



SITE HYDROGEOLOGY REPORT

Hakone Road and Woongarra Road, Woongarra NSW 2259

Woolworths Pty Ltd – May 2025



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SITE HYDROGEOLOGY REPORT

262 Hakone Road,
Woongarra, NSW 2259

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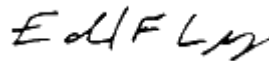
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1. INTRODUCTION

Geo-Logix Pty Ltd (Geo-Logix) was engaged by Woolworths Group Ltd (Woolworths) to conduct a hydrogeological study of the site located at 262 Hakone Road, Woongarra NSW 2259 (Figure 1).

It is understood Woolworths propose to develop the site into a supermarket with speciality shops and an on-grade car park.

1.1. Proposed Development

Development plans provided depict large commercial stores, including a Woolworths, and smaller retail stores along the north and eastern boundaries. The southwestern portion of site consists of an on-grade car park. The car park is accessible at three locations along Woongarra Road to the west of site, including access to a loading area in the far north of site.

Proposed development plans for the site are presented in Attachment A.

1.2. Objective

Geo-Logix was engaged to undertake a groundwater investigation to aid in the construction of the proposed basement at the site. NSW Water has requested a detailed hydrogeological report in accordance with the Department of Planning and Environmental *Minimum requirements for building site groundwater investigations and reporting* (DPE, 2022).

1.3. Scope of Work

In order to assess the potential groundwater impacts as required by DPE 2022, Geo-Logix completed the following scope of work:

- Drilling of three boreholes with subsequent installation groundwater monitoring wells to below the proposed bulk excavation levels. Wells screens were targeted to depths below:
 - MW1: 2.75 – 8.75 mbg
 - MW2: 3.1 – 18.1 mbg
 - MW3: 3.0 – 12.0 mbg
- Survey bores to calculate groundwater gradient and flow directions.
- Sampled groundwater using HydraSleeve methodologies, and measured groundwater parameters including pH, electrical conductivity, redox potential, dissolved oxygen and temperature. Samples were sent to NATA accredited laboratories for analysis of contaminants of potential concern (COPC)
- Performed slug tests in wells MW1 and MW2 to establish formation hydraulic conductivity, required to calculate estimated inflows.
- Installation of groundwater level loggers in wells MW1 and MW2, monitoring variations in groundwater across a period of three months.

- Provision of this Groundwater Investigation Report in accordance with DPE (2022), detailing the findings and implications of the investigation.

2. SITE INFORMATION

2.1. Site Identification

The site comprises the following properties:

Site Address	Lot and Deposited Plan (DP)	Approximate Area (m ²)	Coordinates
262 Hakone Road, Woongarah NSW	Part Lot 5211 DP1200804	40,000	Lat: 33.238°S Long: 151.461°E

The site is a square shaped lot that is currently vacant, with a metal wire fence boundary. The site appears to have been subject to quarrying with excavated benches present in the northern portion of the site.

Three dams exist in the central portion of the site, the largest dam having walls of approximately 3 m in height on the southern side.

The southern portion of the site remains generally untouched, whilst the northern portion of the site is subject to illegal dumping of household and construction wastes (bedframes, car parts, plastic, glass, concrete and potential asbestos fragments).

2.2. Topography

The site is located in a saddle between two hills, positioned on the southwest side of the eastern hill. Ground levels across the site slope downward to the southwest, ranging from approximately 55 mAHD to 32 mAHD. The topography continues to fall toward the south beyond the site boundary. The site has been artificially terraced with excavated benches, and the highest point on-site is situated along the central section of the eastern boundary.

2.3. Surface Water Receptors

Three dams are located on the southern portion of the site. A drainage line runs from the residential housing area underneath Sparks Road (300m south of the site) and continues south. There is a drainage line that is located 10m north of the northwest corner of the site and continues northeast.

2.4. Geology

Review of the NSW 1:100,000 Gosford-Lake Macquarie Geological Sheet 9131 (NSW Government) indicates that the site is divided between two geological units:

- Central/northern portion of the investigation area: Grey to green, grey laminite, to red-brown claystone and siltstone, interbedded with fine- to medium grained green-grey sandstone (Patonga Claystone).

- Southern portion and a small area on the eastern site boundary: Red-brown claystone and siltstone, light green-grey fine-grained sandstone with rare conglomerate (Tuggerah Formation).

2.5. Hydrogeology

Groundwater is expected to follow regional topography and flow from the southern portion of the site south-southwest, and northern portion of the site northeast.

The aquifer type beneath the site is identified as “porous, extensive aquifers of low to moderate productivity”.

A number of monitoring bores are registered from 2007 for monitoring purposes on the adjacent former landfill east of the site. The next closest is 730 m east of unknown purpose. There are no other registered bores within a 1 km radius.

3. INVESTIGATION METHODOLOGY

3.1. Groundwater well Installation

Three groundwater wells were installed using either a track mounted drilling rig (MW1 and MW3) or a canter truck (MW2), both were equipped with solid stem augers. MW1 and MW3 were drilled on 16 April 2025, however due to the steep terrain on site and wet conditions at the time of the investigation, MW2 was drilled with a different rig, on 24 April 2025. Well depths were extended to the below the base of the proposed bulk excavation. A site map with well locations is presented in Figure 1. Well construction logs are presented in Attachment B.

Groundwater wells were installed in accordance with *Minimum Construction Requirements for Water Bores in Australia, 3rd Edition* (NUDL, 2012).

- Constructed with Class 18 50 mm diameter PVC pipe;
- A sand filter pack extended from the base of the borings to 0.5 m above the top of the slotted PVC casing length and was sealed with 1 m of hydrated bentonite pellets above the sand pack;
- Cement grout was used to seal the borehole annulus to surface;
- Wells casings were left standing approximately 1 m above grade;
- After construction, and where groundwater was present, the wells were developed by removing three well volumes with a dedicated disposal bailer (MW1) or decontaminated stainless-steel bailer (MW2). The stainless-steel bailer was used in MW2 due to the high levels of sediment in the well. A HydraSleeve was then installed below the standing water level. The Groundwater development logs are included in Attachment C; and
- Top of well casing (TOC) was then surveyed by a licenced surveyor (Attachment D).

3.2. Groundwater Sampling

Groundwater sampling was conducted on 28 April 2025. Groundwater sampling logs are presented in Attachment E. Calibration certificates are presented in Attachment F.

Groundwater samples from monitoring wells MW1 and MW2 were collected using HydraSleeve sampling methodology. No groundwater was encountered in monitoring well MW3, therefore no sample was collected. Initially, well caps were removed from all boreholes across site, allowing a minimum of 30 minutes for the groundwater level to equalise. The depth to water was then measured to the nearest 0.001 m using an oil/water interface probe. The probe was decontaminated with a triple rinse procedure using PFAS-free detergent between each borehole. Disposable nitrile gloves are worn during sampling and changed between each well. Following well gauging, the HydraSleeve was then retrieved, the groundwater sample collected, ensuring no headspace in volatile vials, and water quality parameters measured using a Water Quality Meter inserted into a separate jar. The total depth of the monitoring well was then recorded.

Groundwater samples were collected in laboratory prepared containers. Samples were labelled with unique sample ID, placed on ice in an esky, and transported under chain of custody to a NATA accredited laboratory (Eurofins) for analysis of the following COPC in accordance with the *Minimum Requirements for Building Site Groundwater Investigations and Reporting (NSW DPE, 2022)*:

Task	Parameter/Analyte
Physical parameters	Alkalinity, electrical conductivity (EC), pH, redox potential (Eh), total dissolved solids (TDS) and total hardness
Major anions	Sulphate (SO_4^{2-}), chloride (Cl^-), bicarbonate (HCO_3^-)
Major cations	Calcium (Ca^{2+}), magnesium (Mg^{2+}), sodium (Na^+) and potassium (K^+)
Inorganics and heavy metals	Aluminium (Al), antimony (Sb), arsenic (As), barium (Ba), boron (B), cadmium (Cd), chromium (Cr), copper (Cu), iron (Fe), lead (Pb), lithium (Li), manganese (Mn), mercury (Hg), nickel (Ni), selenium (Se), silver (Ag) and zinc (Zn)
Nutrients	Ammonia (NH_3), nitrate (NO_3^-), total nitrogen (N) and total phosphorus (P)
Microbiological organisms	Faecal coliforms, faecal streptococci and E. coli
Organic compounds	Total Petroleum Hydrocarbons (TPH), Polyaromatic Hydrocarbons (PAH), benzene, toluene, ethylbenzene and xylenes (BTEX), pesticides (OCPS, OPPs), polychlorinated biphenyls (PCBs), Semi-volatile organic compounds (SVOCs), Volatile organic compounds (VOCs), phenols and methane
Fluorinated Compounds	PFAS

3.3. Assessment Criteria

To aid in considering groundwater disposal options, Geo-Logix has assessed groundwater analytical data against the following criteria:

- NEPM Health Screening Levels D (HSLs D)
- NEPM Groundwater Investigation Levels (GILs) Freshwater
- NHMRC Recreational Water Guidelines

- ANZECC Guidelines for Fresh and Marine Water Quality, Water Quality for Irrigation and General Water Uses: Guidelines (Draft 2024)
- PFAS NEMP 3.0 (Recreational and Freshwater 95% Species Protection)

3.4. Quality Assurance

Quality control procedures including decontaminating sampling equipment with a solution of Liquinox® and deionised water and rinsing with water between each sampling location. Disposable gloves were changed between each sampling location, together with the use of PFAS safe products including HDPE hydrasleeves, PVC bailers and polypropylene cord.

Quality control (QC) sampling was undertaken in general accordance with specifications outlined in AS4482.1, *Guide to Sampling and Investigation of Potentially Contaminated Soil*. Field QC samples were collected and included the following:

Sample Identification	Sample Type	Sample Matrix	Rate of Collection
DW1	Field duplicate of MW2	Water	1 in 2 samples
TW1	Field triplicate of MW2	Water	1 in 2 samples
RW1	Rinsate of Interface Probe	Water	1 per day
SPIKE	Transport spike sample	Water	1 per sample batch
BLANK	Transport blank sample	Water	1 per sample batch

Note – Rate of QC sample collection specified as 1 in 20 samples in AS4482.1

The laboratory internal QC procedures are consistent with NEPM policy on laboratory analysis. Quality Assurance and Quality Control groundwater analytical results are summarised in Table 1 to 3.

3.5. Hydraulic Conductivity Testing

Falling head aquifer tests were carried out in groundwater monitoring wells MW1 and MW2 to estimate the hydraulic conductivity of the aquifer materials. The tests involved rapidly lowering the water level within the well, achieved by removing water using either a submersible pump or a bailer. This sudden removal of water created a head displacement (drawdown) from the static equilibrium level.

The water level recovery was monitored by measuring the water level at precise time intervals until the well returned to its original static level or until recovery had sufficiently stabilised. Water level measurements were collected using an oil/water interface probe.

3.6. Groundwater Elevation Monitoring

In-Situ Inc Rugged Troll 100 data loggers were installed in two groundwater monitoring wells (MW1 and MW2) for continuous groundwater elevation monitoring over a period of 3 months. The data will be used to evaluate groundwater recharge trends and seasonal influence on plume behaviour and/or contaminant concentrations.

4. INVESTIGATION RESULTS

4.1. Site Geology

The following sections contain a summarised account of the site surface and subsurface. For detailed descriptions of individual locations please refer to the attached boring logs. Previous intrusive investigations completed by Geo-Logix at the site have been incorporated into the site geology. Borehole logs and accompanying site map are presented in Attachment G.

Filling

Anthropogenic fill was encountered in multiple locations across the site, with variable depth and composition. Fill materials ranged from fine to medium grained silty sand to sandy gravel. The maximum depth recorded was 1.0 mbg, with most locations showing limited fill thickness between 0.3 mbg and 0.8 mbg. In location MW2, the ground surface consisted of a 30 mm layer of asphalt with underlying aggregate base coarse.

Native Soils

The natural soil profile consists predominantly of clay rich horizons, exhibiting a range of colours from reddish yellow to grey. Variations in plasticity and texture suggest lateral and vertical heterogeneity, possible linked to differential weathering of underlying bedrocks units. High plasticity clay and sandy clay were observed in several boreholes, overlying a sandstone bedrock. These fine-grained soils may correspond to in situ weathering of the underlying Patonga Claystone or Tuggerah Formation, with the clay rich layers representing residual soil horizons. The observed reddish-yellow coloration, particularly in the upper horizons, suggests prolonged exposure to oxidizing conditions, while gray tones at depth may indicate past water saturation or reducing environments.

Bedrock

Bedrock was encountered at varying depths across the site, in some areas it was observed outcropping at the surface, whilst down-gradient it was encountered at 6 mbg. The encountered bedrock varies considerably across the site; sandstone bedrock exhibited variable degrees of weathering, and was interbedded with claystone and shale beds throughout. Due to the varied topography on site, competent sandstone was often encountered at the surface, underlying more weathered sandstone and clays. At the location borehole MW2, and at the highest elevation on site, a conglomerate of the Tuggerah Formation was encountered from 53.9 to 44.4 mAHD.

A summarised geology is presented in the table below:

Strata	Top of strata depth (mAHD)		
	MW1	MW2	MW3
Fill	44.7	55.0	49.0
Natural Soil	44.4	--	48.8
Weathered Sandstone/Siltstone Bedrock	44.1	49.7	43.0
Conglomerate Bedrock	--	54.0	--
Siltstone Bedrock	--	44.5	--

4.2. Site Hydrogeology

Based on Geo-Logix's previous soil borings and groundwater monitoring wells, groundwater is thought to exist as an unconfined aquifer within the interbedded sandstone and siltstone beds. Groundwater monitoring well details are summarised in the following table:

Well ID	TOC Elevation (mAHD)	Total Well Depth (mbTOC)	Depth of Groundwater strike during drilling (mbg)	Stabilised Depth to water (mbTOC) 28/04/2025	Groundwater Elevation (mAHD) 28/04/2025	Well screen (mbg)
MW1	45.743	9.770	--	8.065	37.678	2.75 – 8.75
MW2	55.943	19.040	10.5	10.810	45.133	3.1 – 18.1
MW3	49.912	12.949	--	--	--	3.0 – 12.0

-- No Groundwater Encountered

Groundwater levels observed in the monitoring wells suggest a hydraulic gradient towards the west. However, with groundwater encountered in only two wells, triangulation of the groundwater elevations was not possible. The absence of groundwater in MW3, located downgradient, supports the likelihood of a south-southwesterly groundwater flow direction, generally consistent with the site's surface topography.

A site map including ground surface, groundwater elevation and depth of hole is presented in Figure 2.

4.3. Observed Contamination

No odour, discolouration or sheen indicative of hydrocarbon impact was observed within soils or groundwater during the investigation.

4.4. Aquifer Hydraulic Conductivity

Slug tests were conducted in monitoring wells MW1 and MW2 to determine the hydraulic conductivities of the underlying aquifer. Slug test results were solved using the Bouwer-Rice solution for unconfined aquifers with the computer software Aqtesolv®. This data is presented in Attachment H.

Calculated hydraulic conductivities are summarised in the following table:

Well ID	Hydraulic Conductivity (m/min)		
	Test 1	Test 2	Test 3
MW1	5.422E-7	4.581E-7	7.796E-7
MW2	5.13E-7	4.201E-7	--

Hydraulic conductivity for MW1 was calculated at 7.796×10^{-7} m/min, and 5.15×10^{-7} m/min for MW2. The hydraulic conductivity is consistent with that of an interbedded fine to medium sandstone and siltstone geology (Freeze and Cherry, 1979).

Locally increased hydraulic conductivity may be encountered in association with fractures in the bedrock exposed during excavation.

4.5. Water Quality Parameters

Groundwater sampling defined the following water quality characteristics from wells MW1 and MW2:

Water Quality Characteristics		
Parameters	MW1	MW2
Electrical Conductivity (uS/cm)	1007	548
pH Range	5.13	5.03
Redox (mV)	54.3	21.4
Dissolved Oxygen (mg/L)	5.67	2.04
Temperature (°C)	20.5	22.7

4.6. Groundwater Analytical Data

Groundwater analytical results are summarised in Tables 1 to 13. Laboratory reports are presented in Attachment I.

Physical Parameters

The groundwater is slightly alkaline with a pH of 6.1-6.2, below the recommended recreational criteria. Based on groundwater conductivity of 240-860 $\mu\text{S}/\text{cm}$ and Total Dissolved Solids (TDS) of 110-590 mg/L, onsite groundwater is classed as non-saline. The groundwater can be considered 'hard' with a hardness value of 180-210 mg/L. (Table 1).

Anions and Cations

Anions and Cations, including the calculated Sodium Adsorption Ratio (SAR) were not detected at concentrations above the adopted assessment criteria (Table 2).

Petroleum Hydrocarbons

TRH and BTEX were not detected at concentrations above the laboratory reporting limits for all samples analysed (Table 3).

Volatile Organic Compounds

Volatile Organic Compounds were not detected at concentrations above the laboratory reporting limits for all samples analysed (Table 4).

Semi Volatile Organic Compounds

Semi-Volatile Organic Compounds were not detected at concentrations above the laboratory reporting limits for all samples analysed (Table 5).

Polyaromatic Hydrocarbons

Polyaromatic Hydrocarbons were not detected at concentrations above the laboratory reporting limits for all samples analysed (Table 6).

Organophosphate Pesticides

Organophosphate Pesticides (OPP) were not detected at concentrations above the laboratory reporting limits for all samples analysed (Table 7).

Polychlorinated Biphenyls

Polychlorinated Biphenyls were not detected at concentrations above the laboratory reporting limits for all samples analysed (Table 8).

Phenols

Phenols were not detected at concentrations above the laboratory reporting limits for all samples analysed (Table 9).

Heavy Metals

Zinc (Zn) was detected at concentrations above the adopted assessment criteria for protection of freshwater ecosystems in all groundwater samples analysed (Table 10). The detected concentrations are typical of natural background levels for the regional geology.

Other heavy metals were not detected at concentrations above the adopted assessment criteria in all groundwater samples.

Nutrients

Total phosphate was detected at concentrations above adopted assessment criteria in all groundwater samples (Table 11).

Pathogens

Total coliforms were detected at very elevated concentrations (up to 2400 x LOR). There are no widely used screening criteria for total coliforms and in the absence of other evidence, total coliforms are not considered indicative of the presence of human or animal sewerage.

Escherichia coli was not detected in groundwater sampled from MW1, but was detected in groundwater sampled from MW2 at concentrations below the adopted criteria for irrigation use (Table 12).

Per- and Polyfluorinated Alkyl Substances

PFASs were not detected above laboratory reporting limits in all groundwater samples analysed, with the exception of the triplicate sample TW1, detecting PFHxS at the limit of detection (0.01ug/L) (Table 13).

4.7. QA/QC Results

Groundwater duplicate and triplicate results are within the adopted acceptance criteria of 30-50% (AS4482.1).

A summary of Laboratory QA/QC data is presented on the following table.

Report #	Analysis Within Holding Time	Surrogate Recovery	Lab. Duplicate RPD %	Lab Matrix Spike Recovery	Lab. Control Sample	Lab Method Blank
1213511-W	X	✓	✓	✓	✓	✓
1213846-W	✓	✓	✓	✓	✓	✓
✓ = Pass X = Fail (refer to report text)						
Quality Assurance Criteria			Quality Control Criteria			
Holding Times			Accuracy			
TRH/BTEXN/VOC/OCP/OPP/Phenols/: 7 days Nutrients: 28 days Anions and Cations: 28 days Metals: 180 days water. PFAS: 28 days water			Matrix spike and control sample 70–130% and 30–130% for Phenols. Surrogate recovery 50–150% and 20–130% for Phenols.			
			Precision			
			Method Blank Not detected Duplicate – No limit (<10xEQL), 0–50% (10–20xEQL), 0–30% (>20xEQL)			

Report 1213511-W

Analysis of Redox Potential, and OPP in sample MW2, were performed outside of holding times. Given both groundwater samples did not detect OPP concentrations above laboratory detection limits, this will not affect the outcome of the report.

Geo-Logix accepts the integrity of the analytical data.

5. DISCUSSION

5.1. Groundwater Model for Construction Dewatering

Intrusive investigations at the site encountered groundwater at depths corresponding to elevations between 33.7 mAHD and 44.5 mAHD, with stabilised groundwater levels ranging from 37.678 mAHD (MW1) to 45.133 mAHD (MW2). Groundwater elevations correlate with surface topography and were highest in the northeastern portion of the proposed excavation area. Given the proposed bulk excavation level of 40.25 mAHD, groundwater inflow should be expected during excavation works, within the northeastern section of the site. Groundwater elevations were below the proposed bulk excavation level in groundwater well locations MW1 and MW3.

Geo-Logix has calculated dewatering volumes using two analytical models:

- Linear trench flow to the excavation perimeter [$Q/m \text{ trench} = K \cdot (H^2 - h^2)/R_0$]; and
- Treating the excavation as a single well point [$Q = \pi \cdot K \cdot (H^2 - h^2)/\ln(R_0/r_w)$].

These calculations were performed using variations of the following parameters:

- The measured hydraulic conductivity (K) of 1.3×10^{-8} m/s;

- Height from the base of the aquifer to the static water level, measured from 3 m below the well depth (H) 11.5 m;
- Height from the base of the aquifer to the water level in the trench or well, measured from 3 m below the well depth (h) 6.5 m;
- An assumed wellpoint radius (r_w) of 0.05 m; and
- An assumed radius of influence (R_0) of 2 m.

Groundwater Take

Based on these preliminary dewatering calculations and past experience, Geo-Logix expects that total groundwater inflow would not exceed 10 m³/day. A summary of the calculated inflow rates is presented in the following table:

Inflow per m length of perimeter wall (m ³ /sec)	Inflow per m length of perimeter wall (m ³ /day)	Inflow into excavation (m ³ /day)	Total expected inflow into excavation (ML/year)
2.9×10^{-7}	0.025	6.32	2.26

Dewatering is expected to be achievable using sump and pump methods, and French drains placed as conditions may require.

Groundwater inflows into excavations are anticipated to be variable, influenced by seasonal fluctuations, rainfall events, and local subsurface conditions. The presence of on-site dams may also contribute to perched water conditions in some areas, potentially increasing localised inflows during periods of high precipitation.

Data loggers installed in MW1 and MW2 will identify the degree to which groundwater is influenced by seasonal fluctuations/rainfall events. This data will be provided in an updated version of this report.

6. CONCLUSION

Currently, groundwater elevation data is limited to a single measurement, data loggers installed in April 2025 will provide daily groundwater elevations over a three month period to establish the groundwaters response to changing rainfall and evaporations rates, and assist in a predicted 'highest groundwater elevation'. Based on calculated hydraulic conductivities and groundwater inflow rates, dewatering of the proposed excavation will be manageable using sump and pump methods and French drains.

Geo-Logix expects that following construction, groundwater seepage from exposed rock faces will be minor and may be collected by a french drain at the base of the rock wall to allow re-infiltration.

The collected groundwater parameters and analytical data are considered sufficient to form a baseline to facilitate the consideration of onsite or offsite disposal of extracted groundwater in the Dewatering Management Plan (if required). The assessment of disposal options will need to consider the existing water quality of the nominated receiving environment.

7. LIMITATIONS

This report should be read in full, and no executive summary, conclusion or other section of the report may be used or relied on in isolation, or taken as representative of the report as a whole. No responsibility is

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Without limiting the paragraph above, where laboratory tests have been carried out by others on Geo-Logix' behalf, the tests are reproduced in this validation report on the assumption that the tests are accurate. Geo-Logix has not sought independently to verify the accuracy of those tests and assumes no responsibility in respect of them.

Subsurface site conditions are usually heterogeneous, and change with time. Samples taken from different points on the site may not enable inferences to be drawn about the conditions of areas of the site significantly removed from the sample points, or about any part of the site whatsoever, in particular where the proposed inferences are to be drawn a long time after the date of the report. Geo-Logix assumes no responsibility in respect of any changes in the condition of the Site which have occurred since the date of completion of this report.

8. REFERENCES

- ANZECC & ARMCANZ (2000), Australian & New Zealand Guidelines for Fresh & Marine Water Quality.
- NEPC (1999, Amended) National Environmental Protection Council (Assessment of Site Contamination) Measure 1999 (as amended 2013), National Environmental Protection Council, April 2013.
- NHMRC (2008) Guidelines for Managing Risks in Recreational Water.
- NHMRC (2011), Australian Drinking Water Guidelines (Updated August 2018).
- NHMRC, 2019. Guidance on per- and poly-fluoroalkyl substances (PFAS) in recreational water.

FIGURES



Legend

-  Groundwater Monitoring Wells
-  Site Boundary



Produced by: **Datanest.earth**

Title: SITE MAP	
Report: Groundwater Investigation	
Address: 262 Hakone Road, Woongarra NSW, Australia	
Proj No: 2301027c	Figure No.: 1
Date: 05-05-2025	Size: A4
Version: FINAL	Scale: 1:1774
Projection: Web Mercator	



Legend

- Groundwater Monitoring Wells
- 44.732 Surface Elevation (mAHD)
- 37.678 Groundwater Elevation (mAHD)
- 35.973 Well Base Elevation (mAHD)
- Site Boundary

MW1
44.732
37.678
35.973

MW2
54.963
45.133
36.903

MW3
48.994
Dry
36.963



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Title: SURFACE AND GROUNDWATER ELEVATIONS	
Report: Groundwater Investigation	
Address: 262 Hakone Road, Woongarah NSW, Australia	
Proj No: 2301027c	Figure No.: 2
Date: 08-05-2025	Size: A4
Version: FINAL	Scale: 1:1774
Projection: Web Mercator	

TABLES



Table 1 : Summary of Groundwater Analytical Data - Physical Parameters

Site Hydrogeology Report

Project No.: 2301027c

262 Hakone Road

Woongarra NSW

[illegible]

Notes:

Criteria 1 = NHMRC (2008), Guidelines for Managing Risks in Recreational Water.

Total concentrations in mg/L

- = assessment criteria not available

< # or ND = analyte(s) not detected in excess of laboratory reporting limit

-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 2 : Summary of Groundwater Analytical Data - Anions and Cations

Site Hydrogeology Report

Project No.: 2301027c

262 Hakone Road

Woongarra NSW

	Criteria 1	Criteria 2	Criteria 3			
	NHMRC	GILs	ANZECC			
	Recreational	Fresh	Irrigation	Sample ID	MW1	MW2
	Water	Water	& General	Date	28/04/2025	28/04/2025
Chloride	2,500	-	350 ¹		330	40
Nitrate (as N)	-	-	-		0.27	1.1
Nitrite (as N)	-	-	-		0.25	0.03
Sulfate (as SO ₄)	-	-	-		25	20
Bicarbonate Alkalinity (as CaCO ₃)	-	-	-		23	29
Carbonate Alkalinity (as CaCO ₃)	-	-	-		< 20	< 20
Ammonia (as N)	-	-	-		0.03	0.03
Calcium	-	-	-		26	21
Magnesium	-	-	-		35	30
Potassium	-	-	-		19	26
Sodium	-	-	230 ³		150	35
Total Dissolved Solids (TDS)	-	-	-		590	110
Sodium Adsorption Ratio (SAR)	-	-	18 ⁴		4.65	1.15

Notes:

Criteria 1 = NHMRC (2008), Guidelines for Managing Risks in Recreational Water.

Criteria 2 = NEPC (1999) Amended, Groundwater Investigation Levels, Freshwater.

Criteria 3 = ANZECC (2024) Water Quality for Irrigation and General Water Uses: Guidelines (Draft).

Total concentrations in mg/L

- = assessment criteria not available

¹Foliar injury to moderately sensitive crops.

³Foliar injury to moderately sensitive crops.

⁴Growth response to sensitive crops.

