020**	29-Jul-2020	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071) QC01	**15-Jul-2020**	**20-Jul-2020**	22-Jul-2020	✓	**22-Jul-2020**	29-Aug-2020	✓
Amber VOC Vial - Sulfuric Acid (EP080) QC01	**15-Jul-2020**	**20-Jul-2020**	29-Jul-2020	✓	**20-Jul-2020**	29-Jul-2020	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080) QC01	**15-Jul-2020**	**20-Jul-2020**	29-Jul-2020	✓	**20-Jul-2020**	29-Jul-2020	✓
EP132B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP132) QC01	**15-Jul-2020**	**20-Jul-2020**	22-Jul-2020	✓	**20-Jul-2020**	29-Aug-2020	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Dissolved Mercury by FIMS	EG035F	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Compounds by GCMS(SIM - Ultra-trace)	EP132	0	1	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	17	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Dissolved Mercury by FIMS	EG035F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Compounds by GCMS(SIM - Ultra-trace)	EP132	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Dissolved Mercury by FIMS	EG035F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Compounds by GCMS(SIM - Ultra-trace)	EP132	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Dissolved Mercury by FIMS	EG035F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Compounds by GCMS(SIM - Ultra-trace)	EP132	0	1	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	17	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260D Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)
Semivolatile Compounds by GCMS(SIM - Ultra-trace)	EP132	WATER	In house: Referenced to USEPA 3640 (GPC Cleanup), 8270E GCMS Capiliary column, SIM mode. This method is compliant with NEPM (2013) Schedule B(3)

Preparation Methods	Method	Matrix	Method Descriptions
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Sep. Funnel Extraction /Acetylation of Phenolic Compounds	ORG14-AC	WATER	In house: Referenced to USEPA 3510 (Extraction) / In-house (Acetylation): A 1L sample is extracted into dichloromethane and concentrated to 1 mL with echange into cyclohexane. Phenolic compounds are reacted with acetic anhydride to yield phenyl acetates suitable for ultra-trace analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging.

CHAIN OF CUSTODY

ALS Laboratory: please tick →

☐ADELAIDE 21 Burma Road Pooraka SA 5095 Ph: 08 8359 0890 E: adelaide@alsglobal.com
☐BRISBANE 32 Shand Street Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com
☐GLADSTONE 46 Callemondah Drive Clinton QLD 4680 Ph: 07 7471 5600 E: gladstone@alsglobal.com
☐MACKAY 78 Harbour Road Mackay QLD 4740 Ph: 07 4944 0177 E: mackay@alsglobal.com
☐MELBOURNE 2-4 Westall Road Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsglobal.com
☐MUDGEE 27 Sydney Road Mudgee NSW 2850 Ph: 02 6372 6735 E: mudgee.mail@alsglobal.com
☐NEWCASTLE 5 Rose Gum Road Warabrook NSW 2304 Ph: 02 4968 9433 E: samples.newcastle@alsglobal.com
☐NOWRA 4/13 Geary Place North Nowra NSW 2541 Ph: 024423 2063 E: nowra@alsglobal.com
☐PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com
☐SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com
☐TOWNSVILLE 14-15 Desma Court Bohle QLD 4818 Ph: 07 4796 0600 E: townesville.environmental@alsglobal.com
☐WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: portkembla@alsglobal.com

CLIENT: GHD Pty Ltd	TURNAROUND REQUIREMENTS (Standard TAT may be longer for some tests e.g., Ultra Trace Organics)	☒ Standard TAT (List due date):	FOR LABORATORY USE ONLY (Circle) Custody Seal Intact: Yes / No / N/A
OFFICE: Sydney		☐ Non Standard or urgent TAT (List due date):	Free ice / frozen ice bricks present upon receipt: Yes / No / N/A
PROJECT: 21-27234 Central	ALS QUOTE NO.: EN/005/19	COC SEQUENCE NUMBER (Circle) COC: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt: 4.6 °C
ORDER NUMBER:		OF: 1 2 3 4 5 6 7	Other comment:
PROJECT MANAGER: Henry Luo	CONTACT PH: 02 9239 7044 / 0414 090 002		
SAMPLER: Terry Nham	SAMPLER MOBILE: 0403 251 883	RELINQUISHED BY: Terry Nham (GHD)	RECEIVED BY: Sep M.
COC emailed to ALS? (YES / NO)	EDD FORMAT (or default):	DATE/TIME: 16/7/2020	DATE/TIME: 16/07/2020 1415
Email Reports to: henry.luo@ghd.com terry.nham@ghd.com		RELINQUISHED BY:	RECEIVED BY: SOSH/MO AJ
Email Invoice to (will default to PM if no other addresses are listed):		DATE/TIME:	DATE/TIME: 16/7/20 1845

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

| ALS USE | SAMPLE DETAILS MATRIX: SOLID (S) WATER (W) | | | CONTAINER INFORMATION | | ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required). | | |