< # or ND = analyte(s) not detected in excess of laboratory reporting limit

-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 3 : Summary of Groundwater Analytical Data - Petroleum Hydrocarbons

Site Hydrogeology Report

Project No.: 2301027c

262 Hakone Road

Woongarrah NSW

	Criteria 1	Criteria 2	Criteria 3						
	HSLs - D	NHMRC	GILs						
	Silt	Recreational	Fresh	Sample ID	MW1	MW2	DW1	RPD_DW1	TW1
	4 to <8 m	Water	Water	Date	28/04/2025	28/04/2025	28/04/2025	-	28/04/2025
TRH C ₆ -C ₁₀	-	-	-		< 20	< 20	< 20	nc	< 20
TRH C ₆ -C ₁₀ less BTEX (F1)	NL	-	-		< 20	< 20	< 20	nc	< 20
TRH >C ₁₀ -C ₁₆	-	-	-		< 50	< 50	< 50	nc	< 50
TRH >C ₁₀ -C ₁₆ less Naphthalene (F2)	NL	-	-		< 50	< 50	< 50	nc	< 50
TRH >C ₁₆ -C ₃₄	-	-	-		< 100	< 100	< 100	nc	< 100
TRH >C ₃₄ -C ₄₀	-	-	-		< 100	< 100	< 100	nc	< 100
Benzene	30,000	10	950		< 1	< 1	< 1	nc	< 1
Toluene	NL	8,000	-		< 1	< 1	< 1	nc	< 1
Ethylbenzene	NL	3,000	-		< 1	< 1	< 1	nc	< 1
m&p-Xylenes	-	-	200 ¹		< 2	< 2	< 2	nc	< 2
o-Xylene	-	-	350		< 1	< 1	< 1	nc	< 1
Xylenes - Total	NL	6,000	-		< 3	< 3	< 3	nc	< 3
Naphthalene (MAH)	NL	-	16		< 10	< 10	< 10	nc	< 10

Notes:

Criteria 1 = NEPC (1999) Amended, 'D' Comm./ind. Groundwater Health Screening Levels for vapour intrusion, silt 4 to <8m.

Criteria 2 = NHMRC (2008), Guidelines for Managing Risks in Recreational Water.

Criteria 3 = NEPC (1999) Amended, Groundwater Investigation Levels, Freshwater.

Total concentrations in µg/L

- = assessment criteria not available

NL = not limiting

¹Guideline for p-xylene used conservatively.

DW1 = duplicate of MW2

TW1 = triplicate of MW2

RW1 = rinsate sample

TRIP BLANK = blank sample

TRIP SPIKE = spike sample

RPD = relative percent difference of duplicate/triplicate

nc = RPD not calculated, one or both samples below laboratory reporting limit

< # or ND = analyte(s) not detected in excess of laboratory reporting limit

-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 3 : Summary of Groundwater Analytical Data - Petroleum Hydrocarbons

Site Hydrogeology Report

Project No.: 2301027c

262 Hakone Road

Woongarrah NSW

	Criteria 1	Criteria 2	Criteria 3					
	HSLs - D	NHMRC	GILs					
	Silt	Recreational	Fresh	Sample ID	RPD_TW1	RW1	TRIP BLANK	TRIP SPIKE
	4 to <8 m	Water	Water	Date	-	28/04/2025	28/04/2025	28/04/2025
TRH C ₆ -C ₁₀	-	-	-		<i>nc</i>	< 20	< 20	79%
TRH C ₆ -C ₁₀ less BTEX (F1)	NL	-	-		<i>nc</i>	< 20	< 20	--
TRH >C ₁₀ -C ₁₆	-	-	-		<i>nc</i>	< 50	--	--
TRH >C ₁₀ -C ₁₆ less Naphthalene (F2)	NL	-	-		<i>nc</i>	< 50	--	--
TRH >C ₁₆ -C ₃₄	-	-	-		<i>nc</i>	< 100	--	--
TRH >C ₃₄ -C ₄₀	-	-	-		<i>nc</i>	< 100	--	--
Benzene	30,000	10	950		<i>nc</i>	< 1	< 1	120%
Toluene	NL	8,000	-		<i>nc</i>	< 1	< 1	110%
Ethylbenzene	NL	3,000	-		<i>nc</i>	< 1	< 1	120%
m&p-Xylenes	-	-	200 ¹		<i>nc</i>	< 2	< 2	110%
o-Xylene	-	-	350		<i>nc</i>	< 1	< 1	110%
Xylenes - Total	NL	6,000	-		<i>nc</i>	< 3	< 3	110%
Naphthalene (MAH)	NL	-	16		<i>nc</i>	< 10	< 10	110%

Notes:

Criteria 1 = NEPC (1999) Amended, 'D' Comm./ind. Groundwater Health Screening Levels for vapour intrusion, silt 4 to <8m.

Criteria 2 = NHMRC (2008), Guidelines for Managing Risks in Recreational Water.

Criteria 3 = NEPC (1999) Amended, Groundwater Investigation Levels, Freshwater.

Total concentrations in µg/L

- = assessment criteria not available

NL = not limiting

¹Guideline for p-xylene used conservatively.

DW1 = duplicate of MW2

TW1 = triplicate of MW2

RW1 = rinsate sample

TRIP BLANK = blank sample

TRIP SPIKE = spike sample

RPD = relative percent difference of duplicate/triplicate

nc = RPD not calculated, one or both samples below laboratory reporting limit

< # or ND = analyte(s) not detected in excess of laboratory reporting limit

-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 4 : Summary of Groundwater Analytical Data - Volatile Organic Compounds

Site Hydrogeology Report

Project No.: 2301027c

262 Hakone Road

Woongarra NSW

	Criteria 1	Criteria 2	Criteria 3						
	HSLs - D	NHMRC	GILs						
	Silt	Recreational	Fresh	Sample ID	MW1	MW2	DW1	RPD_DW1	TW1
	4 to <8 m	Water	Water	Date	28/04/2025	28/04/2025	28/04/2025	-	28/04/2025
1.1-Dichloroethane	-	-	-		< 1	< 1	< 1	nc	< 1
1.1-Dichloroethene	-	300	-		< 1	< 1	< 1	nc	< 1
1.1.1-Trichloroethane	-	-	-		< 1	< 1	< 1	nc	< 1
1.1.1.2-Tetrachloroethane	-	-	-		< 1	< 1	< 1	nc	< 1
1.1.2-Trichloroethane	-	-	6,500		< 1	< 1	< 1	nc	< 1
1.1.2.2-Tetrachloroethane	-	-	-		< 1	< 1	< 1	nc	< 1
1.2-Dibromoethane	-	10	-		< 1	< 1	< 1	nc	< 1
1.2-Dichlorobenzene	-	15,000	160		< 1	< 1	< 1	nc	< 1
1.2-Dichloroethane	-	30	-		< 1	< 1	< 1	nc	< 1
1.2-Dichloropropane	-	-	-		< 1	< 1	< 1	nc	< 1
1.2.3-Trichloropropane	-	-	-		< 1	< 1	< 1	nc	< 1
1.2.4-Trimethylbenzene	-	-	-		< 1	< 1	< 1	nc	< 1
1.3-Dichlorobenzene	-	-	260		< 1	< 1	< 1	nc	< 1
1.3-Dichloropropane	-	-	-		< 1	< 1	< 1	nc	< 1
1.3.5-Trimethylbenzene	-	-	-		< 1	< 1	< 1	nc	< 1
1.4-Dichlorobenzene	-	400	60		< 1	< 1	< 1	nc	< 1
2-Butanone (MEK)	-	-	-		< 5	< 5	< 5	nc	< 5
2-Propanone (Acetone)	-	-	-		< 5	< 5	< 5	nc	< 5
4-Chlorotoluene	-	-	-		< 1	< 1	< 1	nc	< 1

Notes:

Criteria 1 = NEPC (1999) Amended, 'D' Comm./ind. Groundwater Health Screening Levels for vapour intrusion, silt 4 to <8m.

Criteria 2 = NHMRC (2008), Guidelines for Managing Risks in Recreational Water.

Criteria 3 = NEPC (1999) Amended, Groundwater Investigation Levels, Freshwater.

Total concentrations in µg/L

- = assessment criteria not available

NL = not limiting

¹Guideline for p-xylene used conservatively.

DW1 = duplicate of MW2

TW1 = triplicate of MW2

RW1 = rinsate sample

RPD = relative percent difference of duplicate/triplicate

nc = RPD not calculated, one or both samples below laboratory reporting limit

< # or ND = analyte(s) not detected in excess of laboratory reporting limit

-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 4 : Summary of Groundwater Analytical Data - Volatile Organic Compounds

Site Hydrogeology Report

Project No.: 2301027c

262 Hakone Road

Woongarra NSW

	Criteria 1	Criteria 2	Criteria 3						
	HSLs - D	NHMRC	GILs						
	Silt	Recreational	Fresh	Sample ID	MW1	MW2	DW1	RPD_DW1	TW1
	4 to <8 m	Water	Water	Date	28/04/2025	28/04/2025	28/04/2025	-	28/04/2025
4-Methyl-2-pentanone (MIBK)	-	-	-		< 5	< 5	< 5	nc	< 5
Allyl chloride	-	-	-		< 1	< 1	< 1	nc	< 1
Benzene	30,000	10	950		< 1	< 1	< 1	nc	< 1
Bromobenzene	-	-	-		< 1	< 1	< 1	nc	< 1
Bromochloromethane	-	-	-		< 1	< 1	< 1	nc	< 1
Bromodichloromethane	-	-	-		< 1	< 1	< 1	nc	< 1
Bromoform	-	-	-		< 1	< 1	< 1	nc	< 1
Bromomethane	-	10	-		< 5	< 5	< 5	nc	< 5
Carbon disulfide	-	-	-		< 1	< 1	< 1	nc	< 1
Carbon Tetrachloride	-	-	-		< 1	< 1	< 1	nc	< 1
Chlorobenzene	-	-	-		< 1	< 1	< 1	nc	< 1
Chloroethane	-	-	-		< 5	< 5	< 5	nc	< 5
Chloroform	-	-	-		< 5	< 5	< 5	nc	< 5
Chloromethane	-	-	-		< 5	< 5	< 5	nc	< 5
cis-1.2-Dichloroethene	-	-	-		< 1	< 1	< 1	nc	< 1
cis-1.3-Dichloropropene	-	-	-		< 1	< 1	< 1	nc	< 1
Dibromochloromethane	-	-	-		< 1	< 1	< 1	nc	< 1
Dibromomethane	-	-	-		< 1	< 1	< 1	nc	< 1
Dichlorodifluoromethane	-	-	-		< 5	< 5	< 5	nc	< 5

Notes:

Criteria 1 = NEPC (1999) Amended, 'D' Comm./ind. Groundwater Health Screening Levels for vapour intrusion, silt 4 to <8m.

Criteria 2 = NHMRC (2008), Guidelines for Managing Risks in Recreational Water.

Criteria 3 = NEPC (1999) Amended, Groundwater Investigation Levels, Freshwater.

Total concentrations in µg/L

- = assessment criteria not available

NL = not limiting

¹Guideline for p-xylene used conservatively.

DW1 = duplicate of MW2

TW1 = triplicate of MW2

RW1 = rinsate sample

RPD = relative percent difference of duplicate/triplicate

nc = RPD not calculated, one or both samples below laboratory reporting limit

< # or ND = analyte(s) not detected in excess of laboratory reporting limit

-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 4 : Summary of Groundwater Analytical Data - Volatile Organic Compounds

Site Hydrogeology Report

Project No.: 2301027c

262 Hakone Road

Woongarra NSW

	Criteria 1	Criteria 2	Criteria 3						
	HSLs - D	NHMRC	GILs						
	Silt	Recreational	Fresh	Sample ID	MW1	MW2	DW1	RPD_DW1	TW1
	4 to <8 m	Water	Water	Date	28/04/2025	28/04/2025	28/04/2025	-	28/04/2025
Ethylbenzene	NL	3,000	-		< 1	< 1	< 1	nc	< 1
Iodomethane	-	-	-		< 1	< 1	< 1	nc	< 1
Isopropyl benzene (Cumene)	-	-	-		< 1	< 1	< 1	nc	< 1
m&p-Xylenes	-	-	200 ¹		< 2	< 2	< 2	nc	< 2
Methylene Chloride	-	40	-		< 5	< 5	< 5	nc	< 5
o-Xylene	-	-	350		< 1	< 1	< 1	nc	< 1
Styrene	-	300	-		< 1	< 1	< 1	nc	< 1
Tetrachloroethene	-	500	-		< 1	< 1	< 1	nc	< 1
Toluene	NL	8,000	-		< 1	< 1	< 1	nc	< 1
trans-1.2-Dichloroethene	-	-	-		< 1	< 1	< 1	nc	< 1
trans-1.3-Dichloropropene	-	-	-		< 1	< 1	< 1	nc	< 1
Trichloroethene	-	-	-		< 1	< 1	< 1	nc	< 1
Trichlorofluoromethane	-	-	-		< 5	< 5	< 5	nc	< 5
Vinyl chloride	-	3	-		< 5	< 5	< 5	nc	< 5
Xylenes - Total	NL	6,000	-		< 3	< 3	< 3	nc	< 3
1.2-Dichloroethene (Total)	-	600	-		ND	ND	ND	nc	ND

Notes:

Criteria 1 = NEPC (1999) Amended, 'D' Comm./ind. Groundwater Health Screening Levels for vapour intrusion, silt 4 to <8m.

Criteria 2 = NHMRC (2008), Guidelines for Managing Risks in Recreational Water.

Criteria 3 = NEPC (1999) Amended, Groundwater Investigation Levels, Freshwater.

Total concentrations in µg/L

- = assessment criteria not available

NL = not limiting

¹Guideline for p-xylene used conservatively.

DW1 = duplicate of MW2

TW1 = triplicate of MW2

RW1 = rinsate sample

RPD = relative percent difference of duplicate/triplicate

nc = RPD not calculated, one or both samples below laboratory reporting limit

< # or ND = analyte(s) not detected in excess of laboratory reporting limit

-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 4 : Summary of Groundwater Analytical Data - Volatile Organic Compounds

Site Hydrogeology Report

Project No.: 2301027c

262 Hakone Road

Woongarrah NSW

	Criteria 1	Criteria 2	Criteria 3			
	HSLs - D	NHMRC	GILs			
	Silt	Recreational	Fresh	Sample ID	RPD_TW1	RW1
	4 to <8 m	Water	Water	Date	-	28/04/2025
1.1-Dichloroethane	-	-	-		nc	< 1
1.1-Dichloroethene	-	300	-		nc	< 1
1.1.1-Trichloroethane	-	-	-		nc	< 1
1.1.1.2-Tetrachloroethane	-	-	-		nc	< 1
1.1.2-Trichloroethane	-	-	6,500		nc	< 1
1.1.2.2-Tetrachloroethane	-	-	-		nc	< 1
1.2-Dibromoethane	-	10	-		nc	< 1
1.2-Dichlorobenzene	-	15,000	160		nc	< 1
1.2-Dichloroethane	-	30	-		nc	< 1
1.2-Dichloropropane	-	-	-		nc	< 1
1.2.3-Trichloropropane	-	-	-		nc	< 1
1.2.4-Trimethylbenzene	-	-	-		nc	< 1
1.3-Dichlorobenzene	-	-	260		nc	< 1
1.3-Dichloropropane	-	-	-		nc	< 1
1.3.5-Trimethylbenzene	-	-	-		nc	< 1
1.4-Dichlorobenzene	-	400	60		nc	< 1
2-Butanone (MEK)	-	-	-		nc	< 5
2-Propanone (Acetone)	-	-	-		nc	< 5
4-Chlorotoluene	-	-	-		nc	< 1

Notes:

Criteria 1 = NEPC (1999) Amended, 'D' Comm./ind. Groundwater Health Screening Levels for vapour intrusion, silt 4 to <8m.

Criteria 2 = NHMRC (2008), Guidelines for Managing Risks in Recreational Water.

Criteria 3 = NEPC (1999) Amended, Groundwater Investigation Levels, Freshwater.

Total concentrations in µg/L

- = assessment criteria not available

NL = not limiting

¹Guideline for p-xylene used conservatively.

DW1 = duplicate of MW2

TW1 = triplicate of MW2

RW1 = rinsate sample

RPD = relative percent difference of duplicate/triplicate

nc = RPD not calculated, one or both samples below laboratory reporting limit

< # or ND = analyte(s) not detected in excess of laboratory reporting limit

-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 4 : Summary of Groundwater Analytical Data - Volatile Organic Compounds

Site Hydrogeology Report

Project No.: 2301027c

262 Hakone Road

Woongarra NSW

	Criteria 1	Criteria 2	Criteria 3			
	HSLs - D	NHMRC	GILs			
	Silt	Recreational	Fresh	Sample ID	RPD_TW1	RW1
	4 to <8 m	Water	Water	Date	-	28/04/2025
4-Methyl-2-pentanone (MIBK)	-	-	-		nc	< 5
Allyl chloride	-	-	-		nc	< 1
Benzene	30,000	10	950		nc	< 1
Bromobenzene	-	-	-		nc	< 1
Bromochloromethane	-	-	-		nc	< 1
Bromodichloromethane	-	-	-		nc	< 1
Bromoform	-	-	-		nc	< 1
Bromomethane	-	10	-		nc	< 5
Carbon disulfide	-	-	-		nc	< 1
Carbon Tetrachloride	-	-	-		nc	< 1
Chlorobenzene	-	-	-		nc	< 1
Chloroethane	-	-	-		nc	< 5
Chloroform	-	-	-		nc	< 5
Chloromethane	-	-	-		nc	< 5
cis-1.2-Dichloroethene	-	-	-		nc	< 1
cis-1.3-Dichloropropene	-	-	-		nc	< 1
Dibromochloromethane	-	-	-		nc	< 1
Dibromomethane	-	-	-		nc	< 1
Dichlorodifluoromethane	-	-	-		nc	< 5

Notes:

Criteria 1 = NEPC (1999) Amended, 'D' Comm./ind. Groundwater Health Screening Levels for vapour intrusion, silt 4 to <8m.

Criteria 2 = NHMRC (2008), Guidelines for Managing Risks in Recreational Water.

Criteria 3 = NEPC (1999) Amended, Groundwater Investigation Levels, Freshwater.

Total concentrations in µg/L

- = assessment criteria not available

NL = not limiting

¹Guideline for p-xylene used conservatively.

DW1 = duplicate of MW2

TW1 = triplicate of MW2

RW1 = rinsate sample

RPD = relative percent difference of duplicate/triplicate

nc = RPD not calculated, one or both samples below laboratory reporting limit

< # or ND = analyte(s) not detected in excess of laboratory reporting limit

-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 4 : Summary of Groundwater Analytical Data - Volatile Organic Compounds

Site Hydrogeology Report

Project No.: 2301027c

262 Hakone Road

Woongarra NSW

	Criteria 1	Criteria 2	Criteria 3			
	HSLs - D	NHMRC	GILs			
	Silt	Recreational	Fresh	Sample ID	RPD_TW1	RW1
	4 to <8 m	Water	Water	Date	-	28/04/2025
Ethylbenzene	NL	3,000	-		nc	< 1
Iodomethane	-	-	-		nc	< 1
Isopropyl benzene (Cumene)	-	-	-		nc	< 1
m&p-Xylenes	-	-	200 ¹		nc	< 2
Methylene Chloride	-	40	-		nc	< 5
o-Xylene	-	-	350		nc	< 1
Styrene	-	300	-		nc	< 1
Tetrachloroethene	-	500	-		nc	< 1
Toluene	NL	8,000	-		nc	< 1
trans-1.2-Dichloroethene	-	-	-		nc	< 1
trans-1.3-Dichloropropene	-	-	-		nc	< 1
Trichloroethene	-	-	-		nc	< 1
Trichlorofluoromethane	-	-	-		nc	< 5
Vinyl chloride	-	3	-		nc	< 5
Xylenes - Total	NL	6,000	-		nc	< 3
1.2-Dichloroethene (Total)	-	600	-		nc	ND

Notes:

Criteria 1 = NEPC (1999) Amended, 'D' Comm./ind. Groundwater Health Screening Levels for vapour intrusion, silt 4 to <8m.

Criteria 2 = NHMRC (2008), Guidelines for Managing Risks in Recreational Water.

Criteria 3 = NEPC (1999) Amended, Groundwater Investigation Levels, Freshwater.

Total concentrations in µg/L

- = assessment criteria not available

NL = not limiting

¹Guideline for p-xylene used conservatively.

DW1 = duplicate of MW2

TW1 = triplicate of MW2

RW1 = rinsate sample

RPD = relative percent difference of duplicate/triplicate

nc = RPD not calculated, one or both samples below laboratory reporting limit

< # or ND = analyte(s) not detected in excess of laboratory reporting limit

-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 5 : Summary of Groundwater Analytical Data - Semi-Volatile Organic Compounds

Woongarra - Groundwater Investigation

Project No.: 2301027c

262 Hakone Road,

Woongarra NSW

	Criteria 1	Criteria 2	Criteria 3			
	HSLs - D	NHMRC	GILs			
	Silt	Recreational	Fresh	Sample ID	MW1	MW2
	4 to <8 m	Water	Water	Date	28/04/2025	28/04/2025
2-Chloronaphthalene	-	-	-		< 5	< 5
2-Chlorophenol	-	3,000	340		< 3	< 3
2-Methylnaphthalene	-	-	-		< 5	< 5
2-Methylphenol (o-Cresol)	-	-	-		< 3	< 3
2-Naphthylamine	-	-	-		< 5	< 5
2-Nitroaniline	-	-	-		< 5	< 5
2-Nitrophenol	-	-	-		< 10	< 10
3&4-Methylphenol (m&p-Cresol)	-	-	-		< 6	< 6
3-Methylcholanthrene	-	-	-		< 5	< 5
4,4'-DDD	-	-	-		< 0.2	< 0.2
4,4'-DDE	-	-	-		< 0.2	< 0.2
4,4'-DDT	-	90	0.006		< 0.2	< 0.2
4-Aminobiphenyl	-	-	-		< 5	< 5
4-Bromophenyl phenyl ether	-	-	-		< 5	< 5
4-Chloro-3-methylphenol	-	-	-		< 10	< 10
4-Chlorophenyl phenyl ether	-	-	-		< 5	< 5
4-Nitrophenol	-	-	-		< 30	< 30
Acetophenone	-	-	-		< 5	< 5
Aldrin	-	-	-		< 0.2	< 0.2

Notes:

Criteria 1 = NEPC (1999) Amended, 'D' Comm./ind. Groundwater Health Screening Levels for vapour intrusion, silt 4 to <8m.

Criteria 2 = NHMRC (2008), Guidelines for Managing Risks in Recreational Water.

Criteria 3 = NEPC (1999) Amended, Groundwater Investigation Levels, Freshwater.

Total concentrations in µg/L

- = assessment criteria not available

NL = not limiting

< # or ND = analyte(s) not detected in excess of laboratory reporting limit

-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 5 : Summary of Groundwater Analytical Data - Semi-Volatile Organic Compounds

Woongarra - Groundwater Investigation

Project No.: 2301027c

262 Hakone Road,

Woongarra NSW

	Criteria 1	Criteria 2	Criteria 3			
	HSLs - D	NHMRC	GILs			
	Silt	Recreational	Fresh	Sample ID	MW1	MW2
	4 to <8 m	Water	Water	Date	28/04/2025	28/04/2025
Aniline	-	-	8		< 5	< 5
Bis(2-chloroethoxy)methane	-	-	-		< 5	< 5
Bis(2-ethylhexyl)phthalate	-	100	-		< 5	< 5
Butyl benzyl phthalate	-	-	-		< 5	< 5
Chlorpyrifos	-	100	0.01		< 2	< 2
Coumaphos	-	-	-		< 20	< 20
d-BHC	-	-	-		< 0.2	< 0.2
Demeton-O	-	-	-		< 2	< 2
Demeton-S	-	-	-		< 2	< 2
Diazinon	-	40	0.01		< 2	< 2
Dibenzofuran	-	-	-		< 5	< 5
Dichlorvos	-	50	-		< 2	< 2
Dieldrin	-	-	-		< 0.2	< 0.2
Diethyl phthalate	-	-	1,000		< 5	< 5
Dimethoate	-	70	0.15		< 2	< 2
Dimethyl phthalate	-	-	3,700		< 5	< 5
Di-n-butyl phthalate	-	-	10		< 5	< 5
Di-n-octyl phthalate	-	-	-		< 5	< 5
Diphenylamine	-	-	-		< 5	< 5

Notes:

Criteria 1 = NEPC (1999) Amended, 'D' Comm./ind. Groundwater Health Screening Levels for vapour intrusion, silt 4 to <8m.

Criteria 2 = NHMRC (2008), Guidelines for Managing Risks in Recreational Water.

Criteria 3 = NEPC (1999) Amended, Groundwater Investigation Levels, Freshwater.

Total concentrations in µg/L

- = assessment criteria not available

NL = not limiting

< # or ND = analyte(s) not detected in excess of laboratory reporting limit

-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 5 : Summary of Groundwater Analytical Data - Semi-Volatile Organic Compounds

Woongarra - Groundwater Investigation

Project No.: 2301027c

262 Hakone Road,

Woongarra NSW

	Criteria 1	Criteria 2	Criteria 3			
	HSLs - D	NHMRC	GILs			
	Silt	Recreational	Fresh	Sample ID	MW1	MW2
	4 to <8 m	Water	Water	Date	28/04/2025	28/04/2025
Disulfoton	-	400	-		< 2	< 2
Endosulfan sulphate	-	-	-		< 0.2	< 0.2
Endrin	-	-	0.01		< 0.2	< 0.2
Endrin aldehyde	-	-	-		< 0.2	< 0.2
Endrin ketone	-	-	-		< 0.2	< 0.2
Ethoprop	-	10	-		< 2	< 2
Fenitrothion	-	70	0.2		< 2	< 2
Fensulfothion	-	100	-		< 2	< 2
Fenthion	-	70	-		< 2	< 2
g-BHC (Lindane)	-	100	0.2		< 0.2	< 0.2
Heptachlor	-	3	0.01		< 0.2	< 0.2
Heptachlor epoxide	-	-	-		< 0.2	< 0.2
Hexachlorobenzene	-	-	-		< 0.2	< 0.2
Hexachlorobutadiene	-	7	-		< 5	< 5
Hexachlorocyclopentadiene	-	-	-		< 5	< 5
Hexachloroethane	-	-	290		< 5	< 5
Malathion	-	700	0.05		< 2	< 2
Methoxychlor	-	3,000	-		< 0.2	< 0.2
Methyl azinphos	-	300	-		< 2	< 2

Notes:

Criteria 1 = NEPC (1999) Amended, 'D' Comm./ind. Groundwater Health Screening Levels for vapour intrusion, silt 4 to <8m.

Criteria 2 = NHMRC (2008), Guidelines for Managing Risks in Recreational Water.

Criteria 3 = NEPC (1999) Amended, Groundwater Investigation Levels, Freshwater.

Total concentrations in µg/L

- = assessment criteria not available

NL = not limiting

< # or ND = analyte(s) not detected in excess of laboratory reporting limit

-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 5 : Summary of Groundwater Analytical Data - Semi-Volatile Organic Compounds

Woongarra - Groundwater Investigation

Project No.: 2301027c

262 Hakone Road,

Woongarra NSW

	Criteria 1	Criteria 2	Criteria 3			
	HSLs - D	NHMRC	GILs			
	Silt	Recreational	Fresh	Sample ID	MW1	MW2
	4 to <8 m	Water	Water	Date	28/04/2025	28/04/2025
Methyl parathion	-	7	-		< 2	< 2
Mevinphos	-	50	-		< 2	< 2
Monocrotophos	-	20	-		< 2	< 2
Nitrobenzene	-	-	-		< 5	< 5
N-Nitrosodibutylamine	-	-	-		< 5	< 5
N-Nitrosodipropylamine	-	-	-		< 5	< 5
N-Nitrosopiperidine	-	-	-		< 5	< 5
Parathion	-	200	0.004		< 2	< 2
Pentachlorobenzene	-	-	-		< 5	< 5
Pentachloronitrobenzene	-	300	-		< 5	< 5
Pentachlorophenol	-	100	3.6		< 10	< 10
Phenol	-	-	320		< 3	< 3
Phorate	-	-	-		< 2	< 2
Profenofos	-	3	-		--	--
Prothiofos	-	-	-		--	--
Ronnel	-	-	-		< 2	< 2
Stirophos	-	-	-		--	--
Trichloronate	-	-	-		< 2	< 2

Notes:

Criteria 1 = NEPC (1999) Amended, 'D' Comm./ind. Groundwater Health Screening Levels for vapour intrusion, silt 4 to <8m.