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2028968**	Page	: 1 of 5
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Contact	: Angus Harding
Address	: LEVEL 15, 133 CASTLEREAGH STREET SYDNEY NSW, AUSTRALIA 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9239 7100	Telephone	: +61 2 8784 8555
Project	: 2127234	Date Samples Received	: 18-Aug-2020 15:00
Order number	: 2127234	Date Analysis Commenced	: 20-Aug-2020
C-O-C number	: ----	Issue Date	: 25-Aug-2020 17:56
Sampler	: TERRY NHAM		
Site	: 21-27234 Central		
Quote number	: EN/005		
No. of samples received	: 1		
No. of samples analysed	: 1		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP132: Where reported, Total PAH reported as the sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene and Benzo(g,h,i)perylene.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC01	----	----	----	----
				Client sampling date / time	17-Aug-2020 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2028968-001	--------	--------	--------	--------
					Result	----	----	----	----
EG020F: Dissolved Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L		<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L		**0.043**	----	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	----	----	----	----
Zinc	7440-66-6	0.005	mg/L		**0.035**	----	----	----	----
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	----	----	----	----
C10 - C14 Fraction	----	50	µg/L		<50	----	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	----	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	----	----	----	----
^ **C10 - C36 Fraction (sum)**	----	50	µg/L		<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	----	----	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	20	µg/L		<20	----	----	----	----
>C10 - C16 Fraction	----	100	µg/L		<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	----	----	----	----
^ **>C10 - C40 Fraction (sum)**	----	100	µg/L		<100	----	----	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	100	µg/L		<100	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	----	----	----	----
Toluene	108-88-3	2	µg/L		<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	----	----	----	----
^ **Total Xylenes**	----	2	µg/L		<2	----	----	----	----
^ **Sum of BTEX**	----	1	µg/L		<1	----	----	----	----
Naphthalene	91-20-3	5	µg/L		<5	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC01	----	----	----	----
				Client sampling date / time	17-Aug-2020 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2028968-001	--------	--------	--------	--------
					Result	----	----	----	----
EP132B: Polynuclear Aromatic Hydrocarbons									
3-Methylcholanthrene	56-49-5	0.1	µg/L		<0.1	----	----	----	----
2-Methylnaphthalene	91-57-6	0.1	µg/L		<0.1	----	----	----	----
7.12-Dimethylbenz(a)anthracene	57-97-6	0.1	µg/L		<0.1	----	----	----	----
Acenaphthene	83-32-9	0.1	µg/L		<0.1	----	----	----	----
Acenaphthylene	208-96-8	0.1	µg/L		<0.1	----	----	----	----
Anthracene	120-12-7	0.1	µg/L		<0.1	----	----	----	----
Benz(a)anthracene	56-55-3	0.1	µg/L		<0.1	----	----	----	----
Benzo(a)pyrene	50-32-8	0.05	µg/L		<0.05	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.1	µg/L		<0.1	----	----	----	----
Benzo(e)pyrene	192-97-2	0.1	µg/L		<0.1	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.1	µg/L		<0.1	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.1	µg/L		<0.1	----	----	----	----
Chrysene	218-01-9	0.1	µg/L		<0.1	----	----	----	----
Coronene	191-07-1	0.1	µg/L		<0.1	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.1	µg/L		<0.1	----	----	----	----
Fluoranthene	206-44-0	0.1	µg/L		<0.1	----	----	----	----
Fluorene	86-73-7	0.1	µg/L		<0.1	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.1	µg/L		<0.1	----	----	----	----
Naphthalene	91-20-3	0.1	µg/L		<0.1	----	----	----	----
Perylene	198-55-0	0.1	µg/L		<0.1	----	----	----	----
Phenanthrene	85-01-8	0.1	µg/L		<0.1	----	----	----	----
Pyrene	129-00-0	0.1	µg/L		<0.1	----	----	----	----
^ Sum of PAHs	----	0.05	µg/L		<0.05	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.05	µg/L		<0.05	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**96.3**	----	----	----	----
Toluene-D8	2037-26-5	2	%		**103**	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		**98.8**	----	----	----	----
EP132T: Base/Neutral Extractable Surrogates									
2-Fluorobiphenyl	321-60-8	0.1	%		**65.1**	----	----	----	----
Anthracene-d10	1719-06-8	0.1	%		**60.1**	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%		**58.2**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128
EP132T: Base/Neutral Extractable Surrogates			
2-Fluorobiphenyl	321-60-8	43	135
Anthracene-d10	1719-06-8	48	138
4-Terphenyl-d14	1718-51-0	48	144