Criteria 2 = NHMRC (2008), Guidelines for Managing Risks in Recreational Water.

Criteria 3 = NEPC (1999) Amended, Groundwater Investigation Levels, Freshwater.

Total concentrations in µg/L

- = assessment criteria not available

NL = not limiting

< # or ND = analyte(s) not detected in excess of laboratory reporting limit

-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 6 : Summary of Groundwater Analytical Data - Polyaromatic Hydrocarbons

Site Hydrogeology Investigation

Project No.: 2301027c

262 Hakone Road

Woongarra NSW

	Criteria 1	Criteria 2	Criteria 3						
	HSLs - D	NHMRC	GILs						
	Silt	Recreational	Fresh	Sample ID	MW1	MW2	DW1	RPD_DW1	TW1
	4 to <8 m	Water	Water	Date	28/04/2025	28/04/2025	28/04/2025	-	28/04/2025
Acenaphthene	-	-	-		< 1	< 1	< 1	nc	< 1
Acenaphthylene	-	-	-		< 1	< 1	< 1	nc	< 1
Anthracene	-	-	-		< 1	< 1	< 1	nc	< 1
Benz(a)anthracene	-	-	-		< 1	< 1	< 1	nc	< 1
Benzo(a)pyrene	-	-	-		< 1	< 1	< 1	nc	< 1
Benzo(b&j)fluoranthene	-	-	-		< 1	< 1	< 1	nc	< 1
Benzo(g,h,i)perylene	-	-	-		< 1	< 1	< 1	nc	< 1
Benzo(k)fluoranthene	-	-	-		< 1	< 1	< 1	nc	< 1
Chrysene	-	-	-		< 1	< 1	< 1	nc	< 1
Dibenz(a,h)anthracene	-	-	-		< 1	< 1	< 1	nc	< 1
Fluoranthene	-	-	-		< 1	< 1	< 1	nc	< 1
Fluorene	-	-	-		< 1	< 1	< 1	nc	< 1
Indeno(1.2.3-cd)pyrene	-	-	-		< 1	< 1	< 1	nc	< 1
Naphthalene	NL	-	16		< 1	< 1	< 1	nc	< 1
Phenanthrene	-	-	-		< 1	< 1	< 1	nc	< 1
Pyrene	-	-	-		< 1	< 1	< 1	nc	< 1
Benzo(a)pyrene TEQ	-	-	-		--	--	--	--	--
Total PAH	-	0.1	-		< 1	< 1	< 1	nc	< 1

Notes:

Criteria 1 = NEPC (1999) Amended, 'D' Comm./ind. Groundwater Health Screening Levels for vapour intrusion, silt 4 to <8m.

Criteria 2 = NHMRC (2008), Guidelines for Managing Risks in Recreational Water.

Criteria 3 = NEPC (1999) Amended, Groundwater Investigation Levels, Freshwater.

Total concentrations in µg/L

- = assessment criteria not available

NL = not limiting

DW1 = duplicate of MW2

TW1 = triplicate of MW2

RW1 = rinsate sample

RPD = relative percent difference of duplicate/triplicate

nc = RPD not calculated, one or both samples below laboratory reporting limit

< # or ND = analyte(s) not detected in excess of laboratory reporting limit

-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 6 : Summary of Groundwater Analytical Data - Polyaromatic Hydrocarbons

Site Hydrogeology Investigation

Project No.: 2301027c

262 Hakone Road

Woongarra NSW

	Criteria 1	Criteria 2	Criteria 3			
	HSLs - D	NHMRC	GILs			
	Silt	Recreational	Fresh	Sample ID	RPD_TW1	RW1
	4 to <8 m	Water	Water	Date	-	28/04/2025
Acenaphthene	-	-	-		nc	< 1
Acenaphthylene	-	-	-		nc	< 1
Anthracene	-	-	-		nc	< 1
Benz(a)anthracene	-	-	-		nc	< 1
Benzo(a)pyrene	-	-	-		nc	< 1
Benzo(b&j)fluoranthene	-	-	-		nc	< 1
Benzo(g,h,i)perylene	-	-	-		nc	< 1
Benzo(k)fluoranthene	-	-	-		nc	< 1
Chrysene	-	-	-		nc	< 1
Dibenz(a,h)anthracene	-	-	-		nc	< 1
Fluoranthene	-	-	-		nc	< 1
Fluorene	-	-	-		nc	< 1
Indeno(1.2.3-cd)pyrene	-	-	-		nc	< 1
Naphthalene	NL	-	16		nc	< 1
Phenanthrene	-	-	-		nc	< 1
Pyrene	-	-	-		nc	< 1
Benzo(a)pyrene TEQ	-	-	-		--	--
Total PAH	-	0.1	-		nc	< 1

Notes:

Criteria 1 = NEPC (1999) Amended, 'D' Comm./ind. Groundwater Health Screening Levels for vapour intrusion, silt 4 to <8m.

Criteria 2 = NHMRC (2008), Guidelines for Managing Risks in Recreational Water.

Criteria 3 = NEPC (1999) Amended, Groundwater Investigation Levels, Freshwater.

Total concentrations in µg/L

- = assessment criteria not available

NL = not limiting

DW1 = duplicate of MW2

TW1 = triplicate of MW2

RW1 = rinsate sample

RPD = relative percent difference of duplicate/triplicate

nc = RPD not calculated, one or both samples below laboratory reporting limit

< # or ND = analyte(s) not detected in excess of laboratory reporting limit

-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 7 : Summary of Groundwater Analytical Data - Organophosphate Pesticides

Site Hydrogeology Report

Project No.: 2301027c

262 Hakone Road

Woongarra NSW

	Criteria 1	Criteria 2			
	NHMRC	GILs			
	Recreational	Fresh	Sample ID	MW1	MW2
	Water	Water	Date	28/04/2025	28/04/2025
Chlorpyrifos	100	0.01		< 2	< 2
Coumaphos	-	-		< 20	< 20
Demeton (total)	-	-		--	--
Diazinon	40	0.01		< 2	< 2
Dichlorvos	50	-		< 2	< 2
Dimethoate	70	0.15		< 2	< 2
Disulfoton	400	-		< 2	< 2
Ethoprop	10	-		< 2	< 2
Fenitrothion	70	0.2		< 2	< 2
Fensulfothion	100	-		< 2	< 2
Fenthion	70	-		< 2	< 2
Malathion	700	0.05		< 2	< 2
Methyl azinphos	300	-		< 2	< 2
Methyl parathion	7	-		< 2	< 2
Mevinphos	50	-		< 2	< 2
Monocrotophos	20	-		< 2	< 2
Parathion	200	0.004		< 2	< 2
Phorate	-	-		< 2	< 2
Profenofos	3	-		--	--

Notes:

Criteria 1 = NHMRC (2008), Guidelines for Managing Risks in Recreational Water.

Criteria 2 = NEPC (1999) Amended, Groundwater Investigation Levels, Freshwater.

Total concentrations in µg/L

- = assessment criteria not available

< # or ND = analyte(s) not detected in excess of laboratory reporting limit

-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 7 : Summary of Groundwater Analytical Data - Organophosphate Pesticides

Site Hydrogeology Report

Project No.: 2301027c

262 Hakone Road

Woongarra NSW

	Criteria 1	Criteria 2			
	NHMRC	GILs			
	Recreational	Fresh	Sample ID	MW1	MW2
	Water	Water	Date	28/04/2025	28/04/2025
Prothiofos	-	-		--	--
Ronnel	-	-		< 2	< 2
Stirophos	-	-		--	--
Trichloronate	-	-		< 2	< 2
Moderately Harmful Pesticides	-	-		ND	ND

Notes:

Criteria 1 = NHMRC (2008), Guidelines for Managing Risks in Recreational Water.

Criteria 2 = NEPC (1999) Amended, Groundwater Investigation Levels, Freshwater.

Total concentrations in µg/L

- = assessment criteria not available

< # or ND = analyte(s) not detected in excess of laboratory reporting limit

-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 8 : Summary of Groundwater Analytical Data - Polychlorinated Biphenyls

Site Hydrogeology Report

Project No.: 2301027c

262 Hakone Road

Woongarra NSW

	Criteria 1	Criteria 2			
	NHMRC	GILs			
	Recreational	Fresh	Sample ID	MW1	MW2
	Water	Water	Date	28/04/2025	28/04/2025
Aroclor 1016	-	-		< 5	< 5
Aroclor 1221	-	-		< 5	< 5
Aroclor 1232	-	-		< 5	< 5
Aroclor 1242	-	0.3		< 5	< 5
Aroclor 1248	-	-		< 5	< 5
Aroclor 1254	-	0.01		< 5	< 5
Aroclor 1260	-	-		< 5	< 5
Total PCBs	-	-		< 5	< 5

Notes:

Criteria 1 = NHMRC (2008), Guidelines for Managing Risks in Recreational Water.

Criteria 2 = NEPC (1999) Amended, Groundwater Investigation Levels, Freshwater.

Total concentrations in µg/L

- = assessment criteria not available

< # or ND = analyte(s) not detected in excess of laboratory reporting limit

-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 9 : Summary of Groundwater Analytical Data - Phenols

Site Hydrogeology Report

Project No.: 2301027c

262 Hakone Road

Woongarra NSW

	Criteria 1	Criteria 2			
	NHMRC	GILs			
	Recreational	Fresh	Sample ID	MW1	MW2
	Water	Water	Date	28/04/2025	28/04/2025
2-Chlorophenol	3,000	340		< 3	< 3
2,4-Dichlorophenol	2,000	120		< 3	< 3
2,4,5-Trichlorophenol	-	-		< 10	< 10
2,4,6-Trichlorophenol	200	3		< 10	< 10
2,6-Dichlorophenol	-	-		< 3	< 3
4-Chloro-3-methylphenol	-	-		< 10	< 10
Pentachlorophenol	100	3.6		< 10	< 10
Tetrachlorophenols - Total	-	-		< 30	< 30
Total Halogenated Phenol	-	-		< 10	< 10
2-Cyclohexyl-4,6-dinitrophenol	-	-		< 100	< 100
2-Methylphenol (o-Cresol)	-	-		< 3	< 3
2-Nitrophenol	-	-		< 10	< 10
2,4-Dimethylphenol	-	-		< 3	< 3
2,4-Dinitrophenol	-	45		< 30	< 30
3&4-Methylphenol (m&p-Cresol)	-	-		< 6	< 6
4-Nitrophenol	-	-		< 30	< 30
Dinitro-o-cresol	-	-		< 30	< 30

Notes:

Criteria 1 = NHMRC (2008), Guidelines for Managing Risks in Recreational Water.

Criteria 2 = NEPC (1999) Amended, Groundwater Investigation Levels, Freshwater.

Total concentrations in µg/L

- = assessment criteria not available

< # or ND = analyte(s) not detected in excess of laboratory reporting limit

-- = sample not analysed

Bold/red indicates exceedance of assessment criteria



Table 9 : Summary of Groundwater Analytical Data - Phenols

Site Hydrogeology Report

Project No.: 2301027c

262 Hakone Road

Woongarra NSW

[illegible]

Notes:

Criteria 1 = NHMRC (2008), Guidelines for Managing Risks in Recreational Water.

Criteria 2 = NEPC (1999) Amended, Groundwater Investigation Levels, Freshwater.

Total concentrations in $\mu\text{g/L}$

- = assessment criteria not available

< # or ND = analyte(s) not detected in excess of laboratory reporting limit

-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 10 : Summary of Groundwater Analytical Data - Metals

Site Hydrogeology Report

Project No.: 2301027c

262 Hakone Road

Woongarrah NSW

	Criteria 1	Criteria 2	Criteria 3						
	NHMRC	GILs	ANZECC						
	Recreational	Fresh	Irrigation & General	Sample ID	MW1	MW2	DW1	RPD_DW1	TW1
	Water	Water	(Short Term Irrigation)	Date	28/04/2025	28/04/2025	28/04/2025	-	28/04/2025
Aluminium	-	55	20,000		< 50	< 50	--	--	--
Antimony	30	-	-		< 5	< 5	--	--	--
Arsenic	100	13 ²	2,000		< 1	< 1	< 1	nc	< 1
Barium	20,000	-	-		240	< 20	--	--	--
Boron	40,000	370	750		< 50	< 50	--	--	--
Cadmium	20	0.2	50		< 0.2	< 0.2	< 0.2	nc	< 0.2
Chromium	500 ¹	1 ¹	1,000		< 1	< 1	< 1	nc	1
Copper	20,000	1.4	5,000		< 1	< 1	< 1	nc	< 1
Iron	-	-	10,000		320	5,000	--	--	--
Lead	100	3.4	2,000		< 1	< 1	< 1	nc	< 1
Lithium	-	-	75 ¹		< 10	< 10	--	--	--
Manganese	5,000	1,900	10,000		170	280	--	--	--
Mercury	10	0.06	2		< 0.1	< 0.1	< 0.1	nc	< 0.1
Nickel	200	11	2,000		6	7	7	0%	8
Selenium	100	5	50		< 1	< 1	--	--	--
Silver	1,000	0.05	-		< 5	< 5	--	--	--
Zinc	-	8	5,000		32	13	14	7%	19

Notes:

Criteria 1 = NHMRC (2008), Guidelines for Managing Risks in Recreational Water.

Criteria 2 = NEPC (1999) Amended, Groundwater Investigation Levels, Freshwater.

Criteria 3 = ANZECC (2024) Water Quality for Irrigation and General Water Uses: Guidelines (Draft).

Total concentrations in µg/L

- = assessment criteria not available

¹Citrus crops

¹Guideline for Chromium (VI) used conservatively.

²Guideline for Arsenic (V) used conservatively.

DW1 = duplicate of MW2

TW1 = triplicate of MW2

RPD = relative percent difference of duplicate/triplicate

nc = RPD not calculated, one or both samples below laboratory reporting limit

< # or ND = analyte(s) not detected in excess of laboratory reporting limit

-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 10 : Summary of Groundwater Analytical Data - Metals

Site Hydrogeology Report

Project No.: 2301027c

262 Hakone Road

Woongarra NSW

	Criteria 1	Criteria 2	Criteria 3		
	NHMRC	GILs	ANZECC		
	Recreational	Fresh	Irrigation & General	Sample ID	RPD_TW1
	Water	Water	(Short Term Irrigation)	Date	-
Aluminium	-	55	20,000		--
Antimony	30	-	-		--
Arsenic	100	13 ²	2,000		<i>nc</i>
Barium	20,000	-	-		--
Boron	40,000	370	750		--
Cadmium	20	0.2	50		<i>nc</i>
Chromium	500 ¹	1 ¹	1,000		<i>nc</i>
Copper	20,000	1.4	5,000		<i>nc</i>
Iron	-	-	10,000		--
Lead	100	3.4	2,000		<i>nc</i>
Lithium	-	-	75 ¹		--
Manganese	5,000	1,900	10,000		--
Mercury	10	0.06	2		<i>nc</i>
Nickel	200	11	2,000		13%
Selenium	100	5	50		--
Silver	1,000	0.05	-		--
Zinc	-	8	5,000		38%

Notes:

Criteria 1 = NHMRC (2008), Guidelines for Managing Risks in Recreational Water.

Criteria 2 = NEPC (1999) Amended, Groundwater Investigation Levels, Freshwater.

Criteria 3 = ANZECC (2024) Water Quality for Irrigation and General Water Uses: Guidelines (Draft).

Total concentrations in µg/L

- = assessment criteria not available

¹Citrus crops

¹Guideline for Chromium (VI) used conservatively.

²Guideline for Arsenic (V) used conservatively.

DW1 = duplicate of MW2

TW1 = triplicate of MW2

RPD = relative percent difference of duplicate/triplicate

nc = RPD not calculated, one or both samples below laboratory reporting limit

< # or ND = analyte(s) not detected in excess of laboratory reporting limit

-- = sample not analysed

Bold/red indicates exceedance of assessment criteria



Table 11 : Summary of Groundwater Analytical Data - Nutrients

Site Hydrogeology Report

Project No.: 2301027c

262 Hakone Road

Woongarra NSW

[illegible]

Notes:

Criteria 1 = NHMRC (2008), Guidelines for Managing Risks in Recreational Water.

Criteria 2 = NEPC (1999) Amended, Groundwater Investigation Levels, Freshwater.

Criteria 3 = ANZECC (2024) Water Quality for Irrigation and General Water Uses: Guidelines (Draft).

Total concentrations in $\mu\text{g/L}$

- = assessment criteria not available

< # or ND = analyte(s) not detected in excess of laboratory reporting limit

-- = sample not analysed

Bold/red indicates exceedance of assessment criteria



Table 12 : Summary of Groundwater Analytical Data - Pathogens

Site Hydrogeology Report

Project No.: 2301027c

262 Hakone Road

Woongarra NSW

[illegible]

Notes:

Criteria 1 = ANZECC (2024) Water Quality for Irrigation and General Water Uses: Guidelines (Draft).

Total concentrations in MPN/100 ml

- = assessment criteria not available

¹ Value for *E. coli* and thermotolerant coliforms. Value for non-food crops

< # or ND = analyte(s) not detected in excess of laboratory reporting limit

-- = sample not analysed

RPD = relative percent difference of duplicate/triplicate

nc = RPD not calculated, one or both samples below or exceeds laboratory reporting limit

Bold/red indicates exceedance of assessment criteria

Table 13 : Summary of Groundwater Analytical Data - Per- and Polyfluorinated Alkyl Substances

Site Hydrogeology Report

Project No.: 2301027c

262 Hakone Road

Woongarrah NSW

	Criteria 1	Criteria 2						
	Recreational	Freshwater	Sample ID	MW1	MW2	DW1	RPD_DW1	TW1
	Water	95%	Date	28/04/2025	28/04/2025	28/04/2025	-	28/04/2025
PFPoS	-	-		< 0.01	< 0.01	< 0.01	nc	< 0.01
PFBS	-	-		< 0.01	< 0.01	< 0.01	nc	< 0.01
PFPeS	-	-		< 0.01	< 0.01	< 0.01	nc	< 0.01
PFHxS	-	-		< 0.01	< 0.01	< 0.01	nc	0.01
PFHpS	-	-		< 0.01	< 0.01	< 0.01	nc	< 0.01
PFOS	-	0.13		< 0.01	< 0.01	< 0.01	nc	< 0.01
PFNS	-	-		< 0.01	< 0.01	< 0.01	nc	< 0.01
PFDS	-	-		< 0.01	< 0.01	< 0.01	nc	< 0.01
PFBA	-	-		< 0.05	< 0.05	< 0.05	nc	< 0.05
PFPeA	-	-		< 0.01	< 0.01	< 0.01	nc	< 0.01
PFHxA	-	-		< 0.01	< 0.01	< 0.01	nc	< 0.01
PFHpA	-	-		< 0.01	< 0.01	< 0.01	nc	< 0.01
PFOA	10	220		< 0.01	< 0.01	< 0.01	nc	< 0.01
PFNA	-	-		< 0.01	< 0.01	< 0.01	nc	< 0.01
PFDA	-	-		< 0.01	< 0.01	< 0.01	nc	< 0.01
PFUnA	-	-		< 0.01	< 0.01	< 0.01	nc	< 0.01
PFDoA	-	-		< 0.01	< 0.01	< 0.01	nc	< 0.01
PFTTrDA	-	-		< 0.01	< 0.01	< 0.01	nc	< 0.01

Notes:

Criteria 1 = PFAS NEMP 3.0 (HEPA 2025) Recreational water guideline value, NHMRC 2019.

Criteria 2 = PFAS NEMP 3.0 (HEPA 2025) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.

Total concentrations in µg/L

- = assessment criteria not available

DW1 = duplicate of MW2

TW1 = triplicate of MW2

RW1 = rinsate sample

RPD = relative percent difference of duplicate/triplicate

nc = RPD not calculated, one or both samples below laboratory reporting limit

< # or ND = analyte(s) not detected in excess of laboratory reporting limit

-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 13 : Summary of Groundwater Analytical Data - Per- and Polyfluorinated Alkyl Substances

Site Hydrogeology Report

Project No.: 2301027c

262 Hakone Road

Woongarrah NSW

	Criteria 1	Criteria 2						
	Recreational	Freshwater	Sample ID	MW1	MW2	DW1	RPD_DW1	TW1
	Water	95%	Date	28/04/2025	28/04/2025	28/04/2025	-	28/04/2025
PFTeDA	-	-		< 0.01	< 0.01	< 0.01	nc	< 0.01
PFOSA	-	-		< 0.05	< 0.05	< 0.05	nc	< 0.05
MeFOSA	-	-		< 0.05	< 0.05	< 0.05	nc	< 0.05
EtFOSA	-	-		< 0.05	< 0.05	< 0.05	nc	< 0.05
MeFOSE	-	-		< 0.05	< 0.05	< 0.05	nc	< 0.05
EtFOSE	-	-		< 0.05	< 0.05	< 0.05	nc	< 0.05
MeFOSAA	-	-		< 0.05	< 0.05	< 0.05	nc	< 0.05
EtFOSAA	-	-		< 0.05	< 0.05	< 0.05	nc	< 0.05
4:2 FTS	-	-		< 0.01	< 0.01	< 0.01	nc	< 0.01
6:2 FTS	-	-		< 0.05	< 0.05	< 0.05	nc	< 0.05
8:2 FTS	-	-		< 0.01	< 0.01	< 0.01	nc	< 0.01
10:2 FTS	-	-		< 0.01	< 0.01	< 0.01	nc	< 0.01
PFOA + PFOS	-	-		< 0.01	< 0.01	< 0.01	nc	< 0.01
PFHxS + PFOS	2	-		< 0.01	< 0.01	< 0.01	nc	0.01
Sum of PFASs (n=30)*	-	-		< 0.1	< 0.1	< 0.1	nc	< 0.1

Notes:

Criteria 1 = PFAS NEMP 3.0 (HEPA 2025) Recreational water guideline value, NHMRC 2019.

Criteria 2 = PFAS NEMP 3.0 (HEPA 2025) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.

Total concentrations in µg/L

- = assessment criteria not available

DW1 = duplicate of MW2

TW1 = triplicate of MW2

RW1 = rinsate sample

RPD = relative percent difference of duplicate/triplicate

nc = RPD not calculated, one or both samples below laboratory reporting limit

< # or ND = analyte(s) not detected in excess of laboratory reporting limit

-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 13 : Summary of Groundwater Analytical Data - Per- and Polyfluorinated Alkyl Substances

Site Hydrogeology Report

Project No.: 2301027c

262 Hakone Road

Woongarra NSW

	Criteria 1	Criteria 2			
	Recreational	Freshwater	Sample ID	RPD_TW1	RW1
	Water	95%	Date	-	28/04/2025
PFPPrS	-	-		nc	< 0.01
PFBS	-	-		nc	< 0.01
PFPeS	-	-		nc	< 0.01
PFHxS	-	-		nc	< 0.01
PFHpS	-	-		nc	< 0.01
PFOS	-	0.13		nc	< 0.01
PFNS	-	-		nc	< 0.01
PFDS	-	-		nc	< 0.01
PFBA	-	-		nc	< 0.05
PFPeA	-	-		nc	< 0.01
PFHxA	-	-		nc	< 0.01
PFHpA	-	-		nc	< 0.01
PFOA	10	220		nc	< 0.01
PFNA	-	-		nc	< 0.01
PFDA	-	-		nc	< 0.01
PFUnA	-	-		nc	< 0.01
PFDoA	-	-		nc	< 0.01
PFTTrDA	-	-		nc	< 0.01

Notes:

Criteria 1 = PFAS NEMP 3.0 (HEPA 2025) Recreational water guideline value, NHMRC 2019.

Criteria 2 = PFAS NEMP 3.0 (HEPA 2025) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.

Total concentrations in µg/L

- = assessment criteria not available

DW1 = duplicate of MW2

TW1 = triplicate of MW2

RW1 = rinsate sample

RPD = relative percent difference of duplicate/triplicate

nc = RPD not calculated, one or both samples below laboratory reporting limit

< # or ND = analyte(s) not detected in excess of laboratory reporting limit

-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

Table 13 : Summary of Groundwater Analytical Data - Per- and Polyfluorinated Alkyl Substances

Site Hydrogeology Report

Project No.: 2301027c

262 Hakone Road

Woongarrah NSW

	Criteria 1	Criteria 2			
	Recreational	Freshwater	Sample ID	RPD_TW1	RW1
	Water	95%	Date	-	28/04/2025
PFTeDA	-	-		<i>nc</i>	< 0.01
PFOSA	-	-		<i>nc</i>	< 0.05
MeFOSA	-	-		<i>nc</i>	< 0.05
EtFOSA	-	-		<i>nc</i>	< 0.05
MeFOSE	-	-		<i>nc</i>	< 0.05
EtFOSE	-	-		<i>nc</i>	< 0.05
MeFOSAA	-	-		<i>nc</i>	< 0.05
EtFOSAA	-	-		<i>nc</i>	< 0.05
4:2 FTS	-	-		<i>nc</i>	< 0.01
6:2 FTS	-	-		<i>nc</i>	< 0.05
8:2 FTS	-	-		<i>nc</i>	< 0.01
10:2 FTS	-	-		<i>nc</i>	< 0.01
PFOA + PFOS	-	-		<i>nc</i>	< 0.01
PFHxS + PFOS	2	-		<i>nc</i>	< 0.01
Sum of PFASs (n=30)*	-	-		<i>nc</i>	< 0.1

Notes:

Criteria 1 = PFAS NEMP 3.0 (HEPA 2025) Recreational water guideline value, NHMRC 2019.

Criteria 2 = PFAS NEMP 3.0 (HEPA 2025) Aquatic Ecosystems, Freshwater Guidance Values, 95% Species Protection.