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **ES2028968**	Page	: 1 of 6
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Contact	: Angus Harding
Address	: LEVEL 15, 133 CASTLEREAGH STREET SYDNEY NSW, AUSTRALIA 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9239 7100	Telephone	: +61 2 8784 8555
Project	: 2127234	Date Samples Received	: 18-Aug-2020
Order number	: 2127234	Date Analysis Commenced	: 20-Aug-2020
C-O-C number	: ----	Issue Date	: 25-Aug-2020
Sampler	: TERRY NHAM		
Site	: 21-27234 Central		
Quote number	: EN/005		
No. of samples received	: 1		
No. of samples analysed	: 1		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG020F: Dissolved Metals by ICP-MS (QC Lot: 3213462)									
ES2029023-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.001	0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.003	0.003	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.022	0.022	0.00	0% - 20%
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
ES2028976-002	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.001	0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.001	0.001	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 3213463)									
ES2028976-001	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
ES2029023-002	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3210328)									
ES2028904-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
ES2029105-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3210328)									
ES2028904-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
ES2029105-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EP080: BTEXN (QC Lot: 3210328)									

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP080: BTEXN (QC Lot: 3210328) - continued									
ES2028904-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
ES2029105-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
EP132B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3208820)									
EP2008593-001	Anonymous	EP132: Benzo(a)pyrene	50-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP132: 3-Methylcholanthrene	56-49-5	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: 2-Methylnaphthalene	91-57-6	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: 7.12-Dimethylbenz(a)anthracene	57-97-6	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Acenaphthene	83-32-9	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Acenaphthylene	208-96-8	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Anthracene	120-12-7	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Benz(a)anthracene	56-55-3	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Benzo(e)pyrene	192-97-2	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Benzo(g.h.i)perylene	191-24-2	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Benzo(k)fluoranthene	207-08-9	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Chrysene	218-01-9	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Coronene	191-07-1	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Dibenz(a.h)anthracene	53-70-3	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Fluoranthene	206-44-0	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Fluorene	86-73-7	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Indeno(1.2.3.cd)pyrene	193-39-5	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Naphthalene	91-20-3	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Perylene	198-55-0	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Phenanthrene	85-01-8	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP132: Pyrene	129-00-0	0.1	µg/L	<0.1	<0.1	0.00	No Limit

Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 3213462)								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	88.8	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	89.9	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	88.9	85.0	111
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	93.4	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	88.3	83.0	111
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	93.5	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	96.0	81.0	117
EG035F: Dissolved Mercury by FIMS (QCLot: 3213463)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	103	83.0	105
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3208772)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	72.7	55.8	112
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	77.2	71.6	113
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	79.4	56.0	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3210328)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	87.4	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3208772)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	58.4	57.9	119
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	82.3	62.5	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	77.8	61.5	121
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3210328)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	90.9	75.0	127
EP080: BTEXN (QCLot: 3210328)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	85.8	70.0	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	97.0	69.0	123
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	94.6	70.0	120
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	95.2	69.0	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	97.5	72.0	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	90.6	70.0	120
EP132B: Polynuclear Aromatic Hydrocarbons (QCLot: 3208820)								
EP132: 3-Methylcholanthrene	56-49-5	0.1	µg/L	<0.1	2 µg/L	99.1	60.0	120
EP132: 2-Methylnaphthalene	91-57-6	0.1	µg/L	<0.1	2 µg/L	89.8	59.0	123
EP132: 7.12-Dimethylbenz(a)anthracene	57-97-6	0.1	µg/L	<0.1	2 µg/L	97.1	36.0	144

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP132B: Polynuclear Aromatic Hydrocarbons (QCLot: 3208820) - continued								
EP132: Acenaphthene	83-32-9	0.1	µg/L	<0.1	2 µg/L	95.3	64.0	122
EP132: Acenaphthylene	208-96-8	0.1	µg/L	<0.1	2 µg/L	99.4	64.0	126
EP132: Anthracene	120-12-7	0.1	µg/L	<0.1	2 µg/L	96.5	65.0	127
EP132: Benz(a)anthracene	56-55-3	0.1	µg/L	<0.1	2 µg/L	106	64.0	130
EP132: Benzo(a)pyrene	50-32-8	0.05	µg/L	<0.05	2 µg/L	108	64.0	126
EP132: Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.1	µg/L	<0.1	2 µg/L	111	62.0	126
EP132: Benzo(e)pyrene	192-97-2	0.1	µg/L	<0.1	2 µg/L	111	62.0	126
EP132: Benzo(g.h.i)perylene	191-24-2	0.1	µg/L	<0.1	2 µg/L	91.4	56.0	126
EP132: Benzo(k)fluoranthene	207-08-9	0.1	µg/L	<0.1	2 µg/L	110	68.0	130
EP132: Chrysene	218-01-9	0.1	µg/L	<0.1	2 µg/L	104	66.0	130
EP132: Coronene	191-07-1	0.1	µg/L	<0.1	2 µg/L	81.7	35.0	133
EP132: Dibenz(a.h)anthracene	53-70-3	0.1	µg/L	<0.1	2 µg/L	91.3	58.0	128
EP132: Fluoranthene	206-44-0	0.1	µg/L	<0.1	2 µg/L	97.0	65.0	127
EP132: Fluorene	86-73-7	0.1	µg/L	<0.1	2 µg/L	98.0	64.0	124
EP132: Indeno(1.2.3.cd)pyrene	193-39-5	0.1	µg/L	<0.1	2 µg/L	96.9	57.0	127
EP132: Naphthalene	91-20-3	0.1	µg/L	<0.1	2 µg/L	86.9	54.0	128
EP132: Perylene	198-55-0	0.1	µg/L	<0.1	2 µg/L	104	66.0	130
EP132: Phenanthrene	85-01-8	0.1	µg/L	<0.1	2 µg/L	98.8	65.0	129
EP132: Pyrene	129-00-0	0.1	µg/L	<0.1	2 µg/L	96.0	66.0	128

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EG020F: Dissolved Metals by ICP-MS (QCLot: 3213462)							
ES2028976-003	Anonymous	EG020A-F: Arsenic	7440-38-2	2 mg/L	75.1	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.5 mg/L	81.2	70.0	130
		EG020A-F: Chromium	7440-47-3	2 mg/L	79.0	70.0	130
		EG020A-F: Copper	7440-50-8	2 mg/L	81.5	70.0	130
		EG020A-F: Lead	7439-92-1	2 mg/L	77.2	70.0	130
		EG020A-F: Nickel	7440-02-0	2 mg/L	82.6	70.0	130
		EG020A-F: Zinc	7440-66-6	2 mg/L	85.0	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 3213463)							
ES2028968-001	QC01	EG035F: Mercury	7439-97-6	0.01 mg/L	90.0	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3210328)							
ES2028904-001	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	116	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3210328)							
ES2028904-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	103	70.0	130
EP080: BTEXN (QCLot: 3210328)							
ES2028904-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	80.0	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	93.0	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	93.9	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	95.9	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	98.1	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	91.8	70.0	130
EP132B: Polynuclear Aromatic Hydrocarbons (QCLot: 3208820)							
EP2008593-001	Anonymous	EP132: 3-Methylcholanthrene	56-49-5	2 µg/L	73.9	59.0	115
		EP132: 2-Methylnaphthalene	91-57-6	2 µg/L	62.8	46.0	120
		EP132: 7.12-Dimethylbenz(a)anthracene	57-97-6	2 µg/L	79.2	21.0	135
		EP132: Acenaphthene	83-32-9	2 µg/L	66.4	62.0	114
		EP132: Acenaphthylene	208-96-8	2 µg/L	70.6	61.0	119
		EP132: Anthracene	120-12-7	2 µg/L	69.2	68.0	116
		EP132: Benz(a)anthracene	56-55-3	2 µg/L	78.4	67.0	122
		EP132: Benzo(a)pyrene	50-32-8	2 µg/L	78.9	72.0	114
		EP132: Benzo(b+j)fluoranthene	205-99-2 205-82-3	2 µg/L	81.9	69.0	119
		EP132: Benzo(e)pyrene	192-97-2	2 µg/L	81.4	71.0	119
		EP132: Benzo(g.h.i)perylene	191-24-2	2 µg/L	68.4	49.0	133
		EP132: Benzo(k)fluoranthene	207-08-9	2 µg/L	80.4	71.0	124
		EP132: Chrysene	218-01-9	2 µg/L	76.0	70.0	118
		EP132: Coronene	191-07-1	2 µg/L	63.5	29.0	138
		EP132: Dibenz(a.h)anthracene	53-70-3	2 µg/L	69.2	60.0	122
		EP132: Fluoranthene	206-44-0	2 µg/L	73.2	65.0	121
		EP132: Fluorene	86-73-7	2 µg/L	75.5	63.0	118
		EP132: Indeno(1.2.3.cd)pyrene	193-39-5	2 µg/L	63.0	57.0	123
		EP132: Naphthalene	91-20-3	2 µg/L	61.8	53.0	115
		EP132: Perylene	198-55-0	2 µg/L	76.1	71.0	118
		EP132: Phenanthrene	85-01-8	2 µg/L	71.0	67.0	120
		EP132: Pyrene	129-00-0	2 µg/L	72.7	70.0	117

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2028968**	Page	: 1 of 4
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Telephone	: +61 2 8784 8555
Project	: 2127234	Date Samples Received	: 18-Aug-2020
Site	: 21-27234 Central	Issue Date	: 25-Aug-2020
Sampler	: TERRY NHAM	No. of samples received	: 1
Order number	: 2127234	No. of samples analysed	: 1