Total concentrations in µg/L

- = assessment criteria not available

DW1 = duplicate of MW2

TW1 = triplicate of MW2

RW1 = rinsate sample

RPD = relative percent difference of duplicate/triplicate

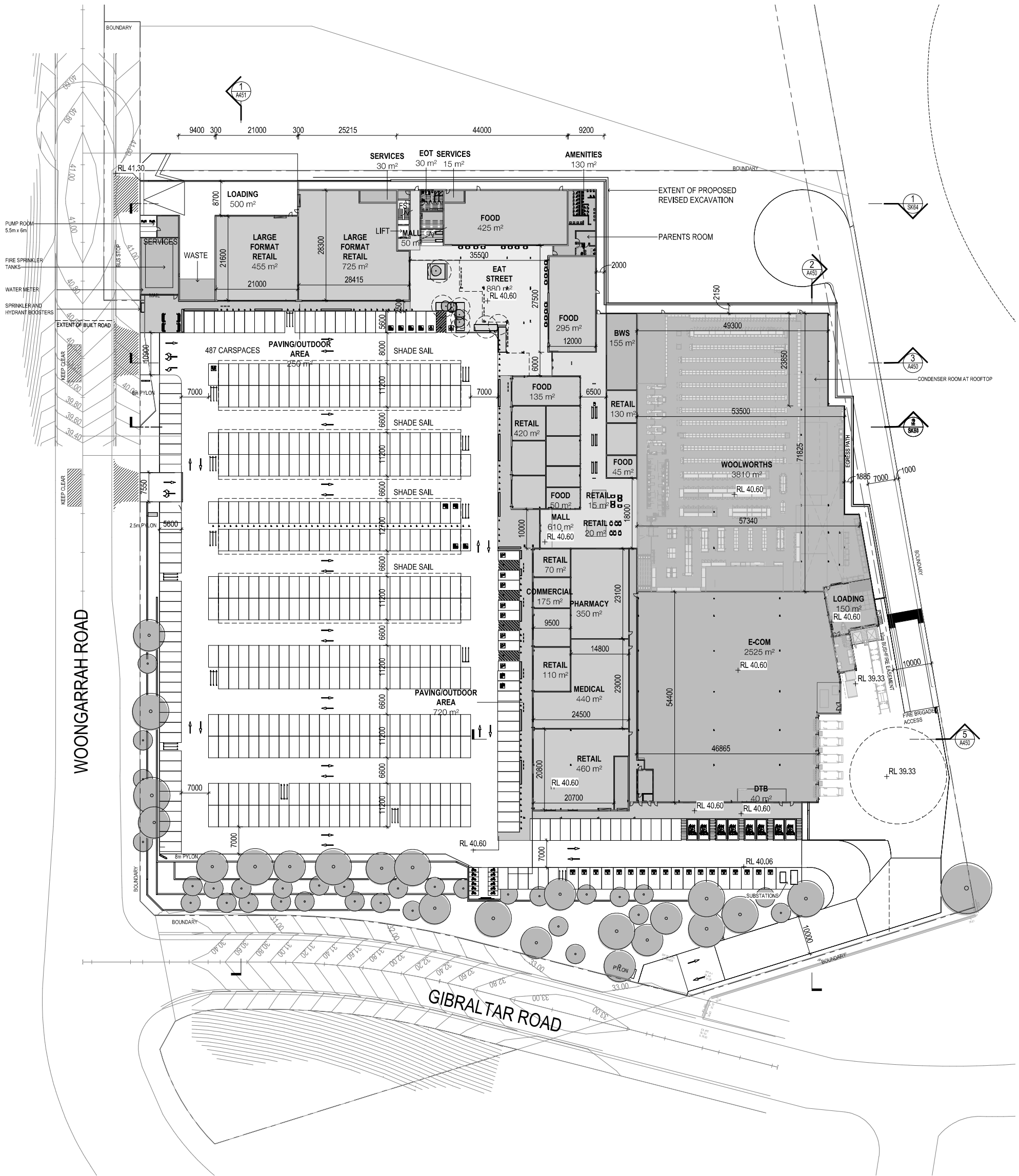
nc = RPD not calculated, one or both samples below laboratory reporting limit

< # or ND = analyte(s) not detected in excess of laboratory reporting limit

-- = sample not analysed

Bold/red indicates exceedance of assessment criteria

ATTACHMENT A



SITE PLAN
SCALE 1:1000 @ A3

LEGEND

-  DENOTES EXISTING BORE HOLE LOCATIONS (Geo-Logix)
-  DENOTES PROPOSED BORE HOLE LOCATIONS



ATTACHMENT B

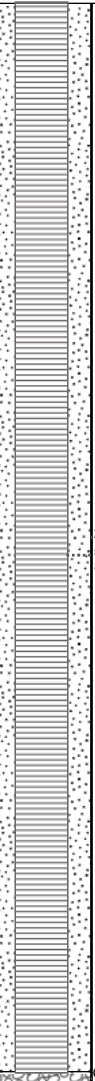
 Geo-Logix environment • geotech						Borehole Record: MW1			Page: 1 OF 1		
Client name: Woolworths Project name: Woongarrah GW Investigation Project Number: 2301027c Location: 262 Hakone Rd, Woongarrah NSW 2259, Australia						Position: E: 356687.52 N: 6321383.66 Datum: 56H Ground Surface Elevation (mAHD): 44.73			Date: : 16/04/2025 Drill Rig Supplier: Terratest Drilling Method: Geoprobe Logged/Checked: JU/		
Water	Depth (mbg)	Elevation (mAHD)	Samples	Testing	Classification Code	Graphic Log	Material Description	Moisture	Remarks	Well Diagram	
				PID					Observations / Comments		
<											

				Borehole Record: MW2				Page: 1 OF 2				
Client name: Woolworths				Position: E: 356799.54				Date: : 24/04/2025				
Project name: Woongarrah GW Investigation				N: 6321327.88				Drill Rig Supplier: Fico Group Pty Ltd				
Project Number: 2301027c				Datum: 56H				Drilling Method: Canter Truck				
Location: 262 Hakone Rd, Woongarrah NSW 2259, Australia				Ground Surface Elevation (mAHD): 54.96				Logged/Checked: JU/				
Water	Depth (mbg)	Elevation (mAHD)	Samples	Testing	Classification Code	Graphic Log	Material Description	Moisture	Remarks	Well Diagram		
				PID					Observations / Comments			
	0.05				PAV		Non-Soil - Asphalt Asphalt					
	0.3				PAV		Non-Soil - Aggregate Base Course with clay					
	1	54			SST		Rock SANDSTONE: moderately weathered, yellowish brown, fine to coarse grained, medium resistance.		From 0.5 m, water added to aid drilling	Concrete Cement		
	2	53			CON		Rock CONGLOMERATE: moderately weathered, light brown, fine to very coarse grained, high resistance, quartz and sandstone lithics.			50mm PVC Solid		
	2.3									Bentonite		
	3	52			SST		Rock SANDSTONE: moderately weathered, pale brown, medium to high resistance.					
	3.7											
	4	51					Rock CONGLOMERATE: moderately weathered, pale grey brown, high resistance is due to individual quartz and sandstone lithics. very slow progressing with large cobbles/boulders. occasional thin beds of weak resistance dark reddish brown claystone/shale.					
	5	50										
	6	49							From 5.7 m, low resistance drilling through weaker matrix/sandstone bedrock. encountering layers of cobbles/boulders every 0.5 m.	2 mm Sand		
	7	48			CON					50mm PVC Slotted		
	8	47										
	9	46							Between 9.2-9.9 m, very dense cobbles/boulders, very high resistance			
		45										
Sample Type D Disturbed UD Undisturbed B Bulk R Representative C Continuous ASB Asbestos Groundwater In Out During Drilling Stabilised				Field Tests PID Photo Ionisation Detector PP Pocket Penetrometer (kPa) SPT Standard Penetration Test DCP Dynamic Cone Penetration				Moisture D Dry SLM Slightly Moist M Moist D Dry Hydrocarbon odour H High M Medium L Low Z Zero		Geo-Logix Pty Ltd Building Q2, Level 3 Unit 2309 / Daydream Street Warriewood NSW 2102 www.geo-logix.com.au 02 9979 1722		

Client name: Woolworths
Project name: Woongarra GW Investigation
Project Number: 2301027c
Location: 262 Hakone Rd, Woongarra NSW 2259, Australia

Position: E: 356799.54
 N: 6321327.88
Datum: 56H
Ground Surface Elevation (mAHD): 54.96

Date: 24/04/2025
Drill Rig Supplier: Fico Group Pty Ltd
Drilling Method: Canter Truck
Logged/Checked: JU/

Water	Depth (mbg)	Elevation (mAHD)	Samples	Testing	Classification Code	Graphic Log	Material Description	Moisture	Remarks	Well Diagram
				PID					Observations / Comments	
	10.5				CON		Rock CONGLOMERATE: moderately weathered, pale grey brown, high resistance is due to individual quartz and sandstone lithics. very slow progressing with large cobbles/boulders. occasional thin beds of weak resistance dark reddish brown claystone/shale.		From 10.0 m, higher resistance matrix, cobbles and boulders still making for very slow progress 1 m = 1.5 hours	 2 mm Sand 50mm PVC Slotted
	11	44			ARG		Extremely weathered, rock CLAY ARG: high plasticity, dark brown, inorganic, medium resistance. recovered as slurry of fines and fine sand, when augers were taken out high plasticity clay was observed around augers..	W	From 10.0 m, water no longer added to bore by driller, with wet rock crushings returned indicating presence of groundwater	
	12	43								
	13	42								
	14	41								
	15	40								
	16	39								
	16.6									
	17	38								
	18	37			Between 16.6-17.5 m, very high resistance					
									From 17.5 m, high resistance	 Collapse
MW2 Terminated at 18.2m										
Sample Type				Field Tests				Moisture		Geo-Logix Pty Ltd
D Disturbed				PID Photo Ionisation Detector				D Dry		Building Q2, Level 3
UD Undisturbed				PP Pocket Penetrometer (kPa)				SLM Slightly Moist		Unit 2309 / Daydream Street
B Bulk				SPT Standard Penetration Test				M Moist		Warriewood NSW 2102
R Representative				DCP Dynamic Cone Penetration				D Dry		
C Continuous										www.geo-logix.com.au
ASB Asbestos								Hydrocarbon odour		02 9979 1722
Groundwater								H High		
 In								M Medium		
 Out								L Low		
 During Drilling								Z Zero		
 Stabilised										

Client name: Woolworths
Project name: Woongarra GW Investigation
Project Number: 2301027c
Location: 262 Hakone Rd, Woongarra NSW 2259, Australia

Position: E: 356789.58
 N: 6321223.10
Datum: 56H
Ground Surface Elevation (mAHD): 48.994

Date: 16/04/2025
Drill Rig Supplier: Terratest
Drilling Method: Geoprobe
Logged/Checked: JU/

Water	Depth (mbg)	Elevation (mAHD)	Samples	Testing	Classification Code	Graphic Log	Material Description	Moisture	Remarks	Well Diagram
				PID					Observations / Comments	
	0.2				TS		Topsoil SILT low plasticity, dark brown, moist.	M		
					CH		Natural CLAY CH: stiff, high plasticity, yellowish brown mottled light grey, inorganic, moist.	M		
	1.1	48			CH		Natural CLAY CH: stiff, high plasticity, pale brown mottled white, inorganic, moist.	M		
	2	47			CH		Natural CLAY CH: very stiff, high plasticity, white mottled very pale brown, inorganic, moist.	M		
	3	46			CH		Natural CLAY CH: very stiff, high plasticity, white mottled very pale brown, inorganic, moist.	M		
	4	45			CH		Natural CLAY CH: very stiff, high plasticity, white mottled very pale brown, inorganic, moist.	M		
	4.5				CI		Natural CLAY CI: stiff, medium plasticity, brownish red, trace fine to medium sized gravel, inorganic, moist.	M		
	5	44			CI		Natural CLAY CI: stiff, medium plasticity, brownish red, trace fine to medium sized gravel, inorganic, moist.	M		
	6	43			SST		Extremely weathered, rock Clayey SAND SST: orangish brown, fine to coarse grained, low resistance.	M		
	7	42			SST		Extremely weathered, rock Clayey SAND SST: orangish brown, fine to coarse grained, low resistance.	M		
	7.5				ARG		Rock SILTSTONE: distinctly weathered, pale red, very fine to fine grained, moist, increase in moisture. low drilling resistance.	M		
	8	41			ARG		Rock SILTSTONE: distinctly weathered, pale red, very fine to fine grained, moist, increase in moisture. low drilling resistance.	M		
	9	40			SST		Rock SANDSTONE: highly weathered, yellowish brown, fine to coarse grained, moist, thin beds of reddish medium resistance claystone/shale and low resistance brownish sandy clay (extremely weathered sandstone).	M		
					SST		Rock SANDSTONE: highly weathered, yellowish brown, fine to coarse grained, moist, thin beds of reddish medium resistance claystone/shale and low resistance brownish sandy clay (extremely weathered sandstone).	M		

Sample Type D Disturbed UD Undisturbed B Bulk R Representative C Continuous ASB Asbestos Groundwater In Out During Drilling Stabilised	Field Tests PID Photo Ionisation Detector PP Pocket Penetrometer (kPa) SPT Standard Penetration Test DCP Dynamic Cone Penetration	Moisture D Dry SLM Slightly Moist M Moist D Dry Hydrocarbon odour H High M Medium L Low Z Zero	Geo-Logix Pty Ltd Building Q2, Level 3 Unit 2309 / Daydream Street Warriewood NSW 2102 www.geo-logix.com.au 02 9979 1722
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Position: E: 356789.58
N: 6321223.10
Datum: 56H
Ground Surface Elevation (mAHD): 48.994

Date: : 16/04/2025
Drill Rig Supplier: Terratest
Drilling Method: Geoprobe
Logged/Checked: JU/

Sample Type	Field Tests	Moisture	Geo-Logix Pty Ltd
D Disturbed	PID Photo Ionisation Detector	D Dry	Building Q2, Level 3
UD Undisturbed	PP Pocket Penetrometer (kPa)	SLM Slightly Moist	Unit 2309 / Daydream Street
B Bulk	SPT Standard Penetration Test	M Moist	Warriewood NSW 2102
R Representative	DCP Dynamic Cone Penetration	D Dry	
C Continuous			www.geo-logix.com.au
ASB Asbestos		Hydrocarbon odour	02 9979 1722
Groundwater		H High	
▶ In		M Medium	
◀ Out		L Low	
⚡ During Drilling		Z Zero	
⚡ Stabilised			

ATTACHMENT C



Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: MW1

PROJECT INFORMATION

PROJECT NAME: Woongarra GW	PROJECT NUMBER: 2301027 c
DATE OF INSTALLATION: 16 4 25	INITIALS: Jv
DATE: 16 4 25	WEATHER: overcast, rain overnight
PURGE METHOD: Bailer	

PURGE VOLUME CALCULATION

$$\left(\frac{9.696}{\text{Total depth (m)}} - \frac{8.582}{\text{Water level (m)}} \right) \times \frac{3}{\text{Well volumes}} \times 2 \frac{50 \text{ mm}}{\text{Well}} \text{ or } 7.8 \frac{100 \text{ mm}}{\text{Well}} = \frac{6.684}{\text{Calculated Purge Volume}} \text{ Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/- 10%	TEMP (°C)
TOTAL PURGE VOLUME (L):		APPROX. PURGE RATE (LPM):					

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) initially clear then dark brown opaque. Bailed 5.5L until dry. Installed HDPE sleeve. No sheen no odour. Firm base

RECHARGE BEHAVIOUR: FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

Dipped 24 4 25 8.130 mbTOC

97mm stick up

ORIGINAL FIELD RECORD



Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: MW2

PROJECT INFORMATION

PROJECT NAME: <i>Woongurah</i>	PROJECT NUMBER: <i>230027</i>
DATE OF INSTALLATION: <i>24 4 25</i>	INITIALS: <i>JV</i>
DATE: <i>29 4 25</i>	WEATHER: <i>showers / heavy</i>
PURGE METHOD: <i>bailer / steel</i>	

PURGE VOLUME CALCULATION

$$\left(\frac{19.040}{\text{Total depth (m)}} - \frac{8.033}{\text{Water level (m)}} \right) \times \frac{3}{\text{Well volumes}} \times 2 \frac{50 \text{ mm}}{\text{Well}} \text{ or } 7.8 \frac{100 \text{ mm}}{\text{Well}} = \frac{66}{\text{Calculated Purge Volume}} \text{ Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/- 10%	TEMP (°C)
TOTAL PURGE VOLUME (L):			APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR)	<i>Purged 53L until dry, thick sediment slurry all the way to base of hole. Steel bailer needed to get through. 2L HDPE steers installed.</i>
RECHARGE BEHAVIOUR:	FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

ORIGINAL FIELD RECORD



Geo-Logix

WELL DEVELOPMENT LOG

WELL ID: MW3

PROJECT INFORMATION

PROJECT NAME: Woongarra Gw

PROJECT NUMBER: 2301027c

DATE OF INSTALLATION: 16 4 23

INITIALS: JV

DATE: 16 4 23

WEATHER: overcast, rain overnight

PURGE METHOD: Bailor

PURGE VOLUME CALCULATION

$$\left(\frac{12.949}{\text{Total depth (m)}} - \frac{\text{Dry}}{\text{Water level (m)}} \right) \times \frac{3}{\text{Well volumes}} \times 2 \frac{50 \text{ mm}}{\text{Well}} \text{ or } 7.8 \frac{100 \text{ mm}}{\text{Well}} = \text{Calculated Purge Volume Litres}$$

FIELD PARAMETERS

TIME	DTW (mbTOC)	TOTAL DISCHARGE (L)	PH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/- 10%	TEMP (°C)
TOTAL PURGE VOLUME (L):			APPROX. PURGE RATE (LPM):				

OBSERVATIONS DURING DEVELOPMENT

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR)

DRY Installed sleeve.

RECHARGE BEHAVIOUR:

FAST RECHARGING ☐

SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

DPP 24 4 23 Dry

ORIGINAL FIELD RECORD

ATTACHMENT D



05/05/2025

RE: Monitoring Well Locations

Hi Joe,

Please find below table of values for the monitoring wells at 262 Hakone Woongarra NSW.

measurements are in AHD and MGA20,

NAME	EASTING	NORTHING	FSL	PIPE
MW01	356687.524	6321383.664	44.732	45.743
MW02	356799.541	6321327.877	54.963	55.943
MW03	356789.576	6321223.101	48.994	49.912

A handwritten signature in black ink, appearing to read 'Glen Watson'.

Best regards
Glen Watson
Director
Onsite Surveying Pty Ltd

ATTACHMENT E



WELL ID: MW1

PROJECT NUMBER: 22010246	INITIALS: Ju
DATE: 20 4 25	WEATHER: Rain
SAMPLING METHOD: ☐ LOW FLOW: ☐ HYDRASLEEVE: ☒ BAILER: ☐	

STANDING WATER LEVEL (mBTC): 8.065	TOTAL DEPTH (mBTC): 9.689	STICK-UP (m):
DEPTH TO PSH (mBTC):	THICKNESS OF PSH (m):	TIME: 9:58

TIME	DTW (mBTOC)	TOTAL DISCHARGE (L)	pH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
10:50			5.13	1007	54.3	5.67	20.5
TOTAL PURGE VOLUME (L):		APPROX. SAMPLE PURGE RATE (LPM):					

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR)	
Firm base, First hydrophobic, clear, only filled VOC units. Subsequent seeds cloudy brown, no odour no green	
RECHARGE BEHAVIOUR:	FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

DTW (mbTOC): (AT SAMPLING)		
ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: M11	SAMPLE ID:	SAMPLE ID:
SAMPLE TIME:	SAMPLE TIME:	SAMPLE TIME:
NO. CONTAINERS: 4x V, 2x A, 1x PFD 1x Metal, 1x UG	NO. CONTAINERS	NO. CONTAINERS
ANALYSIS: 1x PO	ANALYSIS:	ANALYSIS:

ORIGINAL FIELD RECORD



GROUNDWATER SAMPLE LOG

WELL ID: MWZ

Logan

PROJECT INFORMATION

PROJECT NUMBER: 2201027	INITIALS: Jv
DATE: 28 4 25	WEATHER: Sun / shower
SAMPLING METHOD:	LOW FLOW: ☐ HYDRASLEEVE: ☒ BAILER: ☐

WELL GAUGING DETAILS

STANDING WATER LEVEL (mBTC): 10.810	TOTAL DEPTH (mBTC): 19.040	STICK-UP (m): 97cm
DEPTH TO PSH (mBTC):	THICKNESS OF PSH (m):	TIME:

FIELD PARAMETERS

TIME	DTW (mBTC)	TOTAL DISCHARGE (L)	pH +/- 0.1	CONDUCTIVITY (MS/CM) +/- 3%	REDOX (MV) +/- 10MV	DO (MG/L) +/-10%	TEMP (°C)
2:10			5.03	548	21.4	2.04	22.7
TOTAL PURGE VOLUME (L):		APPROX. SAMPLE PURGE RATE (LPM):					

OBSERVATIONS DURING SAMPLING

NOTES: (WELL CONDITION, COLOUR, CLARITY, ODOUR) First sleeve clean VOCs, SVOCs (Primary and trp), second sleeve opaque (org SVOC, metals, 1xuo, 1xro), third sleeve opaque (PFAS) ^{very} sedimenty!	
RECHARGE BEHAVIOUR:	FAST RECHARGING ☐ SLOW RECHARGING (<80% RECHARGE AFTER 2 HRS) ☐

WELL SAMPLING

DTW (mbTOC): (AT SAMPLING)		
ORIGINAL	DUPLICATE	TRIPLICATE
SAMPLE ID: MW2	SAMPLE ID: DW1	SAMPLE ID: TW1
SAMPLE TIME:	SAMPLE TIME:	SAMPLE TIME:
NO. CONTAINERS: 2x VOCs, 4x VOCs, 1x metal, 1x PFAS	NO. CONTAINERS: 2x VOCs, 4x VOCs, 1x metal, 1x PFAS	NO. CONTAINERS: . . .
ANALYSIS: 1x DO, 1x PO	ANALYSIS:	ANALYSIS:

ORIGINAL FIELD RECORD

ATTACHMENT F

Company Name	WAM Scientific
Office Address	26 Bungarra Crescent, Chipping Norton NSW 2170
Phone Number	+61 405 241 484
Contact Name	William Pak
Instrument	YSI Pro Quatro Water Quality Meter w/ 1m Quatro Cable
Serial Number	23A107177
Client Name	Joseph Unwin (Geo-Logix)
Project Number	PO6764
Comments	-

Instrument Check

Item	Test	Test Passed	Comments
2 x Alkaline C-size Batteries	Klein Tools MM300 Multimeter	✓	Both batteries reading above 2.9V
Battery Saver Function	Operation	✓	Automatically turns off after 60 minutes if idle
Unit Display	Operation	✓	Screen visible, no damage
Keypad	Operation	✓	Responsive, no damage
Connection Port and Cable	Condition/Check	✓	Clean, no damage
Monitor Housing	Condition/Check	✓	No damage
Firmware	Version	✓	4.0.0
pH Probe	Condition/Calibration	✓	Calibrated and conforms to manufacturer's specs
pH millivolts for pH 7.00	Calibration	✓	pH 7.00 calibration range between 0 mV $\pm$ 50 mV
pH millivolts for pH 4.00	Calibration	✓	pH 4 mV range +165 to +180 from 7 buffer mV value
pH slope	Calibration	✓	Range between 55 to 60 mV/pH (ideal value 59 mV)
Response time < 90 seconds	Calibration	✓	Responds to correct value within 90 seconds
ORP Probe	Condition/Calibration	✓	Calibrated and conforms to manufacturer's specs
ORP Reading	Calibration	✓	Within $\pm$ 80 mV of reference Zobell Reading
Response time < 90 seconds	Calibration	✓	Responds to correct value within 90 seconds
Conductivity/Temp Probe	Condition/Calibration	✓	Calibrated and conforms to manufacturer's specs
Conductivity Cell	Calibration	✓	Conductivity cell constant 5.0 $\pm$ 1.0 in GLP file
Clean Sensor Readings	Calibration	✓	Clean sensor reads less than 3 uS/cm in dry air
Dissolved Oxygen Probe	Condition/Calibration	✓	Calibrated and conforms to manufacturer's specs
DO Cap	Condition/Calibration	✓	1.25 mil PE membrane (yellow membrane)
DO Sensor in Use	Condition	✓	Polarographic DO sensor
DO Sensor Value	Calibration	✓	(min 4.31 uA - max 8.00 uA) Avg 6.15 uA

Instrument Readings

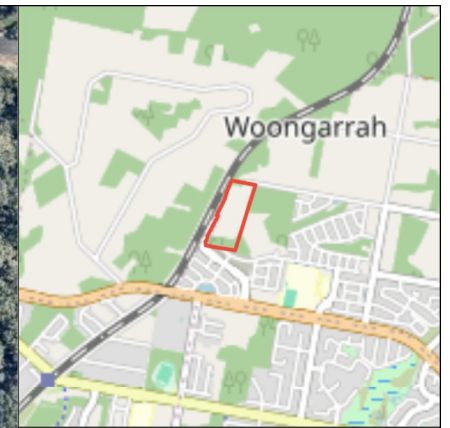
Parameter	Standard Used	Reference No.	Calibration Value	Observed	Actual	Units
Temperature	Centre 370 Thermometer	Room Temp.	23.5	24.9	23.5	°C
pH	pH 4.00	417183	4.01	4.09	4.01	pH
pH	pH 7.00	419528	7.00	7.02	7.00	pH
ORP	Zobell A & B	420448/418958	232.3	222.9	232.3	mV
Conductivity	2760 μ S/cm at 25°C	399819	2760	2635	2760	μ S/cm
Zero Dissolved O ₂	NaSO ₃ in Distilled H ₂ O	426184	0.0	-0.2	0.0	%
100% Dissolved O ₂	100% Air Saturated H ₂ O	Fresh Air	100.0	100.1	100.0	%

Declaration

WAM Scientific certifies that the above instrument was successfully tested according to manufacturer's standards and all necessary checks were conducted to ensure the instrument was fully operational prior to dispatch. The calibration data supplied was obtained in accordance with manufacturer's specifications using solutions of known values.

Calibrated By	William Pak
Calibration Date	15/04/2025
Calibration Due	15/10/2025

ATTACHMENT G



Legend

- Additional Borehole Locations
- Existing Borehole Locations
- Site Boundary

0 25 m 50 m
© Nearmap

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Produced by **Datanest.earth**

Title: Site Map		
Client: Woolworths		Size: A4
Project: NSW WW Woongarra Add GTK	Drawn: PDP	Figure No.: 1
Date: 21-02-2025	Checked:	
Proj No: 2301027A	Scale: 1:2500	Version: V01



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Unit 2309 / 4 Daydream Street
Warriewood NSW 2102
www.geo-logix.com.au

Project Number: **2301027**
Hole Depth: **1.50 m**
Date Started: **02/06/2023**
Date Completed: **02/06/2023**

Project Name: **Geotechnical Investigation**
Location / Site: **Part of 262 Hakone Road, Woongarra NSW**
Client: **Woolworths Group Pty Ltd**
Contractor: **Fico Group Pty Limited**
Method: **Solid Flight Auger (Ute mounted)**

Method	Water Level	Depth (mBGL)	Sample Type	HC Odour	Sample ID	Material Type	USCS Symbol	Graphic Log	Material Description	Moisture	Tests	Observations / Comments
											SPT	
SFA (V-bit)	0.20	D	Z	Z	BH1/0.2	Fill	F		FILL- dusky brown (5YR 2/2), 60% clay, 40% gravel, moderately compacted.	damp		240mm recovery. V-bit refusal at 1.4m, switch to TC-bit.
									FILL- pink / moderate orange pink (5YR 8/4), 70% clay, 30% gravel, moderately compacted.	damp		
									Light red / moderate reddish orange (10R 6/6) at 0.5m.	moist		
SFA	1.00	B	Z	Z	BH1/0.2-2.0 (& 1.0-1.5) BH1/1.0-1.5	Natural	CL		CLAY with Sand- light red / moderate reddish orange (10R 6/6), 80% clay, 20% sand, medium plasticity, firm.	damp	2,5,3 N=8	
SFA	2								Terminated at 1.500 m TC-bit refusal on Bedrock.			
SFA	3											
SFA	4											
SFA	5											

Abbreviations:

Hydrocarbon Odour

H High
M Medium
L Low
Z Zero

Sample Type

D Disturbed
U Undisturbed
B Bulk
R Representative
C Continuous
J Jar
Asb Asbestos

Strength Testing

SPT Standard Penetration Test
DCP Dynamic Cone Penetrometer
PP Pocket Penetrometer

Water Levels

Encountered Groundwater
 Stabilised Groundwater

Abandonment Method: Backfill with soil and compact.

Additional Comments: SPT hammer type: Donut hammer.

GLLOG2023 2301027 WOONGARRAH V2.GPJ GL.GDT 6/30/23 2:15:48 PM - drawn by laurie white at www.reumad.com.au



Log Drawn By: Laurie White
Contact: laurie.white@reumad.com.au

Logged By: Tiffany Mabbott
Checked By: Ted Lilly

Date: 02/06/2023
Date: 29/06/2023



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Project Number: **2301027**
Hole Depth: **4.50 m**
Date Started: **02/06/2023**
Date Completed: **02/06/2023**

Project Name: **Geotechnical Investigation**
Location / Site: **Part of 262 Hakone Road, Woongarrah NSW**
Client: **Woolworths Group Pty Ltd**
Contractor: **Fico Group Pty Limited**
Method: **Solid Flight Auger (Ute mounted)**

Method	Water Level	Depth (mBGL)	Sample Type	HC Odour	Sample ID	Material Type	USCS Symbol	Graphic Log	Material Description	Moisture	Tests	Observations / Comments
											SPT	
SFA (V-bit)												
		1	R	Z	BH2/1.1-1.4	CL			CLAY with Sand- moderate red (5R 4/6), 80% clay, 20% sand, low plasticity, stiff.	damp		V-bit refusal at 0.4m, switch to TC-bit.
		1.40							Light red / moderate reddish orange (10R 6/6) at 1.0m.		7,11,7 N=18	465mm recovery.
		2				CL			CLAY- moderate red (5R 4/6), 90% clay, 10% sand, low plasticity, stiff.	damp		
		2.20										
		2.50				CL			CLAY- very pale brown / very pale orange (10YR 8/2) and very light grey (N8), 90% clay, 10% sand, medium plasticity, very stiff.	damp		
		3	R	Z	BH2/2.6-2.8	CL			CLAY- very light grey (N8), 100% clay, medium plasticity, very stiff.	damp	4,7,10 N=17	480mm recovery.
		4				CL						
		5	R	Z	BH2/4.0-4.15						5,16	390mm recovery, double bounce (x3).
									Terminated at 4.500 m Target depth.			

Abbreviations:

Hydrocarbon Odour
H High
M Medium
L Low
Z Zero

Sample Type

D Disturbed
U Undisturbed
B Bulk
R Representative
C Continuous
J Jar
Asb Asbestos

Strength Testing

SPT Standard Penetration Test
DCP Dynamic Cone Penetrometer
PP Pocket Penetrometer

Water Levels

Encountered Groundwater
Stabilised Groundwater

Abandonment Method: Backfill with soil and compact.

Additional Comments: SPT hammer type: Donut hammer.
Approximately 2-3m higher in elevation from BH1.



Log Drawn By: Laurie White
Contact: laurie.white@reumad.com.au

Logged By: Tiffany Mabbott
Checked By: Ted Lilly

Date: 02/06/2023
Date: 29/06/2023



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Project Number: **2301027**
Hole Depth: **3.90 m**
Date Started: **02/06/2023**
Date Completed: **02/06/2023**

Project Name: **Geotechnical Investigation**
Location / Site: **Part of 262 Hakone Road, Woongarrah NSW**
Client: **Woolworths Group Pty Ltd**
Contractor: **Fico Group Pty Limited**
Method: **Solid Flight Auger (Ute mounted)**

Method	Water Level	Depth (mBGL)	Sample Type	HC Odour	Sample ID	Material Type	USCS Symbol	Graphic Log	Material Description	Moisture	Tests	Observations / Comments
											SPT	
		0.10				CL			CLAY with Silt - dusky brown (5YR 2/2), 80% clay, 20% silt, firm. CLAY - very pale brown / greyish orange (10YR 7/4), 90% clay, 10% sand, medium plasticity, stiff.	damp moist		
		1										
		2	D	Z	BH3/1.0-1.5	Natural	CL		Very light grey (N8) and 1.0m.		3,4,4 N=8	360mm recovery.
		3										
		3.50	D	Z	BH3/2.5-3.0						7,6,9 N=15	400mm recovery.
		4										
		5				CL			CLAY - brownish yellow / dark yellowish orange (10YR 6/6) and very light grey (N8), 90% clay, 10% sand, medium plasticity, very stiff.	damp		V-bit refusal at 3.7m, switch to TC-bit.
									Terminated at 3.900 m TC-bit refusal.			

Abbreviations:
Hydrocarbon Odour

H High
M Medium
L Low
Z Zero

Sample Type

D Disturbed
U Undisturbed
B Bulk
R Representative
C Continuous
J Jar
Asb Asbestos

Strength Testing

SPT Standard Penetration Test
DCP Dynamic Cone Penetrometer
PP Pocket Penetrometer

Water Levels

Encountered Groundwater
Stabilised Groundwater

Abandonment Method: Backfill with soil and compact.

Additional Comments: SPT hammer type: Donut hammer.



Log Drawn By: Laurie White
Contact: laurie.white@reumad.com.au

Logged By: **Tiffany Mabbott**
Checked By: **Ted Lilly**

Date: **02/06/2023**
Date: **29/06/2023**



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Project Number: **2301027**
Hole Depth: **2.40 m**
Date Started: **02/06/2023**
Date Completed: **02/06/2023**

Project Name: **Geotechnical Investigation**
Location / Site: **Part of 262 Hakone Road, Woongarra NSW**
Client: **Woolworths Group Pty Ltd**
Contractor: **Fico Group Pty Limited**
Method: **Solid Flight Auger (Ute mounted)**

Method	Water Level	Depth (mBGL)	Sample Type	HC Odour	Sample ID	Material Type	USCS Symbol	Graphic Log	Material Description	Moisture	Tests	Observations / Comments
											SPT	
SFA (V-bit)		0.20				Fill			FILL - Topsoil, reddish grey / pale brown (5YR 5/2), 10% silt, 60% sand, 30% gravel, moderately compacted.	damp		
		1				CL			CLAY with Sand - yellow / pale yellowish orange (10YR 8/6) and very light grey (N8), 80% clay, 20% sand, medium plasticity, stiff.	damp		
SFA (TC-bit)		1.50	R	Z	BH4/1.0-1.5	Natural					10,8,16 N=24	V-bit refusal at 1.0m, switch to TC-bit. 400mm recovery.
		2				CL			CLAY - yellow / pale yellowish orange (10YR 8/6) and very light grey (N8), 90% clay, 10% sand, very stiff, weathered sandstone.	damp		
		3							Terminated at 2.400 m TC-bit refusal on Bedrock.			
		4										
		5										

Abbreviations:

Hydrocarbon Odour
H High
M Medium
L Low
Z Zero

Sample Type
D Disturbed
U Undisturbed
B Bulk
R Representative
C Continuous
J Jar
Asb Asbestos

Strength Testing
SPT Standard Penetration Test
DCP Dynamic Cone Penetrometer
PP Pocket Penetrometer

Water Levels
Encountered Groundwater
Stabilised Groundwater

Abandonment Method: Backfill with soil and compact.

Additional Comments: SPT hammer type: Donut hammer. Upgradient from BH6.



Log Drawn By: **Laurie White**
Contact: laurie.white@reumad.com.au

Logged By: **Tiffany Mabbott**
Checked By: **Ted Lilly**

Date: **02/06/2023**
Date: **29/06/2023**



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Project Number: **2301027**
Hole Depth: **1.00 m**
Date Started: **02/06/2023**
Date Completed: **02/06/2023**

Project Name: **Geotechnical Investigation**
Location / Site: **Part of 262 Hakone Road, Woongarra NSW**
Client: **Woolworths Group Pty Ltd**
Contractor: **Fico Group Pty Limited**
Method: **Solid Flight Auger (Ute mounted)**

Method	Water Level	Depth (mBGL)	Material Type	USCS Symbol	Graphic Log	Material Description	Moisture	Observations / Comments
SFA (V-bit)		0.20	CL			CLAY with Silt - dusky brown (5YR 2/2), 80% clay, 20% silt, low plasticity, firm.	moist	
		0.50	CL			CLAY - very pale brown / greyish orange (10YR 7/4), 90% clay, 10% sand, medium plasticity, stiff.	damp	
SFA (TC-bit)		1	Natural			Weathered SANDSTONE - yellow / pale yellowish orange (10YR 8/6).	dry	V-bit refusal at 0.5m, switch to TC-bit.
		2				Terminated at 1.000 m TC-bit refusal.		
		3						
		4						
		5						

Abbreviations:

Hydrocarbon Odour
H High
M Medium
L Low
Z Zero

Sample Type
D Disturbed
U Undisturbed
B Bulk
R Representative
C Continuous
J Jar
Asb Asbestos

Strength Testing
SPT Standard Penetration Test
DCP Dynamic Cone Penetrometer
PP Pocket Penetrometer

Water Levels
▽ Encountered Groundwater
▼ Stabilised Groundwater

Abandonment Method: Backfill with soil and compact.
Additional Comments:



Log Drawn By: Laurie White
Contact: laurie.white@reumad.com.au

Logged By: **Tiffany Mabbott**
Checked By: **Ted Lilly**

Date: **02/06/2023**
Date: **29/06/2023**



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Project Number: **2301027**
Hole Depth: **3.20 m**
Date Started: **02/06/2023**
Date Completed: **02/06/2023**

Project Name: **Geotechnical Investigation**
Location / Site: **Part of 262 Hakone Road, Woongarra NSW**
Client: **Woolworths Group Pty Ltd**
Contractor: **Fico Group Pty Limited**
Method: **Solid Flight Auger (Ute mounted)**

Method	Water Level	Depth (mBGL)	Sample Type	HC Odour	Sample ID	Material Type	USCS Symbol	Graphic Log	Material Description	Moisture	Tests	Observations / Comments
											SPT	
		0.70				Fill			FILL - Topsoil, reddish grey / pale brown (5YR 5/2), 10% silt, 60% sand, 30% gravel, moderately compacted.	damp		
		1	R	Z	BH6/1.0-1.5							
			B	Z	BH6/1.0-2.0 (& 0.2-1.5)	CL			CLAY with Sand - yellow / pale yellowish orange (10YR 8/6), 80% clay, 20% sand, medium plasticity, stiff.	damp	2,4,7 N=11	280mm recovery.
		2.00				Natural						
			R	Z	BH6/2.5-3.0	CL			CLAY - yellow / pale yellowish orange (10YR 8/6), 90% clay, 10% sand, stiff, extremely weathered sandstone.	damp	1,17,12 N=29	310mm recovery.
		3										Switch to TC-bit at 2.95m.
		4							Terminated at 3.200 m TC-bit refusal on Bedrock.			
		5										

Abbreviations:
Hydrocarbon Odour
H High
M Medium
L Low
Z Zero

Sample Type
D Disturbed
U Undisturbed
B Bulk
R Representative
C Continuous
J Jar
Asb Asbestos

Strength Testing
SPT Standard Penetration Test
DCP Dynamic Cone Penetrometer
PP Pocket Penetrometer

Water Levels
Encountered Groundwater
Stabilised Groundwater

Abandonment Method: Backfill with soil and compact.
Additional Comments: SPT hammer type: Donut hammer.



Log Drawn By: **Laurie White**
Contact: laurie.white@reumad.com.au

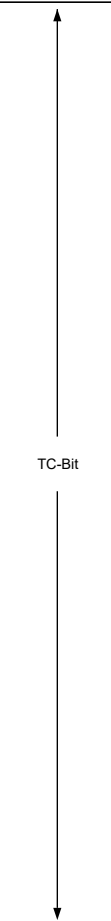
Logged By: **Tiffany Mabbott**
Checked By: **Ted Lilly**

Date: **02/06/2023**
Date: **29/06/2023**

Client name: Woolworths Group Ltd
Project name: Woongarra
Project Number: 2301027A
Location: 262 Hakone Road, Woongarra NSW, Australia

Position: E: 356688.60
 N: 6321351.15
Datum: 56
Ground Surface Elevation (mAHD): 44

Date: 19/02/2025
Drill Rig Supplier: Fico Group Pty Ltd
Drilling Method: Ute rig
Logged/Checked: PDP/

Drilling Method	Depth (m)	Water	Samples	SPT	Soil Origin	Classification Code	Graphic Log	Moisture	Material Description	Remarks	
										Observations / Comments	
V-Bit	0.3				Fill	F		D	Fill Sandy GRAVEL gray(7.5yr/6/1), poorly compacted, medium sized, medium to coarse grained sand, dry.	V-bit refusal at 0.3m, switch to TC-bit	
	0.7				Rock	SST			SANDSTONE: moderately weathered, reddish yellow (5yr/6/6), medium resistance.	SPT not conducted - dense/competent material.	
	1				Rock	SST		D	SANDSTONE: moderately weathered, light gray(7.5yr/7/1), dry, weathered sandstone. medium resistance.		
	2										
	2.5				Rock	SST		D	SANDSTONE: slightly weathered, reddish brown, dry, high resistance.		
	3				Rock	SST		D			
	4										
									BH7 Terminated at 4.5m (Target depth)		
Sample Type		Field Tests					Moisture			Geo-Logix Pty Ltd	
D Disturbed		PID Photo Ionisation Detector					D Dry			Building Q2, Level 3	
UD Undisturbed		PP Pocket Penetrometer (kPa)					SLM Slightly Moist			Unit 2309 / Daydream Street	
B Bulk		SPT Standard Penetration Test					M Moist			Warriewood NSW 2102	
R Representative		DCP Dynamic Cone Penetration					D Dry			www.geo-logix.com.au	
C Continuous							Hydrocarbon odour			02 9979 1722	
ASB Asbestos							H High				
Groundwater							M Medium				
▶ In							L Low				
◀ Out							Z Zero				
▼ During Drilling											
▼ Stabilised											

Client name: Woolworths Group Ltd
Project name: Woongarrah
Project Number: 2301027A
Location: 262 Hakone Road, Woongarrah NSW, Australia

Position: E: 356748.85
N: 6321352.04
Datum: 56
Ground Surface Elevation (mAHD): 50.2

Date: : 19/02/2025
Drill Rig Supplier: Fico Group Pty Ltd
Drilling Method: Ute rig
Logged/Checked: PDP/

Drilling Method	Depth (m)	Water	Samples	SPT	Soil Origin	Classification Code	Graphic Log	Moisture	Material Description	Remarks
										Observations / Comments
V-Bit	0.3				Fill	F		D	Fill Gravelly SAND gray(10yr/6/1), poorly compacted, medium grained, medium to coarse sized gravel, dry, angular gravels .	V-bit refusal at 2m, switch to TC-bit
	1		Natural	CH		D	Sandy CLAY CH: firm, high plasticity, light gray(7.5yr/7/1), fine grained sand, dry.			
	1.5									
	1.8		Natural	SC		M	Clayey SAND SC: light gray(7.5yr/7/1) mottled red, medium dense, fine to medium grained, moist.			
	2		Rock	SST			SANDSTONE: highly weathered, light gray(7.5yr/7/1).			
TC-Bit	2.4								SANDSTONE: highly weathered, light gray(5yr/7/1); moist, high resistance.	SPT not conducted due to high material resistance
	3									
	4									
	5									

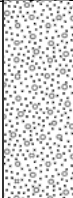
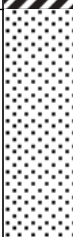
Sample Type	Field Tests	Moisture	Geo-Logix Pty Ltd
D Disturbed	PID Photo Ionisation Detector	D Dry	Building Q2, Level 3
UD Undisturbed	PP Pocket Penetrometer (kPa)	SLM Slightly Moist	Unit 2309 / Daydream Street
B Bulk	SPT Standard Penetration Test	M Moist	Warriewood NSW 2102
R Representative	DCP Dynamic Cone Penetration	D Dry	
C Continuous			www.geo-logix.com.au
ASB Asbestos		Hydrocarbon odour	02 9979 1722
Groundwater		H High	
▶ In		M Medium	
◀ Out		L Low	
⚡ During Drilling		Z Zero	
⚡ Stabilised			

				Borehole Record: BH8				Page: 2 OF 2			
Client name: Woolworths Group Ltd Project name: Woongarra Project Number: 2301027A Location: 262 Hakone Road, Woongarra NSW, Australia				Position: E: 356748.85 N: 6321352.04 Datum: 56 Ground Surface Elevation (mAHD): 50.2				Date: : 19/02/2025 Drill Rig Supplier: Fico Group Pty Ltd Drilling Method: Ute rig Logged/Checked: PDP/			
Drilling Method	Depth (m)	Water	Samples	SPT	Soil Origin	Classification Code	Graphic Log	Moisture	Material Description	Remarks	
										Observations / Comments	
 TC-Bit 	6.3 7 8 8.3 9	 After Drilling			Rock	SST		M	SANDSTONE: highly weathered, light gray(5yr/7/1), moist, high resistance.	Water at 6.5m after drilling	
				Rock	SST		M	SANDSTONE: highly weathered, light gray (7.5yr/7/1), very fine grained, moist, medium resistance.			
				Rock	SST		M	As above, but pale red, low resistance.			
									BH8 Terminated at 10m (target depth)		
Sample Type D Disturbed UD Undisturbed B Bulk R Representative C Continuous ASB Asbestos Groundwater  In  Out  During Drilling  Stabilised			Field Tests PID Photo Ionisation Detector PP Pocket Penetrometer (kPa) SPT Standard Penetration Test DCP Dynamic Cone Penetration			Moisture D Dry SLM Slightly Moist M Moist D Dry Hydrocarbon odour H High M Medium L Low Z Zero			Geo-Logix Pty Ltd Building Q2, Level 3 Unit 2309 / Daydream Street Warriewood NSW 2102 www.geo-logix.com.au 02 9979 1722		

Client name: Woolworths Group Ltd
Project name: Woongarra
Project Number: 2301027A
Location: 262 Hakone Road, Woongarra NSW, Australia

Position: E: 356781.77
 N: 6321276.08
Datum: 56
Ground Surface Elevation (mAHD): 51.7

Date: : 19/02/2025
Drill Rig Supplier: Fico Group Pty Ltd
Drilling Method: Ute rig
Logged/Checked: PDP/

Drilling Method	Depth (m)	Water	Samples	SPT	Soil Origin	Classification Code	Graphic Log	Moisture	Material Description	Remarks
										Observations / Comments
V-Bit ↓ ↑ TC-Bit	0.5				Natural	SC		D	Clayey SAND SC: reddish yellow(7.5yr/6/6), fine to medium grained, dry.	V-bit refusal at 0.5m, switch to TC-bit
	1				Rock	CON		M	CONGLOMERATE: , reddish yellow (7.5yr/6/8), moist, medium to coarse rounded and subrounded clasts in a sandy matrix.	
	1.4									
	2				Natural	CH		M	Sandy CLAY CH: firm, high plasticity, reddish yellow(5yr/6/6), fine grained sand, dry.	
	3									
	3			SPT 7, 5, 8 (N = 13)					CLAY CH: stiff, high plasticity, light gray(7.5yr/7/1), with fine grained sand, moist.	
	4				Natural	CH		M		
	4.9			SPT 5, 6, 8 (N = 14)						
	5				Rock	SST		M	Extremely weathered, CLAY SST: stiff, high plasticity, light gray (7.5yr/7/1), with fine grained sand, organic, low resistance.	
Sample Type D Disturbed UD Undisturbed B Bulk R Representative C Continuous ASB Asbestos Groundwater ▶ In ◀ Out ⚡ During Drilling ⚡ Stabilised		Field Tests PID Photo Ionisation Detector PP Pocket Penetrometer (kPa) SPT Standard Penetration Test DCP Dynamic Cone Penetration					Moisture D Dry SLM Slightly Moist M Moist D Dry Hydrocarbon odour H High M Medium L Low Z Zero		Geo-Logix Pty Ltd Building Q2, Level 3 Unit 2309 / Daydream Street Warriewood NSW 2102 www.geo-logix.com.au 02 9979 1722	



Client name: Woolworths Group Ltd
Project name: Woongarrah
Project Number: 2301027A
Location: 262 Hakone Road, Woongarrah NSW, Australia

Position: E: 356781.77
N: 6321276.08
Datum: 56
Ground Surface Elevation (mAHD): 51.7

Date: : 19/02/2025
Drill Rig Supplier: Fico Group Pty Ltd
Drilling Method: Ute rig
Logged/Checked: PDP/

Drilling Method	Depth (m)	Water	Samples	SPT	Soil Origin	Classification Code	Graphic Log	Moisture	Material Description	Remarks
										Observations / Comments
↑ TC-Bit ↓	6.2 7 7.4			SPT 9, 15, 18 (N = 33)	Rock	SST		M	Extremely weathered, CLAY SST: stiff, high plasticity, light gray (7.5yr/7/1), with fine grained sand, organic, low resistance.	
				Rock	SST			SANDSTONE: highly weathered, light gray(5yr/7/1), very high resistance.		
				SPT 11, 13, 24 (N = 37)	Rock	SST		M	SANDSTONE: , light gray(7.5yr/7/1), moist.	
									BH9 refusal at 7.5m (TC-bit refusal at 7.5 m)	
Sample Type		Field Tests					Moisture		Geo-Logix Pty Ltd	
D Disturbed		PID Photo Ionisation Detector					D Dry		Building Q2, Level 3	
UD Undisturbed		PP Pocket Penetrometer (kPa)					SLM Slightly Moist		Unit 2309 / Daydream Street	
B Bulk		SPT Standard Penetration Test					M Moist		Warriewood NSW 2102	
R Representative		DCP Dynamic Cone Penetration					D Dry		www.geo-logix.com.au	
C Continuous							Hydrocarbon odour		02 9979 1722	
ASB Asbestos							H High			
Groundwater							M Medium			
In							L Low			
Out							Z Zero			
During Drilling										
Stabilised										

				Borehole Record: BH10				Page: 1 OF 1			
Client name: Woolworths Group Ltd Project name: Woongarra Project Number: 2301027A Location: 262 Hakone Road, Woongarra NSW, Australia				Position: E: 356698.42 N: 6321351.30 Datum: 56 Ground Surface Elevation (mAHD): 43.5				Date: : 19/02/2025 Drill Rig Supplier: Fico Group Pty Ltd Drilling Method: Ute rig Logged/Checked: PDP/			
Drilling Method	Depth (m)	Water	Samples	SPT	Soil Origin	Classification Code	Graphic Log	Moisture	Material Description	Remarks	
	0.5				Natural	CH		D	Sandy CLAY CH: stiff, high plasticity, light brown (7.5yr/6/3), fine grained sand, trace fine to medium sized gravel, dry.		
	1				Natural	CH		M	CLAY CH: firm, high plasticity, brown(7.5yr/5/4), moist.		
	1.8			SPT 2, 3, 5 (N = 8)							
	2			Natural	CH	M		CLAY CH: firm, high plasticity, dark gray(7.5yr/4/1), with fine grained sand, moist.			
TC-Bit	2.7				Rock	SST		D	SANDSTONE: , reddish yellow(7.5yr/6/6), dry.	V-bit refusal at 2.7 m, switch to TC-bit. SPT Refusal at 2.7 m.	
BH10 refusal at 2.8m (TC-bit refusal)											
Sample Type D Disturbed UD Undisturbed B Bulk R Representative C Continuous ASB Asbestos Groundwater  In  Out  During Drilling  Stabilised		Field Tests PID Photo Ionisation Detector PP Pocket Penetrometer (kPa) SPT Standard Penetration Test DCP Dynamic Cone Penetration				Moisture D Dry SLM Slightly Moist M Moist D Dry Hydrocarbon odour H High M Medium L Low Z Zero			Geo-Logix Pty Ltd Building Q2, Level 3 Unit 2309 / Daydream Street Warriewood NSW 2102 www.geo-logix.com.au 02 9979 1722		

Client name: Woolworths Group Ltd
Project name: Woongarra
Project Number: 2301027A
Location: 262 Hakone Road, Woongarra NSW, Australia

Position: E: 356781.95
 N: 6321217.73
Datum: 56
Ground Surface Elevation (mAHD): 47.5

Date: 19/02/2025
Drill Rig Supplier: Fico Group Pty Ltd
Drilling Method: Ute rig
Logged/Checked: PDP/

Drilling Method	Depth (m)	Water	Samples	SPT	Soil Origin	Classification Code	Graphic Log	Moisture	Material Description	Remarks
										Observations / Comments
 V-Bit	0.26				Fill	F		D	Fill Gravelly SAND brown(7.5yr/5/2), poorly compacted, fine to medium grained, medium sized gravel, dry.	
	0.6				Natural	CI		D	Sandy CLAY CI: firm, medium plasticity, light brown (7.5yr/6/3), fine grained sand, dry.	
	0.9				Natural	CI		D	CLAY CI: stiff, medium plasticity, pinkish gray(7.5yr/6/2), with fine grained sand, dry.	
	1				Natural	CH		D	CLAY CH: firm, high plasticity, reddish brown(5yr/4/4), dry.	
	1.6			SPT 4, 5, 4 (N = 9)	Natural	CH		M	CLAY CH: stiff, high plasticity, light gray(7.5yr/7/1), moist.	
	2				Natural	CH		M	As above, but pinkish gray (7.5yr/7/2).	
	2.5				Natural	CH		M		
	3			SPT 6, 5, 8 (N = 13)	Natural	CI		M	Sandy CLAY CI: stiff, medium plasticity, light gray(5yr/7/1), fine to medium grained sand, inorganic, moist.	
	4				Rock	SST		M	Extremely weathered, CLAY SST: stiff, high plasticity, light gray (7.5yr/7/1), with fine grained sand.	
	4.3			SPT 8, 9, 12 (N = 21)	Rock	SST		M	Extremely weathered, Sandy CLAY SST: stiff, high plasticity, light gray (5yr/7/1), fine grained sand.	
	5				Rock	SST		D	SANDSTONE: highly weathered, light reddish brown (5yr/6/4), very fine grained, dry.	
TC-Bit					Rock	SST		D		V-bit refusal at 5.5m, change to TC-bit

Sample Type
 D Disturbed
 UD Undisturbed
 B Bulk
 R Representative
 C Continuous
 ASB Asbestos
 Groundwater
 In
 Out
 During Drilling
 Stabilised

Field Tests
 PID Photo Ionisation Detector
 PP Pocket Penetrometer (kPa)
 SPT Standard Penetration Test
 DCP Dynamic Cone Penetration

Moisture
 D Dry
 SLM Slightly Moist
 M Moist
 D Dry
 Hydrocarbon odour
 H High
 M Medium
 L Low
 Z Zero

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 Unit 2309 / Daydream Street
 Warriewood NSW 2102
 www.geo-logix.com.au
 02 9979 1722

				Borehole Record: BH11				Page: 2 OF 2			
Client name: Woolworths Group Ltd Project name: Woongarrah Project Number: 2301027A Location: 262 Hakone Road, Woongarrah NSW, Australia				Position: E: 356781.95 N: 6321217.73 Datum: 56 Ground Surface Elevation (mAHD): 47.5				Date: : 19/02/2025 Drill Rig Supplier: Fico Group Pty Ltd Drilling Method: Ute rig Logged/Checked: PDP/			
Drilling Method	Depth (m)	Water	Samples	SPT	Soil Origin	Classification Code	Graphic Log	Moisture	Material Description	Remarks	
										Observations / Comments	
					Rock	SST		D	SANDSTONE: highly weathered, light reddish brown (5yr/6/4), very fine grained, dry.		
									BH11 Terminated at 7m (Target depth)		
Sample Type D Disturbed UD Undisturbed B Bulk R Representative C Continuous ASB Asbestos Groundwater  In  Out  During Drilling  Stabilised			Field Tests PID Photo Ionisation Detector PP Pocket Penetrometer (kPa) SPT Standard Penetration Test DCP Dynamic Cone Penetration				Moisture D Dry SLM Slightly Moist M Moist D Dry Hydrocarbon odour H High M Medium L Low Z Zero		Geo-Logix Pty Ltd Building Q2, Level 3 Unit 2309 / Daydream Street Warriewood NSW 2102 www.geo-logix.com.au 02 9979 1722		

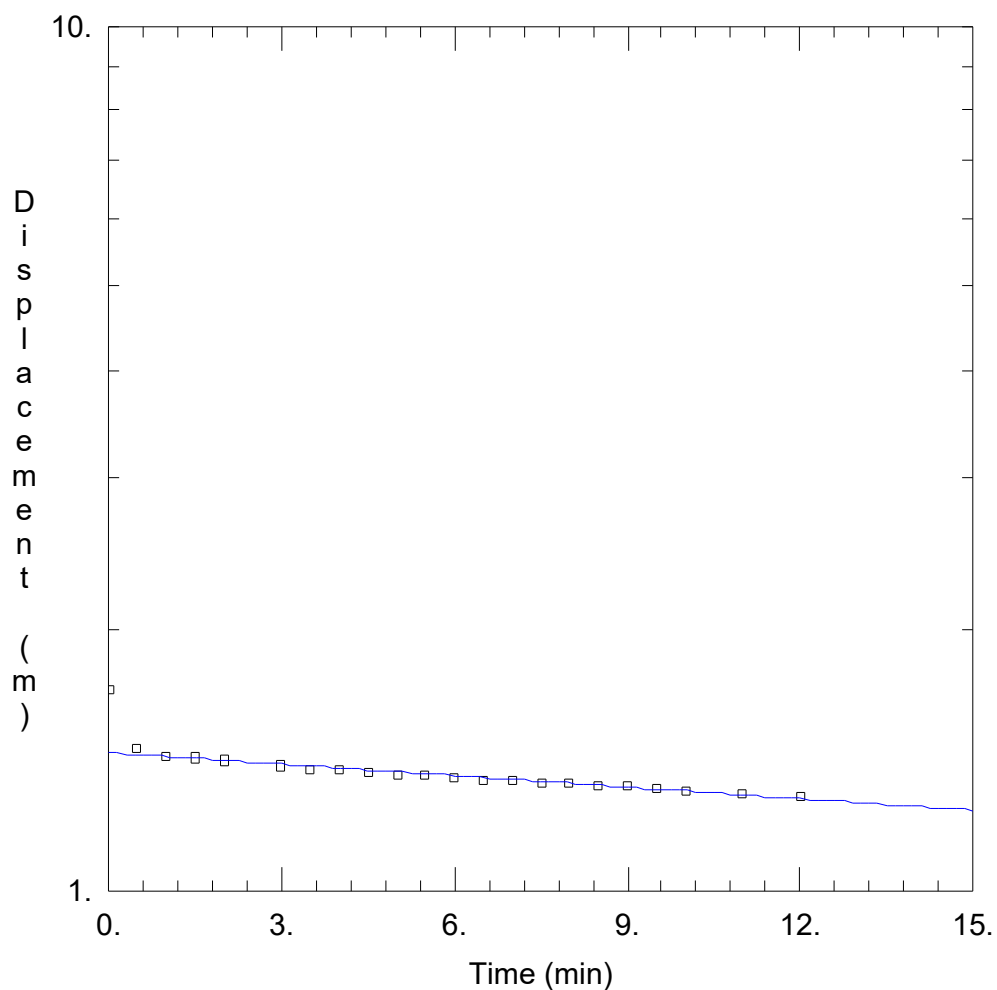
Client name: Woolworths Group Ltd
Project name: Woongarrah
Project Number: 2301027A
Location: 262 Hakone Road, Woongarrah NSW, Australia