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Method	Count QC	Count Regular	Rate (%) Actual	Rate (%) Expected	Quality Control Specification
Laboratory Duplicates (DUP)					
TRH - Semivolatile Fraction	0	2	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
TRH - Semivolatile Fraction	0	2	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Evaluation	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Evaluation
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)							
QC01	**17-Aug-2020**	**----**	----	----	**21-Aug-2020**	13-Feb-2021	✓
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)							
QC01	**17-Aug-2020**	**----**	----	----	**24-Aug-2020**	14-Sep-2020	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071)							
QC01	**17-Aug-2020**	**20-Aug-2020**	24-Aug-2020	✓	**21-Aug-2020**	29-Sep-2020	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
QC01	**17-Aug-2020**	**21-Aug-2020**	31-Aug-2020	✓	**21-Aug-2020**	31-Aug-2020	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071)							
QC01	**17-Aug-2020**	**20-Aug-2020**	24-Aug-2020	✓	**21-Aug-2020**	29-Sep-2020	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
QC01	**17-Aug-2020**	**21-Aug-2020**	31-Aug-2020	✓	**21-Aug-2020**	31-Aug-2020	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080)							
QC01	**17-Aug-2020**	**21-Aug-2020**	31-Aug-2020	✓	**21-Aug-2020**	31-Aug-2020	✓
EP132B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP132)							
QC01	**17-Aug-2020**	**21-Aug-2020**	24-Aug-2020	✓	**21-Aug-2020**	30-Sep-2020	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Dissolved Mercury by FIMS	EG035F	2	17	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	14	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Compounds by GCMS(SIM - Ultra-trace)	EP132	1	2	**50.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	2	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Dissolved Mercury by FIMS	EG035F	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Compounds by GCMS(SIM - Ultra-trace)	EP132	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Dissolved Mercury by FIMS	EG035F	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Compounds by GCMS(SIM - Ultra-trace)	EP132	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Dissolved Mercury by FIMS	EG035F	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Compounds by GCMS(SIM - Ultra-trace)	EP132	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	2	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015 The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)
Semivolatile Compounds by GCMS(SIM - Ultra-trace)	EP132	WATER	In house: Referenced to USEPA 3640 (GPC Cleanup), 8270 GCMS Capiliary column, SIM mode. This method is compliant with NEPM Schedule B(3)

Preparation Methods	Method	Matrix	Method Descriptions
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Sep. Funnel Extraction /Acetylation of Phenolic Compounds	ORG14-AC	WATER	In house: Referenced to USEPA 3510 (Extraction) / In-house (Acetylation): A 1L sample is extracted into dichloromethane and concentrated to 1 mL with echange into cyclohexane. Phenolic compounds are reacted with acetic anhydride to yield phenyl acetates suitable for ultra-trace analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging.

CHAIN OF CUSTODY

ALS Laboratory: please tick →

☐ADELAIDE 21 Burma Road Pooraka SA 5095 Ph: 08 8359 0890 E: adelaide@alsglobal.com
☐BRISBANE 32 Shand Street Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com
☐GLADSTONE 46 Callemondah Drive Clinton QLD 4680 Ph: 07 7471 5600 E: gladstone@alsglobal.com
☐MACKAY 78 Harbour Road Mackay QLD 4740 Ph: 07 4944 0177 E: mackay@alsglobal.com
☐MELBOURNE 2-4 Westall Road Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsglobal.com
☐MUDGEE 27 Sydney Road Mudgee NSW 2850 Ph: 02 6372 6735 E: mudgee.mail@alsglobal.com
☐NEWCASTLE 5 Rose Gum Road Warabrook NSW 2304 Ph: 02 4968 9433 E: samples.newcastle@alsglobal.com
☐NOWRA 4/13 Geary Place North Nowra NSW 2541 Ph: 024423 2063 E: nowra@alsglobal.com
☐PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com
☐SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com
☐TOWNSVILLE 14-15 Desma Court Bohle QLD 4818 Ph: 07 4796 0600 E: townsville.environmental@alsglobal.com
☐WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: portkembla@alsglobal.com

CLIENT: GHD Pty Ltd	**TURNAROUND REQUIREMENTS:** (Standard TAT may be longer for some tests e.g., Ultra Trace Organics)	☒ Standard TAT **(List due date):**
OFFICE: Sydney		☐ Non Standard or urgent TAT **(List due date):**
PROJECT: 21-27234 Central	**ALS QUOTE NO.:** EN/005/19	
ORDER NUMBER: 2127234		
PROJECT MANAGER: Henry Luo	**CONTACT PH:** 02 9239 7044 / 0414 090 002	
SAMPLER: Terry Nham	**SAMPLER MOBILE:** 0403 251 883	
COC emailed to ALS? (YES / NO)	**EDD FORMAT (or default):** ESDAT	
Email Reports to: henry.luo@ghd.com terry.nham@ghd.com		
Email Invoice to (will default to PM if no other addresses are listed):		

COC SEQUENCE NUMBER (Circle)

COC: 1 2 3 4 5 6 7

OF: 1 2 3 4 5 6 7

FOR LABORATORY USE ONLY (Circle)

Custody Seal Intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: 2.3 °C

Other comment:

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Terry Nham (GHD)	Sep M.		AJ
DATE/TIME: 18/8/2020	DATE/TIME: 18/08/2020 1500	DATE/TIME:	DATE/TIME: 18/8/20 1845

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).												
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS	TRH / BTEXN / 8 Metals (W-5)	PAH - Ultra Trace (EP132B)											
1	QC01	17/8/2020	Water		9	X	X											
				TOTAL														