Position: E: 356701.18
 N: 6321178.31
Datum: 56
Ground Surface Elevation (mAHD): 37.8

Date: 19/02/2025
Drill Rig Supplier: Fico Group Pty Ltd
Drilling Method: Ute rig
Logged/Checked: PDP/

Drilling Method	Depth (m)	Water	Samples	SPT	Soil Origin	Classification Code	Graphic Log	Moisture	Material Description	Remarks	
										Observations / Comments	
V-Bit	0.3	After Drilling			Fill	F		M	Fill Silty SAND dark brown(10yr/3/3), poorly compacted, fine to medium grained, moist.	Water at 4.1m after drilling	
	0.8			Fill	F		M	As above, but gray(7.5yr/6/1).			
	1			Natural	CH		M	CLAY CH: firm, high plasticity, reddish yellow(7.5yr/6/6), with fine grained sand, moist.			
	1.5			SPT 3, 4, 6 (N = 10)	Natural	CH		M	CLAY CH: stiff, high plasticity, reddish yellow(7.5yr/7/6) and grey, inorganic, moist.		
	2				Natural	CH		M	CLAY CH: stiff, high plasticity, reddish yellow(7.5yr/7/8), with fine grained sand, moist.		
	2.3				Natural	CH		M	CLAY CH: stiff, high plasticity, reddish yellow(7.5yr/6/6), with fine grained sand, moist.		
	3			SPT 2, 4, 6 (N = 10)	Natural	CH		M	Extremely weathered, CLAY SST: firm, high plasticity, light gray (7.5yr/7/1), trace fine grained sand.		
	3.6				Rock	SST		M	SANDSTONE: highly weathered, reddish yellow (7.5yr/7/6), moist.		
	4										
	4.6				SPT 9, 14, 23 (N = 37)	Rock	SST		M		
BH12 Terminated at 5m (Target depth)											
Sample Type D Disturbed UD Undisturbed B Bulk R Representative C Continuous ASB Asbestos Groundwater In Out During Drilling Stabilised		Field Tests PID Photo Ionisation Detector PP Pocket Penetrometer (kPa) SPT Standard Penetration Test DCP Dynamic Cone Penetration					Moisture D Dry SLM Slightly Moist M Moist D Dry Hydrocarbon odour H High M Medium L Low Z Zero		Geo-Logix Pty Ltd Building Q2, Level 3 Unit 2309 / Daydream Street Warriewood NSW 2102 www.geo-logix.com.au 02 9979 1722		

ATTACHMENT H



GROUNDWATER INVESTIGATION

Data Set: Z:\...\MW1 1.aqt

Date: 05/02/25

Time: 10:55:00

PROJECT INFORMATION

Company: Geo-Logix

Client: Woolworths Group Ltd

Project: 2301027c

Location: Woongarra, NSW

Test Well: MW1 (1)

Test Date: 28/04/2025

AQUIFER DATA

Saturated Thickness: 10. m

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MW1)

Initial Displacement: 1.705 m

Static Water Column Height: 1.705 m

Total Well Penetration Depth: 8.75 m

Screen Length: 6. m

Casing Radius: 0.025 m

Well Radius: 0.025 m

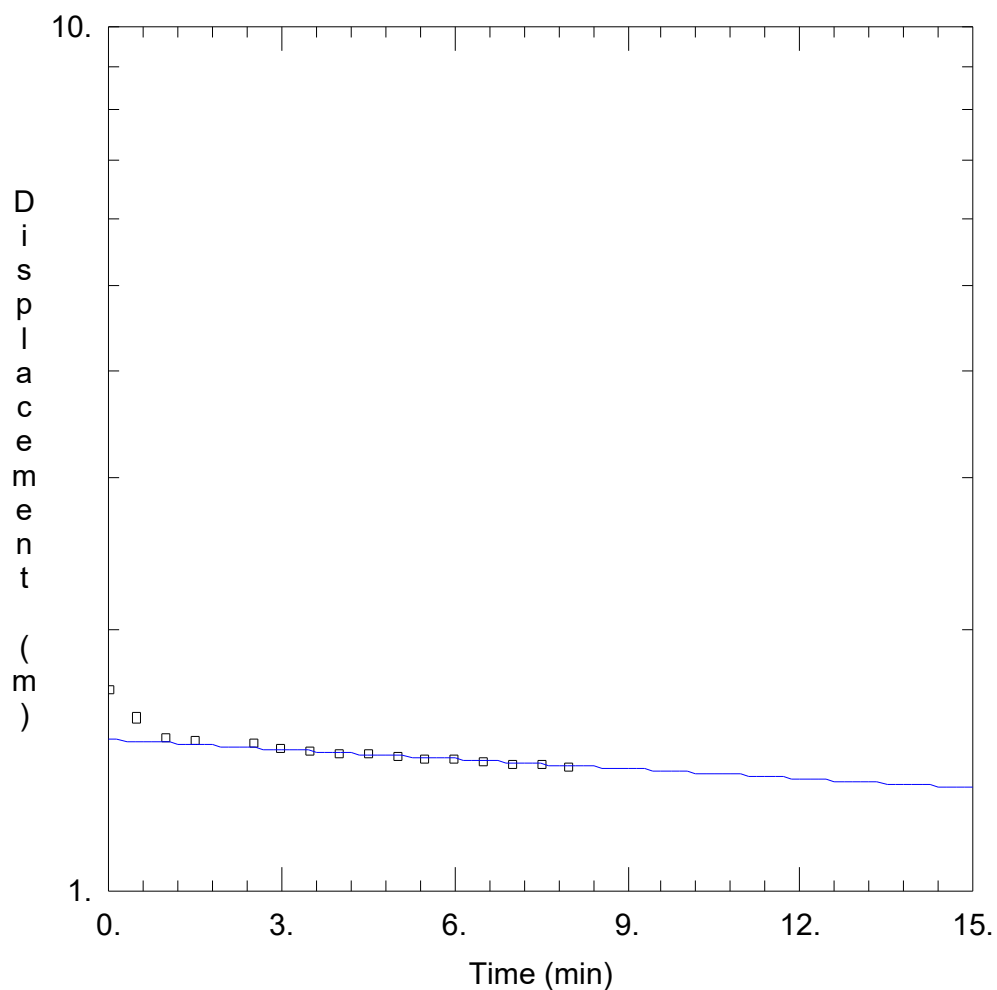
SOLUTION

Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 5.422E-7 m/min

y0 = 1.444 m



GROUNDWATER INVESTIGATION

Data Set: Z:\...\MW1 2.aqt

Date: 05/02/25

Time: 10:56:38

PROJECT INFORMATION

Company: Geo-Logix

Client: Woolworths Group Ltd

Project: 2301027c

Location: Woongarah, NSW

Test Well: MW1 (2)

Test Date: 28/04/2025

AQUIFER DATA

Saturated Thickness: 10. m

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MW1 (2))

Initial Displacement: 1.705 m

Static Water Column Height: 1.705 m

Total Well Penetration Depth: 8.75 m

Screen Length: 6. m

Casing Radius: 0.025 m

Well Radius: 0.025 m

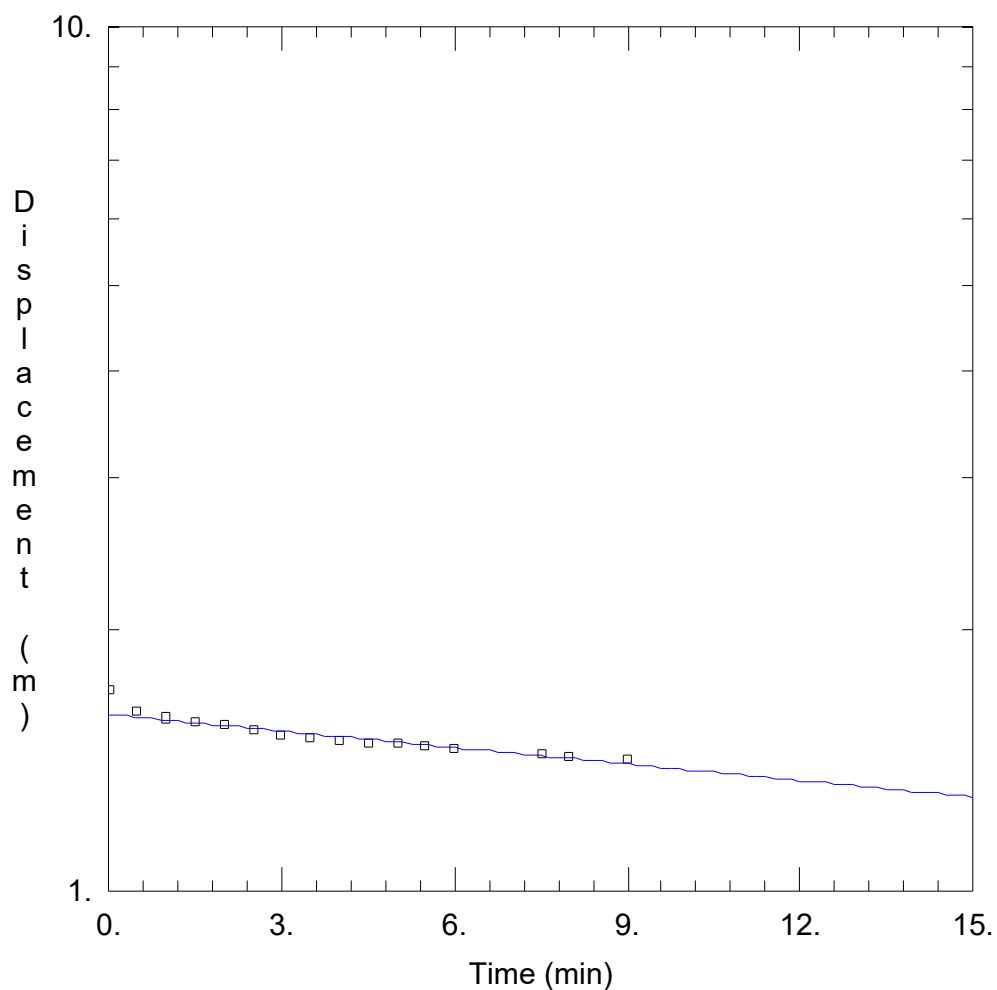
SOLUTION

Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 4.581E-7 m/min

y0 = 1.495 m



WELL TEST ANALYSIS

Data Set: Z:\...\MW1 3.aqt

Date: 05/02/25

Time: 10:59:21

PROJECT INFORMATION

Company: Geo-Logix

Client: Woolworths Group Ltd

Project: 2301027c

Location: Woongarra, NSW

Test Well: MW1 (3)

Test Date: 28/04/2025

AQUIFER DATA

Saturated Thickness: 10. m

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MW1)

Initial Displacement: 1.705 m

Static Water Column Height: 1.705 m

Total Well Penetration Depth: 8.75 m

Screen Length: 6. m

Casing Radius: 0.025 m

Well Radius: 0.025 m

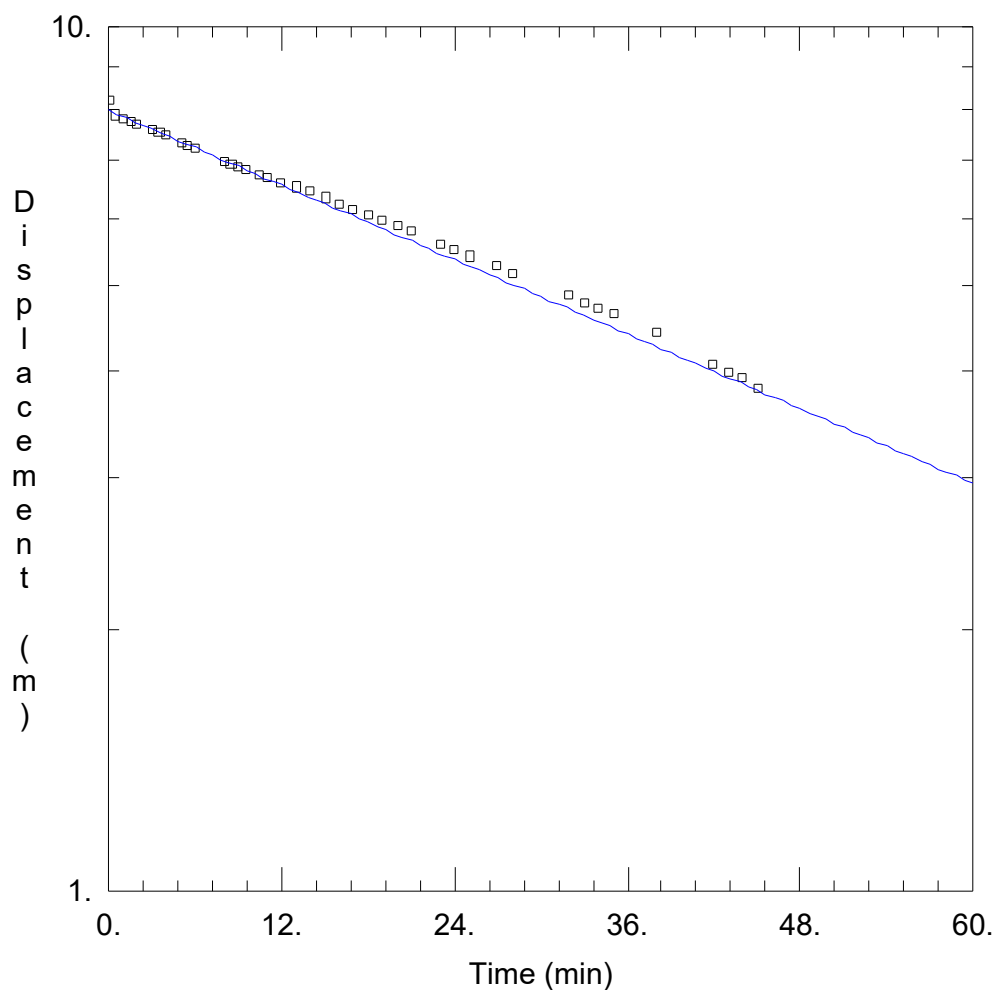
SOLUTION

Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 7.796E-7 m/min

y0 = 1.599 m



GROUNDWATER INVESTIGATION

Data Set: Z:\...\MW2 1.aqt

Date: 05/02/25

Time: 11:09:27

PROJECT INFORMATION

Company: Geo-Logix

Client: Woolworths Group Ltd

Project: 2301027c

Location: Woongarra, NSW

Test Well: MW2 (1)

Test Date: 28/04/2025

AQUIFER DATA

Saturated Thickness: 10. m

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MW2)

Initial Displacement: 8.23 m

Static Water Column Height: 8.23 m

Total Well Penetration Depth: 18.1 m

Screen Length: 15. m

Casing Radius: 0.025 m

Well Radius: 0.025 m

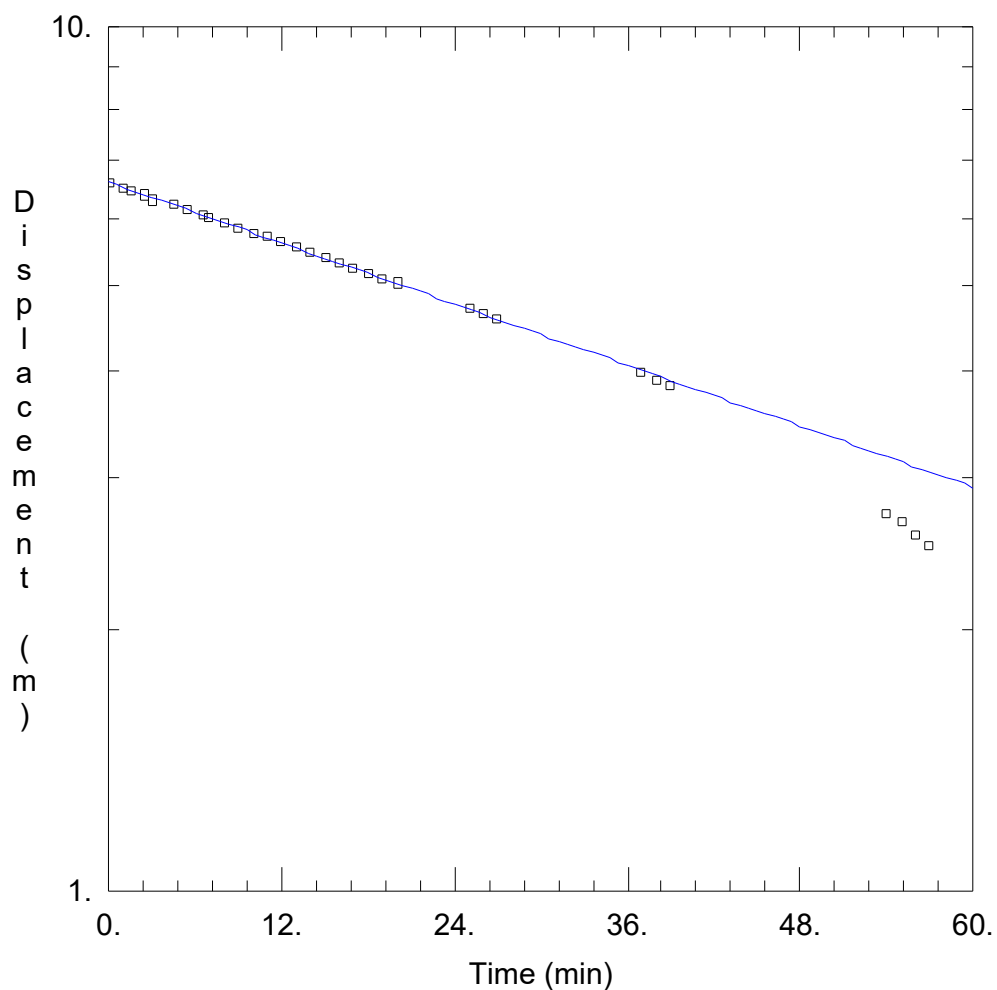
SOLUTION

Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 5.13E-7 m/min

y0 = 7.99 m



GROUNDWATER INVESTIGATION

Data Set: Z:\...\MW2 2.aqt

Date: 05/02/25

Time: 11:17:34

PROJECT INFORMATION

Company: Geo-Logix

Client: Woolworths Group Ltd

Project: 2301027c

Location: Woongarah, NSW

Test Well: MW2 (2)

Test Date: 28/04/2025

AQUIFER DATA

Saturated Thickness: 10. m

Anisotropy Ratio (Kz/Kr): 0.1

WELL DATA (MW2)

Initial Displacement: 6.59 m

Static Water Column Height: 8.23 m

Total Well Penetration Depth: 18.1 m

Screen Length: 15. m

Casing Radius: 0.025 m

Well Radius: 0.025 m

SOLUTION

Aquifer Model: Unconfined

Solution Method: Bouwer-Rice

K = 4.201E-7 m/min

y0 = 6.607 m

ATTACHMENT I

ANALYTICAL REPORT

Report: AR-25-NV-008789-01	Date: 03/05/2025	Order : EUAUTWU-00068753
Attention to:	Analytical Reports, Eurofins Environment Testing Australia Pty Ltd 6 Monterey Road, Dandenong South, 3175 Melbourne, AUSTRALIA	
Your contact:	Monica Chen +61385645000, Monica.Chen@eurofinsanz.com	
PO number:	1213511	
Submission Reference:	Merged from order CAU001-Order-1213511-250501.xml	



25-Ap0069219: MW1					
Sample code:	726-2025-00023715	Reception date:	01/05/2025	Reception temperature:	16.2 °C
Sampled Date & Time:	29/04/2025 13:41				
	RESULTS	LOQ	TEST	START DATE	
Escherichia coli	<100 MPN/100 ml	1	ZML8F	01/05/2025	
Total Coliforms	19000 MPN/100 ml	1	ZMLAF	01/05/2025	

25-Ap0069220: MW2					
Sample code:	726-2025-00023716	Reception date:	01/05/2025	Reception temperature:	16.2 °C
Sampled Date & Time:	29/04/2025 13:41				
	RESULTS	LOQ	TEST	START DATE	
Escherichia coli	200 MPN/100 ml	1	ZML8F	01/05/2025	
Total Coliforms	2.40x10 ⁵ MPN/100 ml	1	ZMLAF	01/05/2025	

LIST OF METHODS	
ZML8F - Escherichia coli E (Water) [AU Food] <1 >240 000 /100 ml (2) Colilert-18-Q: AS 4276.21	ZMLAF - Total Coliforms E (Water) [AU Food] <1 >240 000 /100 ml (2) Colilert-18-Q: AS 4276.21



Khalid Haydar (Team Leader - Food Melbourne)

EXPLANATORY NOTE	
◆ Test is not accredited ○ Test is subcontracted within Eurofins group and is accredited ● Test is subcontracted within Eurofins group and is not accredited □ Test is subcontracted outside Eurofins group and is accredited ■ Test is subcontracted outside Eurofins group and is not accredited	N/A means Not Applicable Not Detected means not detected at or above the Limit of Quantification (LOQ) LOQ means Limit of Quantification and the unit of LOQ is the same as the result unit
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates The test result(s) in this report apply only to the sample as received.	

The tests are identified by a five-digit code, their description is available on request.

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<https://www.eurofins.com.au/Food-testing>

END OF REPORT

Geo-Logix P/L
Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102



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Site Number 18217

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Arrangement for the mutual recognition of the
equivalence of testing, medical testing, calibration,
inspection, proficiency testing scheme providers and
reference materials producers reports and certificates.

Attention: Joe Unwin

Report 1213511-W-V2
Project name WOONGARRAH
Project ID 2301027C
Received Date Apr 29, 2025

Client Sample ID			MW1	MW2	DW1	RW1
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S25- Ap0069219	S25- Ap0069220	S25- Ap0069221	S25- Ap0069222
Date Sampled			Apr 28, 2025	Apr 28, 2025	Apr 28, 2025	Apr 28, 2025
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
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
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
Dissolved Gases						
Methane	0.05	mg/L	< 0.05	< 0.05	-	-
Volatile Organics						
1.1-Dichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1.1-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1.2-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1.2.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2-Dibromoethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2-Dichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2.3-Trichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2.4-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.3-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.3-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.3.5-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.4-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Butanone (MEK)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
2-Propanone (Acetone)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
4-Chlorotoluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
4-Methyl-2-pentanone (MIBK)	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005

Client Sample ID Sample Matrix Eurofins Sample No. Date Sampled Test/Reference	LOR	Unit	MW1 Water S25- Ap0069219 Apr 28, 2025	MW2 Water S25- Ap0069220 Apr 28, 2025	DW1 Water S25- Ap0069221 Apr 28, 2025	RW1 Water S25- Ap0069222 Apr 28, 2025
Volatile Organics						
Allyl chloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromochloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromodichloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromoform	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromomethane	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Carbon disulfide	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Carbon Tetrachloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chloroethane	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Chloroform	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Chloromethane	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
cis-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
cis-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibromochloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibromomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dichlorodifluoromethane	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Iodomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Isopropyl benzene (Cumene)	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
Methylene Chloride	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Styrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Tetrachloroethene	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
trans-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
trans-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Trichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Trichlorofluoromethane	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Vinyl chloride	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
Total MAH*	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
Vic EPA IWRG 621 CHC (Total)*	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Vic EPA IWRG 621 Other CHC (Total)*	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
4-Bromofluorobenzene (surr.)	1	%	99	104	110	92
Toluene-d8 (surr.)	1	%	122	130	133	114
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001

Client Sample ID			MW1	MW2	DW1	RW1
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S25- Ap0069219	S25- Ap0069220	S25- Ap0069221	S25- Ap0069222
Date Sampled			Apr 28, 2025	Apr 28, 2025	Apr 28, 2025	Apr 28, 2025
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	102	73	89	59
p-Terphenyl-d14 (surr.)	1	%	135	149	53	94
Organochlorine Pesticides						
Chlordanes - Total	0.002	mg/L	< 0.002	< 0.002	-	-
4,4'-DDD	0.0002	mg/L	< 0.0002	< 0.0002	-	-
4,4'-DDE	0.0002	mg/L	< 0.0002	< 0.0002	-	-
4,4'-DDT	0.0002	mg/L	< 0.0002	< 0.0002	-	-
a-HCH	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Aldrin	0.0002	mg/L	< 0.0002	< 0.0002	-	-
b-HCH	0.0002	mg/L	< 0.0002	< 0.0002	-	-
d-HCH	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Dieldrin	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Endosulfan I	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Endosulfan II	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Endosulfan sulphate	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Endrin	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Endrin aldehyde	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Endrin ketone	0.0002	mg/L	< 0.0002	< 0.0002	-	-
g-HCH (Lindane)	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Heptachlor	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Heptachlor epoxide	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Hexachlorobenzene	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Methoxychlor	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Toxaphene	0.005	mg/L	< 0.005	< 0.005	-	-
Aldrin and Dieldrin (Total)*	0.0002	mg/L	< 0.0002	< 0.0002	-	-
DDT + DDE + DDD (Total)*	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Vic EPA IWRG 621 OCP (Total)*	0.002	mg/L	< 0.002	< 0.002	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.002	mg/L	< 0.002	< 0.002	-	-
Dibutylchloroendate (surr.)	1	%	112	86	-	-
Tetrachloro-m-xylene (surr.)	1	%	124	96	-	-
Organophosphorus Pesticides						
Azinphos-methyl	0.002	mg/L	< 0.002	< 0.002	-	-
Bolstar	0.002	mg/L	< 0.002	< 0.002	-	-
Chlorfenvinphos	0.02	mg/L	< 0.02	< 0.02	-	-
Chlorpyrifos	0.002	mg/L	< 0.002	< 0.002	-	-
Chlorpyrifos-methyl	0.002	mg/L	< 0.002	< 0.002	-	-
Coumaphos	0.02	mg/L	< 0.02	< 0.02	-	-
Demeton-S	0.002	mg/L	< 0.002	< 0.002	-	-
Demeton-O	0.002	mg/L	< 0.002	< 0.002	-	-
Diazinon	0.002	mg/L	< 0.002	< 0.002	-	-

Client Sample ID Sample Matrix Eurofins Sample No. Date Sampled Test/Reference	LOR	Unit	MW1 Water S25- Ap0069219 Apr 28, 2025	MW2 Water S25- Ap0069220 Apr 28, 2025	DW1 Water S25- Ap0069221 Apr 28, 2025	RW1 Water S25- Ap0069222 Apr 28, 2025
Organophosphorus Pesticides						
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	-	-
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	0.02	mg/L	< 0.02	< 0.02	-	-
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	%	INT	138	-	-
Polychlorinated Biphenyls						
Aroclor-1016	0.005	mg/L	< 0.005	< 0.005	-	-
Aroclor-1221	0.005	mg/L	< 0.005	< 0.005	-	-
Aroclor-1232	0.005	mg/L	< 0.005	< 0.005	-	-
Aroclor-1242	0.005	mg/L	< 0.005	< 0.005	-	-
Aroclor-1248	0.005	mg/L	< 0.005	< 0.005	-	-
Aroclor-1254	0.005	mg/L	< 0.005	< 0.005	-	-
Aroclor-1260	0.005	mg/L	< 0.005	< 0.005	-	-
Total PCB*	0.005	mg/L	< 0.005	< 0.005	-	-
Dibutylchlorendate (surr.)	1	%	112	86	-	-
Tetrachloro-m-xylene (surr.)	1	%	124	96	-	-
Phenols (Halogenated)						
2-Chlorophenol	0.003	mg/L	< 0.003	< 0.003	-	-
2,4-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	-	-
2,4,5-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	-	-
2,4,6-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	-	-
2,6-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	-	-
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	< 0.01	-	-
Pentachlorophenol	0.01	mg/L	< 0.01	< 0.01	-	-
Tetrachlorophenols - Total	0.03	mg/L	< 0.03	< 0.03	-	-
Total Halogenated Phenol*	0.01	mg/L	< 0.01	< 0.01	-	-