Environmental Division
Sydney
Work Order Reference
ES2028968

Telephone : +61-2-8784 8555

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2032425**	Page	: 1 of 5
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Contact	: Angus Harding
Address	: LEVEL 15, 133 CASTLEREAGH STREET SYDNEY NSW, AUSTRALIA 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9239 7100	Telephone	: +61 2 8784 8555
Project	: 21-27234 Central	Date Samples Received	: 15-Sep-2020 15:40
Order number	: 2127234	Date Analysis Commenced	: 16-Sep-2020
C-O-C number	: ----	Issue Date	: 22-Sep-2020 14:43
Sampler	: Terry Nham		
Site	:		
Quote number	: EN/005		
No. of samples received	: 1		
No. of samples analysed	: 1		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP132: Where reported, Total PAH reported as the sum of Naphthalene, Acenaphthylene, Acenaphthene, Fluorene, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenz(a,h)anthracene and Benzo(g,h,i)perylene.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC01	----	----	----	----
				Client sampling date / time	14-Sep-2020 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2032425-001	--------	--------	--------	--------
					Result	----	----	----	----
EG020F: Dissolved Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L		<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L		**0.002**	----	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	----	----	----	----
Zinc	7440-66-6	0.005	mg/L		<0.005	----	----	----	----
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	----	----	----	----
C10 - C14 Fraction	----	50	µg/L		<50	----	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	----	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	----	----	----	----
^ **C10 - C36 Fraction (sum)**	----	50	µg/L		<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	----	----	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	20	µg/L		<20	----	----	----	----
>C10 - C16 Fraction	----	100	µg/L		<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	----	----	----	----
^ **>C10 - C40 Fraction (sum)**	----	100	µg/L		<100	----	----	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	100	µg/L		<100	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	----	----	----	----
Toluene	108-88-3	2	µg/L		<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	----	----	----	----
^ **Total Xylenes**	----	2	µg/L		<2	----	----	----	----
^ **Sum of BTEX**	----	1	µg/L		<1	----	----	----	----
Naphthalene	91-20-3	5	µg/L		<5	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC01	----	----	----	----
				Client sampling date / time	14-Sep-2020 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2032425-001	--------	--------	--------	--------
					Result	----	----	----	----
EP132B: Polynuclear Aromatic Hydrocarbons									
3-Methylcholanthrene	56-49-5	0.1	µg/L		<0.1	----	----	----	----
2-Methylnaphthalene	91-57-6	0.1	µg/L		<0.1	----	----	----	----
7.12-Dimethylbenz(a)anthracene	57-97-6	0.1	µg/L		<0.1	----	----	----	----
Acenaphthene	83-32-9	0.1	µg/L		<0.1	----	----	----	----
Acenaphthylene	208-96-8	0.1	µg/L		<0.1	----	----	----	----
Anthracene	120-12-7	0.1	µg/L		<0.1	----	----	----	----
Benz(a)anthracene	56-55-3	0.1	µg/L		<0.1	----	----	----	----
Benzo(a)pyrene	50-32-8	0.05	µg/L		<0.05	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.1	µg/L		<0.1	----	----	----	----
Benzo(e)pyrene	192-97-2	0.1	µg/L		<0.1	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.1	µg/L		<0.1	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.1	µg/L		<0.1	----	----	----	----
Chrysene	218-01-9	0.1	µg/L		<0.1	----	----	----	----
Coronene	191-07-1	0.1	µg/L		<0.1	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.1	µg/L		<0.1	----	----	----	----
Fluoranthene	206-44-0	0.1	µg/L		<0.1	----	----	----	----
Fluorene	86-73-7	0.1	µg/L		<0.1	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.1	µg/L		<0.1	----	----	----	----
Naphthalene	91-20-3	0.1	µg/L		<0.1	----	----	----	----
Perylene	198-55-0	0.1	µg/L		<0.1	----	----	----	----
Phenanthrene	85-01-8	0.1	µg/L		<0.1	----	----	----	----
Pyrene	129-00-0	0.1	µg/L		<0.1	----	----	----	----
^ Sum of PAHs	----	0.05	µg/L		<0.05	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.05	µg/L		<0.05	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**93.9**	----	----	----	----
Toluene-D8	2037-26-5	2	%		**109**	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		**107**	----	----	----	----
EP132T: Base/Neutral Extractable Surrogates									
2-Fluorobiphenyl	321-60-8	0.1	%		**64.1**	----	----	----	----
Anthracene-d10	1719-06-8	0.1	%		**69.0**	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%		**80.8**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128
EP132T: Base/Neutral Extractable Surrogates			
2-Fluorobiphenyl	321-60-8	43	135
Anthracene-d10	1719-06-8	48	138
4-Terphenyl-d14	1718-51-0	48	144