Client Sample ID Sample Matrix Eurofins Sample No. Date Sampled Test/Reference	LOR	Unit	MW1 Water S25- Ap0069219 Apr 28, 2025	MW2 Water S25- Ap0069220 Apr 28, 2025	DW1 Water S25- Ap0069221 Apr 28, 2025	RW1 Water S25- Ap0069222 Apr 28, 2025
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	< 0.1	< 0.1	-	-
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03	< 0.03	-	-
2-Nitrophenol	0.01	mg/L	< 0.01	< 0.01	-	-
2.4-Dimethylphenol	0.003	mg/L	< 0.003	< 0.003	-	-
2.4-Dinitrophenol	0.03	mg/L	< 0.03	< 0.03	-	-
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	< 0.003	-	-
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006	< 0.006	-	-
Total cresols*	0.01	mg/L	< 0.01	< 0.01	-	-
4-Nitrophenol	0.03	mg/L	< 0.03	< 0.03	-	-
Dinoseb	0.1	mg/L	< 0.1	< 0.1	-	-
Phenol	0.003	mg/L	< 0.003	< 0.003	-	-
Phenol-d6 (surr.)	1	%	75	74	-	-
Total Non-Halogenated Phenol*	0.1	mg/L	< 0.1	< 0.1	-	-
Semivolatile Organics						
Aldrin and Dieldrin (Total)*	0.0001	mg/L	< 0.005	< 0.005	-	-
DDT + DDE + DDD (Total)*	0.0001	mg/L	< 0.005	< 0.005	-	-
Total PAH*	0.001	mg/L	< 0.001	< 0.001	-	-
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03	< 0.03	-	-
1-Chloronaphthalene	0.005	mg/L	< 0.005	< 0.005	-	-
1-Naphthylamine	0.005	mg/L	< 0.005	< 0.005	-	-
1.2-Dichlorobenzene	0.005	mg/L	< 0.005	< 0.005	-	-
1.2.3-Trichlorobenzene	0.005	mg/L	< 0.005	< 0.005	-	-
1.2.3.4-Tetrachlorobenzene	0.005	mg/L	< 0.005	< 0.005	-	-
1.2.3.5-Tetrachlorobenzene	0.005	mg/L	< 0.005	< 0.005	-	-
1.2.4-Trichlorobenzene	0.005	mg/L	< 0.005	< 0.005	-	-
1.2.4.5-Tetrachlorobenzene	0.005	mg/L	< 0.005	< 0.005	-	-
1.3-Dichlorobenzene	0.005	mg/L	< 0.005	< 0.005	-	-
1.3.5-Trichlorobenzene	0.005	mg/L	< 0.005	< 0.005	-	-
1.4-Dichlorobenzene	0.005	mg/L	< 0.005	< 0.005	-	-
2-Chloronaphthalene	0.005	mg/L	< 0.005	< 0.005	-	-
2-Chlorophenol	0.003	mg/L	< 0.003	< 0.003	-	-
2-Fluorobiphenyl (surr.)	1	%	102	73	-	-
2-Methylnaphthalene	0.005	mg/L	< 0.005	< 0.005	-	-
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	< 0.003	-	-
2-Naphthylamine	0.005	mg/L	< 0.005	< 0.005	-	-
2-Nitroaniline	0.005	mg/L	< 0.005	< 0.005	-	-
2-Nitrophenol	0.01	mg/L	< 0.01	< 0.01	-	-
2-Picoline	0.005	mg/L	< 0.005	< 0.005	-	-
2.3.4.6-Tetrachlorophenol	0.01	mg/L	< 0.01	< 0.01	-	-
2.4-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	-	-
2.4-Dimethylphenol	0.003	mg/L	< 0.003	< 0.003	-	-
2.4-Dinitrophenol	0.03	mg/L	< 0.03	< 0.03	-	-
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	-	-
2.4.6-Tribromophenol (surr.)	1	%	101	70	-	-
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	-	-
2.6-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	-	-
2.4-Dinitrotoluene	0.005	mg/L	< 0.005	< 0.005	-	-
2.6-Dinitrotoluene	0.005	mg/L	< 0.005	< 0.005	-	-
2.4-Dinitrotoluene + 2.6-Dinitrotoluene*	0.005	mg/L	< 0.005	< 0.005	-	-

Client Sample ID Sample Matrix Eurofins Sample No. Date Sampled Test/Reference	LOR	Unit	MW1 Water S25- Ap0069219 Apr 28, 2025	MW2 Water S25- Ap0069220 Apr 28, 2025	DW1 Water S25- Ap0069221 Apr 28, 2025	RW1 Water S25- Ap0069222 Apr 28, 2025
Semivolatile Organics						
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006	< 0.006	-	-
3-Methylcholanthrene	0.005	mg/L	< 0.005	< 0.005	-	-
3,3'-Dichlorobenzidine	0.005	mg/L	< 0.005	< 0.005	-	-
4-Aminobiphenyl	0.005	mg/L	< 0.005	< 0.005	-	-
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	< 0.01	-	-
4-Nitrophenol	0.03	mg/L	< 0.03	< 0.03	-	-
4,4'-DDD	0.005	mg/L	< 0.005	< 0.005	-	-
4,4'-DDE	0.005	mg/L	< 0.005	< 0.005	-	-
4,4'-DDT	0.005	mg/L	< 0.005	< 0.005	-	-
7,12-Dimethylbenz(a)anthracene	0.005	mg/L	< 0.005	< 0.005	-	-
a-HCH	0.005	mg/L	< 0.005	< 0.005	-	-
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	-	-
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	-	-
Acetophenone	0.005	mg/L	< 0.005	< 0.005	-	-
Aldrin	0.005	mg/L	< 0.005	< 0.005	-	-
Aniline	0.005	mg/L	< 0.005	< 0.005	-	-
Anthracene	0.001	mg/L	< 0.001	< 0.001	-	-
b-HCH	0.005	mg/L	< 0.005	< 0.005	-	-
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	-	-
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	-	-
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	-	-
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	-	-
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	-	-
Benzyl chloride	0.005	mg/L	< 0.005	< 0.005	-	-
Bis(2-ethylhexyl)phthalate	0.005	mg/L	< 0.005	< 0.005	-	-
Butyl benzyl phthalate	0.005	mg/L	< 0.005	< 0.005	-	-
Chrysene	0.001	mg/L	< 0.001	< 0.001	-	-
d-HCH	0.005	mg/L	< 0.005	< 0.005	-	-
Di-n-butyl phthalate	0.005	mg/L	< 0.005	< 0.005	-	-
Di-n-octyl phthalate	0.005	mg/L	< 0.005	< 0.005	-	-
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	-	-
Dibenz(a,j)acridine	0.005	mg/L	< 0.005	< 0.005	-	-
Dibenzofuran	0.005	mg/L	< 0.005	< 0.005	-	-
Dieldrin	0.005	mg/L	< 0.005	< 0.005	-	-
Diethyl phthalate	0.005	mg/L	< 0.005	< 0.005	-	-
Dimethyl phthalate	0.005	mg/L	< 0.005	< 0.005	-	-
Dimethylaminoazobenzene	0.005	mg/L	< 0.005	< 0.005	-	-
Diphenylamine	0.005	mg/L	< 0.005	< 0.005	-	-
Endosulfan I	0.005	mg/L	< 0.005	< 0.005	-	-
Endosulfan II	0.005	mg/L	< 0.005	< 0.005	-	-
Endosulfan sulphate	0.005	mg/L	< 0.005	< 0.005	-	-
Endrin	0.005	mg/L	< 0.005	< 0.005	-	-
Endrin aldehyde	0.005	mg/L	< 0.005	< 0.005	-	-
Endrin ketone	0.005	mg/L	< 0.005	< 0.005	-	-
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	-	-
Fluorene	0.001	mg/L	< 0.001	< 0.001	-	-
g-HCH (Lindane)	0.005	mg/L	< 0.005	< 0.005	-	-
Heptachlor	0.005	mg/L	< 0.005	< 0.005	-	-
Heptachlor epoxide	0.005	mg/L	< 0.005	< 0.005	-	-

Client Sample ID			MW1	MW2	DW1	RW1
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			S25- Ap0069219	S25- Ap0069220	S25- Ap0069221	S25- Ap0069222
Date Sampled			Apr 28, 2025	Apr 28, 2025	Apr 28, 2025	Apr 28, 2025
Test/Reference	LOR	Unit				
Semivolatiles Organics						
Hexachlorobenzene	0.005	mg/L	< 0.005	< 0.005	-	-
Hexachlorobutadiene	0.005	mg/L	< 0.005	< 0.005	-	-
Hexachlorocyclopentadiene	0.005	mg/L	< 0.005	< 0.005	-	-
Hexachloroethane	0.005	mg/L	< 0.005	< 0.005	-	-
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	-	-
Methoxychlor	0.005	mg/L	< 0.005	< 0.005	-	-
N-Nitrosodibutylamine	0.005	mg/L	< 0.005	< 0.005	-	-
N-Nitrosodipropylamine	0.005	mg/L	< 0.005	< 0.005	-	-
N-Nitrosopiperidine	0.005	mg/L	< 0.005	< 0.005	-	-
Naphthalene	0.001	mg/L	< 0.001	< 0.001	-	-
Nitrobenzene	0.005	mg/L	< 0.005	< 0.005	-	-
Nitrobenzene-d5 (surr.)	1	%	112	77	-	-
Pentachlorobenzene	0.005	mg/L	< 0.005	< 0.005	-	-
Pentachloronitrobenzene	0.005	mg/L	< 0.005	< 0.005	-	-
Pentachlorophenol	0.01	mg/L	< 0.01	< 0.01	-	-
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	-	-
Phenol	0.003	mg/L	< 0.003	< 0.003	-	-
Phenol-d6 (surr.)	1	%	75	74	-	-
Pronamide	0.005	mg/L	< 0.005	< 0.005	-	-
Pyrene	0.001	mg/L	< 0.001	< 0.001	-	-
Trifluralin	0.005	mg/L	< 0.005	< 0.005	-	-
Haloethers						
4-Bromophenyl phenyl ether	0.005	mg/L	< 0.005	< 0.005	-	-
4-Chlorophenyl phenyl ether	0.005	mg/L	< 0.005	< 0.005	-	-
Bis(2-chloroethoxy)methane	0.005	mg/L	< 0.005	< 0.005	-	-
Bis(2-chloroisopropyl)ether	0.005	mg/L	< 0.005	< 0.005	-	-
Ammonia (as N)	0.01	mg/L	0.03	0.03	-	-
Chloride	1	mg/L	330	40	-	-
Conductivity (at 25 °C)	10	uS/cm	860	240	-	-
Nitrate & Nitrite (as N)	0.05	mg/L	0.53	1.1	-	-
Nitrate (as N)	0.02	mg/L	0.27	1.1	-	-
Nitrite (as N)	0.02	mg/L	0.25	0.03	-	-
Organic Nitrogen (as N)*	0.2	mg/L	< 0.2	< 0.2	-	-
pH (at 25 °C)	0.1	pH Units	6.2	6.1	-	-
Phosphate total (as P)	0.01	mg/L	0.82	0.16	-	-
Redox Potential mV (relative to Ag/AgCl)	1	mV	210	200	-	-
Sulphate (as SO4)	2	mg/L	25	20	-	-
Total Dissolved Solids Dried at 180 °C ± 2 °C	10	mg/L	590	110	-	-
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	< 0.2	< 0.2	-	-
Total Nitrogen (as N)*	0.1	mg/L	0.5	1.1	-	-
Hardness mg equivalent CaCO3/L	1	mg/L	210	180	-	-
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	23	29	-	-
Carbonate Alkalinity (as CaCO3)	20	mg/L	< 20	< 20	-	-
Hydroxide Alkalinity (as CaCO3)	20	mg/L	< 20	< 20	-	-
Total Alkalinity (as CaCO3)	20	mg/L	23	29	-	-

Client Sample ID			MW1 Water S25- Ap0069219 Apr 28, 2025	MW2 Water S25- Ap0069220 Apr 28, 2025	DW1 Water S25- Ap0069221 Apr 28, 2025	RW1 Water S25- Ap0069222 Apr 28, 2025
Sample Matrix						
Eurofins Sample No.						
Date Sampled						
Test/Reference	LOR	Unit				
Alkali Metals						
Calcium	0.5	mg/L	26	21	-	-
Magnesium	0.5	mg/L	35	30	-	-
Potassium	0.5	mg/L	19	26	-	-
Sodium	0.5	mg/L	150	35	-	-
Heavy Metals						
Aluminium (filtered)	0.05	mg/L	< 0.05	< 0.05	-	-
Antimony (filtered)	0.005	mg/L	< 0.005	< 0.005	-	-
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Barium (filtered)	0.02	mg/L	0.24	< 0.02	-	-
Boron (filtered)	0.05	mg/L	< 0.05	< 0.05	-	-
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	-
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Copper (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Iron (filtered)	0.05	mg/L	0.32	5.0	-	-
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Lithium (filtered)	0.01	mg/L	< 0.01	< 0.01	-	-
Manganese (filtered)	0.005	mg/L	0.17	0.28	-	-
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Nickel (filtered)	0.001	mg/L	0.006	0.007	0.007	-
Selenium (filtered)	0.001	mg/L	< 0.001	< 0.001	-	-
Silver (filtered)	0.005	mg/L	< 0.005	< 0.005	-	-
Zinc (filtered)	0.005	mg/L	0.032	0.013	0.014	-
Pathogens						
E.coli (MPN)*	1	MPN/100mL	See attached	See attached	-	-
Total Coliforms (MPN)*	1	MPN/100mL	See attached	See attached	-	-
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA) ^{N11}	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA) ^{N11}	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA) ^{N11}	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA) ^{N11}	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA) ^{N11}	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid (PFNA) ^{N11}	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA) ^{N11}	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA) ^{N11}	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA) ^{N11}	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTeDA) ^{N15}	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA) ^{N11}	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	77	81	85	95
13C5-PFPeA (surr.)	1	%	97	96	114	104
13C5-PFHxA (surr.)	1	%	106	105	114	120
13C4-PFHpA (surr.)	1	%	121	108	132	113
13C8-PFOA (surr.)	1	%	109	105	115	129
13C5-PFNA (surr.)	1	%	105	111	115	127
13C6-PFDA (surr.)	1	%	99	106	111	140
13C2-PFUnDA (surr.)	1	%	106	97	107	131
13C2-PFDoDA (surr.)	1	%	102	97	96	133
13C2-PFTeDA (surr.)	1	%	108	103	101	122

Client Sample ID Sample Matrix Eurofins Sample No. Date Sampled Test/Reference	LOR	Unit	MW1 Water S25- Ap0069219 Apr 28, 2025	MW2 Water S25- Ap0069220 Apr 28, 2025	DW1 Water S25- Ap0069221 Apr 28, 2025	RW1 Water S25- Ap0069222 Apr 28, 2025
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA) ^{N11}	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) ^{N11}	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) ^{N11}	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE) ^{N11}	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE) ^{N11}	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) ^{N11}	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) ^{N11}	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	120	105	120	128
D3-N-MeFOSA (surr.)	1	%	149	146	145	165
D5-N-EtFOSA (surr.)	1	%	118	116	112	124
D7-N-MeFOSE (surr.)	1	%	103	105	113	105
D9-N-EtFOSE (surr.)	1	%	108	106	113	116
D5-N-EtFOSAA (surr.)	1	%	107	102	106	INT
D3-N-MeFOSAA (surr.)	1	%	114	110	104	INT
Perfluoroalkyl sulfonic acids (PFASs)						
Perfluorobutanesulfonic acid (PFBS) ^{N11}	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS) ^{N15}	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS) ^{N15}	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS) ^{N15}	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS) ^{N11}	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS) ^{N15}	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS) ^{N11}	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS) ^{N15}	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	131	120	124	132
18O2-PFHxS (surr.)	1	%	123	127	129	137
13C8-PFOS (surr.)	1	%	116	117	124	128
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) ^{N11}	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA) ^{N11}	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) ^{N11}	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) ^{N11}	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	140	116	121	110
13C2-6:2 FTSA (surr.)	1	%	139	112	115	133
13C2-8:2 FTSA (surr.)	1	%	128	126	132	169
13C2-10:2 FTSA (surr.)	1	%	101	99	107	INT
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID			TRIP SPIKE	TRIP BLANK
Sample Matrix			Trip Spike (liquid)	Trip Blank (liquid)
Eurofins Sample No.			S25-Ap0069223	S25-Ap0069224
Date Sampled			Apr 28, 2025	Apr 28, 2025
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons				
TRH C6-C9	0.02	mg/L	-	< 0.02
TRH C6-C10	0.02	mg/L	-	< 0.02
TRH C6-C10 less BTEX (F1) ^{N04}	0.02	mg/L	-	< 0.02
TRH C6-C10	1	%	79	-
Total Recoverable Hydrocarbons				
Naphthalene	1	%	110	-
TRH C6-C9	1	%	78	-
BTEX				
Benzene	1	%	120	-
Ethylbenzene	1	%	120	-
m&p-Xylenes	1	%	110	-
o-Xylene	1	%	110	-
Toluene	1	%	110	-
Xylenes - Total	1	%	110	-
4-Bromofluorobenzene (surr.)	1	%	74	-
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	%	-	78
BTEX and Naphthalene				
Naphthalene ^{N02}	0.01	mg/L	-	< 0.01

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

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	Sydney	May 01, 2025	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	May 01, 2025	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons	Sydney	May 01, 2025	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	May 01, 2025	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	May 01, 2025	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Sydney	May 01, 2025	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Metals M8 filtered	Sydney	May 01, 2025	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Dissolved Gases	Melbourne	May 01, 2025	14 Days
- Method: in-house method LTM-ORG-2070 by Headspace GC-FID			
Organochlorine Pesticides	Sydney	May 07, 2025	7 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Sydney	May 07, 2025	7 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Polychlorinated Biphenyls	Sydney	May 01, 2025	7 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Conductivity (at 25 °C)	Sydney	May 01, 2025	28 Days
- Method: LTM-INO-4030 Conductivity			
pH (at 25 °C)	Sydney	May 01, 2025	6 Hours
- Method: LTM-GEN-7090 pH in water by ISE			
Redox Potential mV (relative to Ag/AgCl)	Melbourne	May 05, 2025	5 Days
- Method: APHA 2580B Redox Potential			
Heavy Metals (filtered)	Sydney	May 01, 2025	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Volatile Organics	Sydney	May 01, 2025	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Semivolatile Organics	Sydney	May 01, 2025	7 Day
- Method: LTM-ORG-2190 SVOC in Water & Soil by GC-MS			
Phenols (Halogenated)	Sydney	May 01, 2025	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (non-Halogenated)	Sydney	May 01, 2025	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Eurofins Suite B19D: Total N, TKN, NOx, NO2, NO3, NH3, Total P			
Ammonia (as N)	Sydney	May 01, 2025	28 Days
- Method: LTM-INO-4200 Ammonia by Discrete Analyser			
Nitrate & Nitrite (as N)	Melbourne	May 01, 2025	28 Days
- Method: LTM-INO-4450 Nitrogens by Discrete Analyser			
Nitrate (as N)	Melbourne	May 01, 2025	28 Days
- Method: LTM-INO-4450 Nitrogens by Discrete Analyser			
Nitrite (as N)	Melbourne	May 01, 2025	2 Days
- Method: LTM-INO-4450 Nitrogens by Discrete Analyser			
Organic Nitrogen (as N)*	Melbourne	Apr 29, 2025	7 Days
- Method: APHA 4500 Organic Nitrogen (N)			
Phosphate total (as P)	Sydney	May 01, 2025	28 Days
- Method: E052 Total Phosphate (as P)			

Description	Testing Site	Extracted	Holding Time
Total Kjeldahl Nitrogen (as N) - Method: APHA 4500-Norg B,D Total Kjeldahl Nitrogen by FIA	Melbourne	May 01, 2025	28 Days
Eurofins Suite B11E: Cl/SO ₄ /Alkalinity			
Chloride - Method: LTM-INO-4270 Anions by Ion Chromatography	Sydney	May 01, 2025	28 Days
Sulphate (as SO ₄) - Method: In-house method LTM-INO-4270 Sulphate by Ion Chromatograph	Sydney	May 01, 2025	28 Days
Alkalinity (speciated) - Method: LTM-INO-4250 Alkalinity by Electrometric Titration	Sydney	May 01, 2025	14 Days
Total Dissolved Solids Dried at 180 °C ± 2 °C - Method: LTM-INO-4170 Total Dissolved Solids in Water	Sydney	May 01, 2025	7 Days
Eurofins Suite B11D: Na/K/Ca/Mg and Hardness			
Hardness mg equivalent CaCO ₃ /L - Method: LTM-MET-3040 Hardness by Calculation	Sydney	May 01, 2025	28 Days
Alkali Metals - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	May 01, 2025	180 Days
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs) - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Sydney	May 01, 2025	28 Days
Perfluoroalkyl sulfonamido substances - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Sydney	May 01, 2025	28 Days
Perfluoroalkyl sulfonic acids (PFSAs) - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Sydney	May 01, 2025	28 Days
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs) - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Sydney	May 01, 2025	28 Days

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road Dandenong South VIC 3175 +61 3 8564 5000 NATA# 1261 Site# 1254	19/8 Lewalan Street Grovedale VIC 3216 +61 3 8564 5000 NATA# 1261 Site# 25403	179 Magowar Road Girraween NSW 2145 +61 2 9900 8400 NATA# 1261 Site# 18217	Unit 1,2 Dacre Street Mitchell ACT 2911 +61 2 6113 8091 NATA# 1261 Site# 25466	1/21 Smallwood Place Murarrie QLD 4172 +61 7 3902 4600 NATA# 1261 Site# 20794 & 2780	1/2 Frost Drive Mayfield West NSW 2304 +61 2 4968 8448 NATA# 1261 Site# 25079

Perth
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Company Name: Geo-Logix P/L
Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: WOONGARRAH
Project ID: 2301027C

Order No.: P06770
Report #: 1213511
Phone: 02 9979 1722
Fax: 02 9979 1222

Received: Apr 29, 2025 1:41 PM
Due: May 6, 2025
Priority: 5 Day
Contact Name: Joe Unwin

Eurofins Analytical Services Manager : Bonnie Pu

Sample Detail						Total Dissolved Solids Dried at 180 °C ± 2 °C																											
						BTEXN and Volatile TRH																											
Melbourne Laboratory - NATA # 1261 Site # 1254						Per- and Polyfluoralkyl Substances (PFASs)																											
						Eurofins Suite B11E: Cl/SO4/Alkalinity																											
Sydney Laboratory - NATA # 1261 Site # 18217						Eurofins Suite B19D: Total N, TKN, NOx, NO2, NO3, NH3, Total P																											
						Eurofins Suite B11D: Na/K/Ca/Mg and Hardness																											
External Laboratory						Eurofins Suite SVV: SVO/CNOC																											
						BTEXN and Volatile TRH																											
						Eurofins Suite B8 (filtered metals)																											
						Total Recoverable Hydrocarbons																											
						Volatile Organics																											
						Phenols (Speciated)																											
						Eurofins Micro Suite 3 (E.coli and Total Coliforms)																											
						Metals M8 filtered																											
						Polychlorinated Biphenyls																											
						Organophosphorus Pesticides																											
						Organochlorine Pesticides																											
						Polycyclic Aromatic Hydrocarbons																											
						Silver (filtered)																											
						Selenium (filtered)																											
						Redox Potential mV (relative to Ag/AgCl)																											
						pH (at 25 °C)																											
						Methane																											
						Manganese (filtered)																											
						Lithium (filtered)																											
						Iron (filtered)																											
						Conductivity (at 25 °C)																											
						Boron (filtered)																											
						Barium (filtered)																											
						Antimony (filtered)																											
						Aluminium (filtered)																											

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
- Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
- Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
- For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
- Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
- SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to the '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 before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	mg/L: milligrams per litre	ppm: parts per million
µg/L: micrograms per litre	ppb: parts per billion	%: Percentage
org/100 mL: Organisms per 100 millilitres	NTU: Nephelometric Turbidity Units	MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony Forming Unit	Colour: Pt-Co Units (CU)	

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - 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.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (<i>bis</i> -tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

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%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