QUALITY CONTROL REPORT

Work Order	: **ES2032425**	Page	: 1 of 6
Client	: **GHD PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR HENRY LUO	Contact	: Angus Harding
Address	: LEVEL 15, 133 CASTLEREAGH STREET SYDNEY NSW, AUSTRALIA 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: +61 02 9239 7100	Telephone	: +61 2 8784 8555
Project	: 21-27234 Central	Date Samples Received	: 15-Sep-2020
Order number	: 2127234	Date Analysis Commenced	: 16-Sep-2020
C-O-C number	: ----	Issue Date	: 22-Sep-2020
Sampler	: Terry Nham		
Site	:		
Quote number	: EN/005		
No. of samples received	: 1		
No. of samples analysed	: 1		

Accreditation No. 825
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This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG020F: Dissolved Metals by ICP-MS (QC Lot: 3265584)									
ES2032096-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.010	0.010	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.004	0.004	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.028	0.028	0.00	No Limit
ES2032621-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	0.0004	0.0003	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.003	0.003	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.005	0.005	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.022	0.023	4.63	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 3265585)									
ES2032429-001	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
ES2032617-004	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3258695)									
ES2032479-002	Anonymous	EP071: C15 - C28 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	µg/L	<50	<50	0.00	No Limit
		EP071: C29 - C36 Fraction	----	50	µg/L	<50	<50	0.00	No Limit
ES2032479-001	Anonymous	EP071: C15 - C28 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	µg/L	<50	<50	0.00	No Limit
		EP071: C29 - C36 Fraction	----	50	µg/L	<50	<50	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3258891)									
ES2032286-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	30	30	0.00	No Limit
ES2032433-002	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3258695)									
ES2032479-002	Anonymous	EP071: >C10 - C16 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
		EP071: >C16 - C34 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
ES2032479-001	Anonymous	EP071: >C10 - C16 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
		EP071: >C16 - C34 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3258891)									
ES2032286-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
ES2032433-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EP080: BTEXN (QC Lot: 3258891)									
ES2032286-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
ES2032433-002	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit

Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 3265584)								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	93.2	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	93.9	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	94.9	85.0	111
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	90.8	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	90.8	83.0	111
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	89.0	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	90.8	81.0	117
EG035F: Dissolved Mercury by FIMS (QCLot: 3265585)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	98.1	83.0	105
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3258695)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	60.8	55.8	112
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	75.6	71.6	113
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	75.8	56.0	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3258891)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	102	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3258695)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	62.2	57.9	119
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	79.2	62.5	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	70.4	61.5	121
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3258891)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	106	75.0	127
EP080: BTEXN (QCLot: 3258891)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	86.4	70.0	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	106	69.0	123
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	108	70.0	120
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	106	69.0	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	108	72.0	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	109	70.0	120
EP132B: Polynuclear Aromatic Hydrocarbons (QCLot: 3259007)								
EP132: 3-Methylcholanthrene	56-49-5	0.1	µg/L	<0.1	2 µg/L	103	60.0	120
EP132: 2-Methylnaphthalene	91-57-6	0.1	µg/L	<0.1	2 µg/L	59.1	59.0	123
EP132: 7.12-Dimethylbenz(a)anthracene	57-97-6	0.1	µg/L	<0.1	2 µg/L	122	36.0	144

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP132B: Polynuclear Aromatic Hydrocarbons (QCLot: 3259007) - continued								
EP132: Acenaphthene	83-32-9	0.1	µg/L	<0.1	2 µg/L	70.2	64.0	122
EP132: Acenaphthylene	208-96-8	0.1	µg/L	<0.1	2 µg/L	85.6	64.0	126
EP132: Anthracene	120-12-7	0.1	µg/L	<0.1	2 µg/L	85.4	65.0	127
EP132: Benz(a)anthracene	56-55-3	0.1	µg/L	<0.1	2 µg/L	96.1	64.0	130
EP132: Benzo(a)pyrene	50-32-8	0.05	µg/L	<0.05	2 µg/L	99.6	64.0	126
EP132: Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.1	µg/L	<0.1	2 µg/L	99.6	62.0	126
EP132: Benzo(e)pyrene	192-97-2	0.1	µg/L	<0.1	2 µg/L	96.7	62.0	126
EP132: Benzo(g.h.i)perylene	191-24-2	0.1	µg/L	<0.1	2 µg/L	94.6	56.0	126
EP132: Benzo(k)fluoranthene	207-08-9	0.1	µg/L	<0.1	2 µg/L	100	68.0	130
EP132: Chrysene	218-01-9	0.1	µg/L	<0.1	2 µg/L	95.4	66.0	130
EP132: Coronene	191-07-1	0.1	µg/L	<0.1	2 µg/L	106	35.0	133
EP132: Dibenz(a.h)anthracene	53-70-3	0.1	µg/L	<0.1	2 µg/L	96.9	58.0	128
EP132: Fluoranthene	206-44-0	0.1	µg/L	<0.1	2 µg/L	91.4	65.0	127
EP132: Fluorene	86-73-7	0.1	µg/L	<0.1	2 µg/L	71.8	64.0	124
EP132: Indeno(1.2.3.cd)pyrene	193-39-5	0.1	µg/L	<0.1	2 µg/L	84.2	57.0	127
EP132: Naphthalene	91-20-3	0.1	µg/L	<0.1	2 µg/L	55.7	54.0	128
EP132: Perylene	198-55-0	0.1	µg/L	<0.1	2 µg/L	96.6	66.0	130
EP132: Phenanthrene	85-01-8	0.1	µg/L	<0.1	2 µg/L	85.0	65.0	129
EP132: Pyrene	129-00-0	0.1	µg/L	<0.1	2 µg/L	91.2	66.0	128

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EG020F: Dissolved Metals by ICP-MS (QCLot: 3265584)							
ES2032425-001	QC01	EG020A-F: Arsenic	7440-38-2	1 mg/L	101	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	108	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	108	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	105	70.0	130
		EG020A-F: Lead	7439-92-1	1 mg/L	104	70.0	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	103	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	106	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 3265585)							
ES2032429-002	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	73.7	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3258695)							
ES2032479-001	Anonymous	EP071: C10 - C14 Fraction	----	200 µg/L	91.0	70.0	130
		EP071: C15 - C28 Fraction	----	250 µg/L	120	71.0	130
		EP071: C29 - C36 Fraction	----	200 µg/L	104	67.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3258891)							
ES2032286-001	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	104	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3258695)							
ES2032479-001	Anonymous	EP071: >C10 - C16 Fraction	----	250 µg/L	93.1	70.0	130
		EP071: >C16 - C34 Fraction	----	350 µg/L	98.8	75.0	130
		EP071: >C34 - C40 Fraction	----	150 µg/L	83.0	67.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3258891)							
ES2032286-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	105	70.0	130
EP080: BTEXN (QCLot: 3258891)							
ES2032286-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	96.0	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	119	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	118	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	116	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	117	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	94.0	70.0	130

CHAIN OF CUSTODY

ALS Laboratory: please tick →

☐ADELAIDE 21 Burma Road Pooraka SA 5095 Ph: 08 8359 0890 E: adelaide@alsglobal.com
☐BRISBANE 32 Shand Street Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com
☐GLADSTONE 46 Callemondah Drive Clinton QLD 4680. Ph: 07 7471 5600 E: gladstone@alsglobal.com
☐MACKAY 78 Harbour Road Mackay QLD 4740 Ph: 07 4944 0177 E: mackay@alsglobal.com
☐MELBOURNE 2-4 Westall Road Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsglobal.com
☐MUDGEE 27 Sydney Road Mudgee NSW 2850 Ph: 02 6372 6735 E: mudgee.mail@alsglobal.com
☐NEWCASTLE 5 Rose Gum Road Warabrook NSW 2304 Ph: 02 4958 9433 E: samples.newcastle@alsglobal.com
☐NOWRA 4/13 Geary Place North Nowra NSW 2541 Ph: 024423 2063 E: nowra@alsglobal.com
☐PERTH 10 Hod Way, Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com
☐SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com
☐TOWNSVILLE 14-15 Desma Court Bohle QLD 4818 Ph: 07 4796 0600 E: townsville environmental@alsglobal.com
☐WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: portkembla@alsglobal.com

CLIENT: GHD Pty Ltd	**TURNAROUND REQUIREMENTS** (Standard TAT may be longer for some tests e.g., Ultra Trace Organics)	☒ Standard TAT (List due date):	**FOR LABORATORY USE ONLY (Circle)**
OFFICE: Sydney		☐ Non Standard or urgent TAT (List due date):	Custody Seal Intact? Yes No N/A
PROJECT: 21-27234 Central	**ALS QUOTE NO.:** EN/005/19	**COC SEQUENCE NUMBER (Circle)**	Free ice / frozen ice bricks present upon receipt? Yes No N/A
ORDER NUMBER: 2127234		COC: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt: °C
PROJECT MANAGER: Henry Luo	**CONTACT PH:** 02 9239 7044 / 0414 090 002	OF: 1 2 3 4 5 6 7	Other comment:
SAMPLER: Terry Nham	**SAMPLER MOBILE:** 0403 251 883	**RELINQUISHED BY:**	**RECEIVED BY:**
COC emailed to ALS? (YES / NO)	**EDD FORMAT (or default):** ESDAT	Terry Nham (GHD)	
Email Reports to: henry.luo@ghd.com terry.nham@ghd.com		DATE/TIME: 15/9/2020	DATE/TIME: 15/9 9:49
Email Invoice to (will default to PM if no other addresses are listed):		**RELINQUISHED BY:** DATE/TIME:	**RECEIVED BY:** DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).																				
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS	TRH / BTEXN / 8 Metals (W-5)	PAH - Ultra Trace (EP132B)																	
1	QC01	14/9/2020	Water		9	X	X																	
					TOTAL																			

Environmental Division Sydney
Work Order Reference
ES2032425

Telephone : + 61-2-8784 8555

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass;
Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.