- Where a result is reported as 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.
- 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 are not data from your samples.
- 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.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
- For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
- 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							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g,h,i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a,h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1,2,3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	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	< 0.02			0.02	Pass	
Chlorpyrifos	mg/L	< 0.002			0.002	Pass	
Chlorpyrifos-methyl	mg/L	< 0.002			0.002	Pass	
Coumaphos	mg/L	< 0.02			0.02	Pass	
Demeton-S	mg/L	< 0.002			0.002	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	< 0.02			0.02	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	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Tokuthion	mg/L	< 0.002			0.002	Pass	
Trichloronate	mg/L	< 0.002			0.002	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/L	< 0.005			0.005	Pass	
Aroclor-1221	mg/L	< 0.005			0.005	Pass	
Aroclor-1232	mg/L	< 0.005			0.005	Pass	
Aroclor-1242	mg/L	< 0.005			0.005	Pass	
Aroclor-1248	mg/L	< 0.005			0.005	Pass	
Aroclor-1254	mg/L	< 0.005			0.005	Pass	
Aroclor-1260	mg/L	< 0.005			0.005	Pass	
Total PCB*	mg/L	< 0.005			0.005	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-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	
2-Methylphenol (o-Cresol)	mg/L	< 0.003			0.003	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							
Semivolatile Organics							
1-Chloronaphthalene	mg/L	< 0.005			0.005	Pass	
1-Naphthylamine	mg/L	< 0.005			0.005	Pass	
1,2-Dichlorobenzene	mg/L	< 0.005			0.005	Pass	
1,2,3-Trichlorobenzene	mg/L	< 0.005			0.005	Pass	
1,2,3,4-Tetrachlorobenzene	mg/L	< 0.005			0.005	Pass	
1,2,3,5-Tetrachlorobenzene	mg/L	< 0.005			0.005	Pass	
1,2,4-Trichlorobenzene	mg/L	< 0.005			0.005	Pass	
1,2,4,5-Tetrachlorobenzene	mg/L	< 0.005			0.005	Pass	
1,3-Dichlorobenzene	mg/L	< 0.005			0.005	Pass	
1,3,5-Trichlorobenzene	mg/L	< 0.005			0.005	Pass	
1,4-Dichlorobenzene	mg/L	< 0.005			0.005	Pass	
2-Chloronaphthalene	mg/L	< 0.005			0.005	Pass	
2-Methylnaphthalene	mg/L	< 0.005			0.005	Pass	
2-Naphthylamine	mg/L	< 0.005			0.005	Pass	
2-Nitroaniline	mg/L	< 0.005			0.005	Pass	
2-Picoline	mg/L	< 0.005			0.005	Pass	
2,3,4,6-Tetrachlorophenol	mg/L	< 0.01			0.01	Pass	
2,4-Dinitrotoluene	mg/L	< 0.005			0.005	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2,6-Dinitrotoluene	mg/L	< 0.005			0.005	Pass	
3-Methylcholanthrene	mg/L	< 0.005			0.005	Pass	
3,3'-Dichlorobenzidine	mg/L	< 0.005			0.005	Pass	
4-Aminobiphenyl	mg/L	< 0.005			0.005	Pass	
4,4'-DDD	mg/L	< 0.005			0.005	Pass	
4,4'-DDE	mg/L	< 0.005			0.005	Pass	
4,4'-DDT	mg/L	< 0.005			0.005	Pass	
7,12-Dimethylbenz(a)anthracene	mg/L	< 0.005			0.005	Pass	
a-HCH	mg/L	< 0.005			0.005	Pass	
Acetophenone	mg/L	< 0.005			0.005	Pass	
Aldrin	mg/L	< 0.005			0.005	Pass	
Aniline	mg/L	< 0.005			0.005	Pass	
b-HCH	mg/L	< 0.005			0.005	Pass	
Benzyl chloride	mg/L	< 0.005			0.005	Pass	
Bis(2-ethylhexyl)phthalate	mg/L	< 0.005			0.005	Pass	
Butyl benzyl phthalate	mg/L	< 0.005			0.005	Pass	
d-HCH	mg/L	< 0.005			0.005	Pass	
Di-n-butyl phthalate	mg/L	< 0.005			0.005	Pass	
Di-n-octyl phthalate	mg/L	< 0.005			0.005	Pass	
Dibenz(a,j)acridine	mg/L	< 0.005			0.005	Pass	
Dibenzofuran	mg/L	< 0.005			0.005	Pass	
Dieldrin	mg/L	< 0.005			0.005	Pass	
Diethyl phthalate	mg/L	< 0.005			0.005	Pass	
Dimethyl phthalate	mg/L	< 0.005			0.005	Pass	
Dimethylaminoazobenzene	mg/L	< 0.005			0.005	Pass	
Diphenylamine	mg/L	< 0.005			0.005	Pass	
Endosulfan I	mg/L	< 0.005			0.005	Pass	
Endosulfan II	mg/L	< 0.005			0.005	Pass	
Endosulfan sulphate	mg/L	< 0.005			0.005	Pass	
Endrin	mg/L	< 0.005			0.005	Pass	
Endrin aldehyde	mg/L	< 0.005			0.005	Pass	
Endrin ketone	mg/L	< 0.005			0.005	Pass	
g-HCH (Lindane)	mg/L	< 0.005			0.005	Pass	
Heptachlor	mg/L	< 0.005			0.005	Pass	
Heptachlor epoxide	mg/L	< 0.005			0.005	Pass	
Hexachlorobenzene	mg/L	< 0.005			0.005	Pass	
Hexachlorobutadiene	mg/L	< 0.005			0.005	Pass	
Hexachlorocyclopentadiene	mg/L	< 0.005			0.005	Pass	
Hexachloroethane	mg/L	< 0.005			0.005	Pass	
Methoxychlor	mg/L	< 0.005			0.005	Pass	
N-Nitrosodibutylamine	mg/L	< 0.005			0.005	Pass	
N-Nitrosodipropylamine	mg/L	< 0.005			0.005	Pass	
N-Nitrosopiperidine	mg/L	< 0.005			0.005	Pass	
Nitrobenzene	mg/L	< 0.005			0.005	Pass	
Pentachlorobenzene	mg/L	< 0.005			0.005	Pass	
Pentachloronitrobenzene	mg/L	< 0.005			0.005	Pass	
Pronamide	mg/L	< 0.005			0.005	Pass	
Trifluralin	mg/L	< 0.005			0.005	Pass	
Method Blank							
Haloethers							
4-Bromophenyl phenyl ether	mg/L	< 0.005			0.005	Pass	
4-Chlorophenyl phenyl ether	mg/L	< 0.005			0.005	Pass	
Bis(2-chloroethoxy)methane	mg/L	< 0.005			0.005	Pass	
Bis(2-chloroisopropyl)ether	mg/L	< 0.005			0.005	Pass	
Method Blank							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Nitrate & Nitrite (as N)	mg/L	< 0.05			0.05	Pass	
Nitrite (as N)	mg/L	< 0.02			0.02	Pass	
Phosphate total (as P)	mg/L	< 0.01			0.01	Pass	
Total Dissolved Solids Dried at 180 °C ± 2 °C	mg/L	< 10			10	Pass	
Total Kjeldahl Nitrogen (as N)	mg/L	< 0.2			0.2	Pass	
Method Blank							
Alkalinity (speciated)							
Bicarbonate Alkalinity (as CaCO ₃)	mg/L	< 20			20	Pass	
Carbonate Alkalinity (as CaCO ₃)	mg/L	< 20			20	Pass	
Hydroxide Alkalinity (as CaCO ₃)	mg/L	< 20			20	Pass	
Total Alkalinity (as CaCO ₃)	mg/L	< 20			20	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							
Aluminium (filtered)	mg/L	< 0.05			0.05	Pass	
Antimony (filtered)	mg/L	< 0.005			0.005	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Barium (filtered)	mg/L	< 0.02			0.02	Pass	
Boron (filtered)	mg/L	< 0.05			0.05	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	
Iron (filtered)	mg/L	< 0.05			0.05	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Lithium (filtered)	mg/L	< 0.01			0.01	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	
Selenium (filtered)	mg/L	< 0.001			0.001	Pass	
Silver (filtered)	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
Method Blank							
Dissolved Gases							
Methane	mg/L	< 0.05			0.05	Pass	
Method Blank							
Volatile Organics							
1.1-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.1-Dichloroethene	mg/L	< 0.001			0.001	Pass	
1.1.1-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.1.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dibromoethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.2-Dichloroethane	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
1.2-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.3-Trichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.4-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.3.5-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.4-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
2-Butanone (MEK)	mg/L	< 0.005			0.005	Pass	
2-Propanone (Acetone)	mg/L	< 0.005			0.005	Pass	
4-Chlorotoluene	mg/L	< 0.001			0.001	Pass	
4-Methyl-2-pentanone (MIBK)	mg/L	< 0.005			0.005	Pass	
Allyl chloride	mg/L	< 0.001			0.001	Pass	
Benzene	mg/L	< 0.001			0.001	Pass	
Bromobenzene	mg/L	< 0.001			0.001	Pass	
Bromochloromethane	mg/L	< 0.001			0.001	Pass	
Bromodichloromethane	mg/L	< 0.001			0.001	Pass	
Bromoform	mg/L	< 0.001			0.001	Pass	
Bromomethane	mg/L	< 0.005			0.005	Pass	
Carbon disulfide	mg/L	< 0.001			0.001	Pass	
Carbon Tetrachloride	mg/L	< 0.001			0.001	Pass	
Chlorobenzene	mg/L	< 0.001			0.001	Pass	
Chloroethane	mg/L	< 0.005			0.005	Pass	
Chloroform	mg/L	< 0.005			0.005	Pass	
Chloromethane	mg/L	< 0.005			0.005	Pass	
cis-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
cis-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Dibromochloromethane	mg/L	< 0.001			0.001	Pass	
Dibromomethane	mg/L	< 0.001			0.001	Pass	
Dichlorodifluoromethane	mg/L	< 0.005			0.005	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
Iodomethane	mg/L	< 0.001			0.001	Pass	
Isopropyl benzene (Cumene)	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
Methylene Chloride	mg/L	< 0.005			0.005	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Styrene	mg/L	< 0.001			0.001	Pass	
Tetrachloroethene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
trans-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
trans-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Trichloroethene	mg/L	< 0.001			0.001	Pass	
Trichlorofluoromethane	mg/L	< 0.005			0.005	Pass	
Vinyl chloride	mg/L	< 0.005			0.005	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	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/L	< 0.002			0.002	Pass	
4.4'-DDD	mg/L	< 0.0002			0.0002	Pass	
4.4'-DDE	mg/L	< 0.0002			0.0002	Pass	
4.4'-DDT	mg/L	< 0.0002			0.0002	Pass	
a-HCH	mg/L	< 0.0002			0.0002	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Aldrin	mg/L	< 0.0002			0.0002	Pass	
b-HCH	mg/L	< 0.0002			0.0002	Pass	
d-HCH	mg/L	< 0.0002			0.0002	Pass	
Dieldrin	mg/L	< 0.0002			0.0002	Pass	
Endosulfan I	mg/L	< 0.0002			0.0002	Pass	
Endosulfan II	mg/L	< 0.0002			0.0002	Pass	
Endosulfan sulphate	mg/L	< 0.0002			0.0002	Pass	
Endrin	mg/L	< 0.0002			0.0002	Pass	
Endrin aldehyde	mg/L	< 0.0002			0.0002	Pass	
Endrin ketone	mg/L	< 0.0002			0.0002	Pass	
g-HCH (Lindane)	mg/L	< 0.0002			0.0002	Pass	
Heptachlor	mg/L	< 0.0002			0.0002	Pass	
Heptachlor epoxide	mg/L	< 0.0002			0.0002	Pass	
Hexachlorobenzene	mg/L	< 0.0002			0.0002	Pass	
Methoxychlor	mg/L	< 0.0002			0.0002	Pass	
Toxaphene	mg/L	< 0.005			0.005	Pass	
Method Blank							
Conductivity (at 25 °C)	uS/cm	< 10			10	Pass	
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
Method Blank							
Volatile Organics							
1.1-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.1-Dichloroethene	mg/L	< 0.001			0.001	Pass	
1.1.1-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.1.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dibromoethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.2-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.3-Trichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.4-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.3.5-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.4-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
2-Butanone (MEK)	mg/L	< 0.005			0.005	Pass	
2-Propanone (Acetone)	mg/L	< 0.005			0.005	Pass	
4-Chlorotoluene	mg/L	< 0.001			0.001	Pass	
4-Methyl-2-pentanone (MIBK)	mg/L	< 0.005			0.005	Pass	
Allyl chloride	mg/L	< 0.001			0.001	Pass	
Benzene	mg/L	< 0.001			0.001	Pass	
Bromobenzene	mg/L	< 0.001			0.001	Pass	
Bromochloromethane	mg/L	< 0.001			0.001	Pass	
Bromodichloromethane	mg/L	< 0.001			0.001	Pass	
Bromoform	mg/L	< 0.001			0.001	Pass	
Bromomethane	mg/L	< 0.005			0.005	Pass	
Carbon disulfide	mg/L	< 0.001			0.001	Pass	
Carbon Tetrachloride	mg/L	< 0.001			0.001	Pass	
Chlorobenzene	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chloroethane	mg/L	< 0.005			0.005	Pass	
Chloroform	mg/L	< 0.005			0.005	Pass	
Chloromethane	mg/L	< 0.005			0.005	Pass	
cis-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
cis-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Dibromochloromethane	mg/L	< 0.001			0.001	Pass	
Dibromomethane	mg/L	< 0.001			0.001	Pass	
Dichlorodifluoromethane	mg/L	< 0.005			0.005	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
Iodomethane	mg/L	< 0.001			0.001	Pass	
Isopropyl benzene (Cumene)	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
Methylene Chloride	mg/L	< 0.005			0.005	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Styrene	mg/L	< 0.001			0.001	Pass	
Tetrachloroethene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
trans-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
trans-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Trichloroethene	mg/L	< 0.001			0.001	Pass	
Trichlorofluoromethane	mg/L	< 0.005			0.005	Pass	
Vinyl chloride	mg/L	< 0.005			0.005	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	
Method Blank							
Total Recoverable Hydrocarbons							
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	
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							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSA's)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSA's)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	108			70-130	Pass	
TRH C6-C10	%	107			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	86			70-130	Pass	
Acenaphthylene	%	87			70-130	Pass	
Anthracene	%	84			70-130	Pass	
Benz(a)anthracene	%	93			70-130	Pass	
Benzo(a)pyrene	%	93			70-130	Pass	
Benzo(b&j)fluoranthene	%	94			70-130	Pass	
Benzo(g,h,i)perylene	%	76			70-130	Pass	
Benzo(k)fluoranthene	%	102			70-130	Pass	
Chrysene	%	99			70-130	Pass	
Dibenz(a,h)anthracene	%	95			70-130	Pass	
Fluoranthene	%	103			70-130	Pass	
Fluorene	%	84			70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	94			70-130	Pass	
Phenanthrene	%	79			70-130	Pass	
Pyrene	%	103			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	81			70-130	Pass	
Dimethoate	%	87			70-130	Pass	
Ethion	%	107			70-130	Pass	
Fenitrothion	%	116			70-130	Pass	
Methyl parathion	%	120			70-130	Pass	
Mevinphos	%	97			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1016	%	83			70-130	Pass	
Aroclor-1260	%	92			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	62			25-140	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2,4-Dichlorophenol	%	69			25-140	Pass	
2,4,5-Trichlorophenol	%	68			25-140	Pass	
2,4,6-Trichlorophenol	%	64			25-140	Pass	
2,6-Dichlorophenol	%	68			25-140	Pass	
4-Chloro-3-methylphenol	%	67			25-140	Pass	
Pentachlorophenol	%	83			25-140	Pass	
Tetrachlorophenols - Total	%	80			25-140	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Cyclohexyl-4,6-dinitrophenol	%	110			25-140	Pass	
2-Methyl-4,6-dinitrophenol	%	111			25-140	Pass	
2-Nitrophenol	%	92			25-140	Pass	
2,4-Dimethylphenol	%	64			25-140	Pass	
2,4-Dinitrophenol	%	102			25-140	Pass	
2-Methylphenol (o-Cresol)	%	66			25-140	Pass	
3&4-Methylphenol (m&p-Cresol)	%	68			25-140	Pass	
4-Nitrophenol	%	63			25-140	Pass	
Dinoseb	%	123			25-140	Pass	
Phenol	%	46			25-140	Pass	
LCS - % Recovery							
Semivolatile Organics							
1,2,4-Trichlorobenzene	%	85			70-130	Pass	
1,4-Dichlorobenzene	%	82			70-130	Pass	
2,4-Dinitrotoluene	%	119			70-130	Pass	
4,4'-DDD	%	85			70-130	Pass	
4,4'-DDE	%	86			70-130	Pass	
4,4'-DDT	%	110			70-130	Pass	
a-HCH	%	75			70-130	Pass	
Aldrin	%	83			70-130	Pass	
b-HCH	%	81			70-130	Pass	
d-HCH	%	84			70-130	Pass	
Dieldrin	%	89			70-130	Pass	
Endosulfan I	%	90			70-130	Pass	
Endosulfan II	%	84			70-130	Pass	
Endosulfan sulphate	%	95			70-130	Pass	
Endrin	%	111			70-130	Pass	
Endrin aldehyde	%	93			70-130	Pass	
Endrin ketone	%	80			70-130	Pass	
g-HCH (Lindane)	%	88			70-130	Pass	
Heptachlor	%	87			70-130	Pass	
Heptachlor epoxide	%	96			70-130	Pass	
Methoxychlor	%	107			70-130	Pass	
N-Nitrosodipropylamine	%	79			70-130	Pass	
LCS - % Recovery							
Nitrate & Nitrite (as N)	%	86			70-130	Pass	
Nitrite (as N)	%	94			70-130	Pass	
Phosphate total (as P)	%	99			70-130	Pass	
Total Dissolved Solids Dried at 180 °C ± 2 °C	%	86			70-130	Pass	
Total Kjeldahl Nitrogen (as N)	%	102			70-130	Pass	
LCS - % Recovery							
Alkalinity (speciated)							
Total Alkalinity (as CaCO3)	%	114			70-130	Pass	
LCS - % Recovery							
Alkali Metals							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Calcium	%	94			80-120	Pass	
Magnesium	%	93			80-120	Pass	
Potassium	%	95			80-120	Pass	
Sodium	%	94			80-120	Pass	
LCS - % Recovery							
Heavy Metals							
Aluminium (filtered)	%	102			80-120	Pass	
Antimony (filtered)	%	103			80-120	Pass	
Arsenic (filtered)	%	92			80-120	Pass	
Barium (filtered)	%	102			80-120	Pass	
Boron (filtered)	%	101			80-120	Pass	
Cadmium (filtered)	%	96			80-120	Pass	
Chromium (filtered)	%	92			80-120	Pass	
Copper (filtered)	%	92			80-120	Pass	
Iron (filtered)	%	103			80-120	Pass	
Lead (filtered)	%	89			80-120	Pass	
Lithium (filtered)	%	99			80-120	Pass	
Manganese (filtered)	%	103			80-120	Pass	
Mercury (filtered)	%	96			80-120	Pass	
Nickel (filtered)	%	92			80-120	Pass	
Selenium (filtered)	%	101			80-120	Pass	
Silver (filtered)	%	89			80-120	Pass	
Zinc (filtered)	%	90			80-120	Pass	
LCS - % Recovery							
Dissolved Gases							
Methane	%	115			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	104			70-130	Pass	
1.1.1-Trichloroethane	%	91			70-130	Pass	
1.2-Dichlorobenzene	%	106			70-130	Pass	
1.2-Dichloroethane	%	102			70-130	Pass	
Benzene	%	106			70-130	Pass	
Ethylbenzene	%	104			70-130	Pass	
m&p-Xylenes	%	105			70-130	Pass	
o-Xylene	%	110			70-130	Pass	
Toluene	%	98			70-130	Pass	
Trichloroethene	%	105			70-130	Pass	
Xylenes - Total*	%	107			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	77			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	112			70-130	Pass	
4.4'-DDD	%	106			70-130	Pass	
4.4'-DDE	%	108			70-130	Pass	
4.4'-DDT	%	115			70-130	Pass	
a-HCH	%	94			70-130	Pass	
Aldrin	%	89			70-130	Pass	
b-HCH	%	101			70-130	Pass	
d-HCH	%	106			70-130	Pass	
Dieldrin	%	111			70-130	Pass	
Endosulfan I	%	108			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan II	%	108			70-130	Pass	
Endosulfan sulphate	%	84			70-130	Pass	
Endrin	%	106			70-130	Pass	
Endrin aldehyde	%	81			70-130	Pass	
Endrin ketone	%	95			70-130	Pass	
g-HCH (Lindane)	%	97			70-130	Pass	
Heptachlor	%	110			70-130	Pass	
Heptachlor epoxide	%	91			70-130	Pass	
Hexachlorobenzene	%	88			70-130	Pass	
Methoxychlor	%	115			70-130	Pass	
LCS - % Recovery							
Conductivity (at 25 °C)	%	91			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	108			70-130	Pass	
1.1.1-Trichloroethane	%	95			70-130	Pass	
1.2-Dichlorobenzene	%	103			70-130	Pass	
1.2-Dichloroethane	%	102			70-130	Pass	
Benzene	%	105			70-130	Pass	
Ethylbenzene	%	101			70-130	Pass	
m&p-Xylenes	%	102			70-130	Pass	
o-Xylene	%	108			70-130	Pass	
Toluene	%	98			70-130	Pass	
Trichloroethene	%	107			70-130	Pass	
Xylenes - Total*	%	104			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	86			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Naphthalene	%	75			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C10-C14	%	109			70-130	Pass	
TRH >C10-C16	%	100			70-130	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	91			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	90			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	102			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	94			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	85			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	96			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	128			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	109			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	106			50-150	Pass	
Perfluorotridecanoic acid (PFTTrDA)	%	106			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	94			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	87			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	74			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	108			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	103			50-150	Pass	

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)				%	106			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)				%	94			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)				%	89			50-150	Pass	
LCS - % Recovery										
Perfluoroalkyl sulfonic acids (PFSA's)										
Perfluorobutanesulfonic acid (PFBS)				%	92			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)				%	89			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)				%	83			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)				%	82			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)				%	91			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)				%	85			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)				%	83			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)				%	93			50-150	Pass	
LCS - % Recovery										
n:2 Fluorotelomer sulfonic acids (n:2 FTSA's)										
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)				%	100			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)				%	91			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)				%	90			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)				%	91			50-150	Pass	
Test		Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery										
Total Recoverable Hydrocarbons					Result 1					
TRH C10-C14	N25-Ap0067250	NCP	%	91				70-130	Pass	
TRH >C10-C16	N25-Ap0067250	NCP	%	93				70-130	Pass	
Spike - % Recovery										
Dissolved Gases					Result 1					
Methane	M25-Ap0068226	NCP	%	121				70-130	Pass	
Spike - % Recovery										
Organophosphorus Pesticides					Result 1					
Ethion	S25-Ap0064415	NCP	%	80				70-130	Pass	
Fenitrothion	S25-Ap0064415	NCP	%	103				70-130	Pass	
Methyl parathion	S25-Ap0064415	NCP	%	110				70-130	Pass	
Spike - % Recovery										
					Result 1					
Ammonia (as N)	S25-Ap0070658	NCP	%	94				70-130	Pass	
Chloride	S25-Ap0067345	NCP	%	91				70-130	Pass	
Nitrite (as N)	S25-Ap0070889	NCP	%	88				70-130	Pass	
Phosphate total (as P)	N25-Ap0065299	NCP	%	74				70-130	Pass	
Sulphate (as SO4)	S25-Ap0067345	NCP	%	99				70-130	Pass	
Total Kjeldahl Nitrogen (as N)	S25-Ap0067145	NCP	%	121				70-130	Pass	
Spike - % Recovery										
Heavy Metals					Result 1					
Manganese (filtered)	S25-Ap0066896	NCP	%	113				75-125	Pass	
Spike - % Recovery										
Perfluoroalkyl carboxylic acids (PFCAs)					Result 1					
Perfluorobutanoic acid (PFBA)	S25-My0006555	NCP	%	85				50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S25-My0006555	NCP	%	99				50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S25-My0006555	NCP	%	97				50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	S25-My0006555	NCP	%	98				50-150	Pass	
Perfluorooctanoic acid (PFOA)	S25-My0006555	NCP	%	91				50-150	Pass	
Perfluorononanoic acid (PFNA)	S25-My0006555	NCP	%	88				50-150	Pass	
Perfluorodecanoic acid (PFDA)	S25-My0006555	NCP	%	102				50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluoroundecanoic acid (PFUnDA)	S25-My0006555	NCP	%	100			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S25-My0006555	NCP	%	103			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	S25-My0006555	NCP	%	110			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S25-My0006555	NCP	%	98			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	S25-My0006555	NCP	%	85			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S25-My0006555	NCP	%	73			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S25-My0006555	NCP	%	104			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S25-My0006555	NCP	%	94			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S25-My0006555	NCP	%	114			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S25-My0006555	NCP	%	87			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S25-My0006555	NCP	%	90			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSA's)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	S25-My0006555	NCP	%	101			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	S25-My0006555	NCP	%	80			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S25-My0006555	NCP	%	81			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S25-My0006555	NCP	%	88			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S25-My0006555	NCP	%	86			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S25-My0006555	NCP	%	90			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S25-My0006555	NCP	%	80			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	S25-My0006555	NCP	%	89			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSA's)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S25-My0006555	NCP	%	83			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S25-My0006555	NCP	%	81			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S25-My0006555	NCP	%	103			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S25-My0006555	NCP	%	88			50-150	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S25-Ap0064415	NCP	%	79			70-130	Pass	
4,4'-DDD	S25-Ap0064415	NCP	%	72			70-130	Pass	
Dieldrin	S25-Ap0064415	NCP	%	75			70-130	Pass	
Heptachlor	S25-Ap0064415	NCP	%	85			70-130	Pass	
Heptachlor epoxide	S25-Ap0064415	NCP	%	80			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Methoxychlor	S25-Ap0064415	NCP	%	91			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Aluminium (filtered)	S25-Ap0069220	CP	%	113			75-125	Pass	
Antimony (filtered)	S25-Ap0069220	CP	%	117			75-125	Pass	
Arsenic (filtered)	S25-Ap0069220	CP	%	107			75-125	Pass	
Barium (filtered)	S25-Ap0069220	CP	%	115			75-125	Pass	
Boron (filtered)	S25-Ap0069220	CP	%	107			75-125	Pass	
Cadmium (filtered)	S25-Ap0069220	CP	%	111			75-125	Pass	
Chromium (filtered)	S25-Ap0069220	CP	%	108			75-125	Pass	
Copper (filtered)	S25-Ap0069220	CP	%	108			75-125	Pass	
Iron (filtered)	S25-Ap0069220	CP	%	104			75-125	Pass	
Lead (filtered)	S25-Ap0069220	CP	%	107			75-125	Pass	
Lithium (filtered)	S25-Ap0069220	CP	%	114			75-125	Pass	
Mercury (filtered)	S25-Ap0069220	CP	%	109			75-125	Pass	
Nickel (filtered)	S25-Ap0069220	CP	%	107			75-125	Pass	
Selenium (filtered)	S25-Ap0069220	CP	%	112			75-125	Pass	
Silver (filtered)	S25-Ap0069220	CP	%	96			75-125	Pass	
Zinc (filtered)	S25-Ap0069220	CP	%	111			75-125	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthylene	S25-My0001305	NCP	%	107			70-130	Pass	
Benz(a)anthracene	S25-My0001305	NCP	%	112			70-130	Pass	
Benzo(b&j)fluoranthene	S25-My0001305	NCP	%	125			70-130	Pass	
Dibenz(a,h)anthracene	S25-My0001305	NCP	%	123			70-130	Pass	
Fluoranthene	S25-My0001305	NCP	%	121			70-130	Pass	
Fluorene	S25-My0001305	NCP	%	124			70-130	Pass	
Indeno(1,2,3-cd)pyrene	S25-My0001305	NCP	%	124			70-130	Pass	
Naphthalene	S25-My0001305	NCP	%	92			70-130	Pass	
Phenanthrene	S25-My0001305	NCP	%	101			70-130	Pass	
Pyrene	S25-My0001305	NCP	%	117			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S25-Ap0069219	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	N25-Ap0071484	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	N25-Ap0071484	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	N25-Ap0071484	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C6-C10	S25-Ap0066900	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH >C10-C16	N25-Ap0071484	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	N25-Ap0071484	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	N25-Ap0071484	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Dissolved Gases				Result 1	Result 2	RPD			
Methane	M25-Ap0071081	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1,1-Dichloroethane	S25-Ap0066900	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1,1-Dichloroethene	S25-Ap0066900	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1,1,1-Trichloroethane	S25-Ap0066900	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1,1,1,2-Tetrachloroethane	S25-Ap0066900	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1,1,2-Trichloroethane	S25-Ap0066900	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1,1,2,2-Tetrachloroethane	S25-Ap0066900	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1,2-Dibromoethane	S25-Ap0066900	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Duplicate								
Volatile Organics				Result 1	Result 2	RPD		
1.2-Dichlorobenzene	S25-Ap0066900	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
1.2-Dichloroethane	S25-Ap0066900	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
1.2-Dichloropropane	S25-Ap0066900	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
1.2.3-Trichloropropane	S25-Ap0066900	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
1.2.4-Trimethylbenzene	S25-Ap0066900	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
1.3-Dichlorobenzene	S25-Ap0066900	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
1.3-Dichloropropane	S25-Ap0066900	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
1.3.5-Trimethylbenzene	S25-Ap0066900	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
1.4-Dichlorobenzene	S25-Ap0066900	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
2-Butanone (MEK)	S25-Ap0066900	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
2-Propanone (Acetone)	S25-Ap0066900	NCP	mg/L	0.013	0.012	4.0	30%	Pass
4-Chlorotoluene	S25-Ap0066900	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
4-Methyl-2-pentanone (MIBK)	S25-Ap0066900	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Allyl chloride	S25-Ap0066900	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzene	S25-Ap0066900	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Bromobenzene	S25-Ap0066900	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Bromochloromethane	S25-Ap0066900	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Bromodichloromethane	S25-Ap0066900	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Bromoform	S25-Ap0066900	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Bromomethane	S25-Ap0066900	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Carbon disulfide	S25-Ap0066900	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Carbon Tetrachloride	S25-Ap0066900	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Chlorobenzene	S25-Ap0066900	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Chloroethane	S25-Ap0066900	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Chloroform	S25-Ap0066900	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Chloromethane	S25-Ap0066900	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
cis-1.2-Dichloroethene	S25-Ap0066900	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
cis-1.3-Dichloropropene	S25-Ap0066900	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Dibromochloromethane	S25-Ap0066900	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Dibromomethane	S25-Ap0066900	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Dichlorodifluoromethane	S25-Ap0066900	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Ethylbenzene	S25-Ap0066900	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Iodomethane	S25-Ap0066900	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Isopropyl benzene (Cumene)	S25-Ap0066900	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
m&p-Xylenes	S25-Ap0066900	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Methylene Chloride	S25-Ap0066900	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
o-Xylene	S25-Ap0066900	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Styrene	S25-Ap0066900	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Tetrachloroethene	S25-Ap0066900	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Toluene	S25-Ap0066900	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
trans-1.2-Dichloroethene	S25-Ap0066900	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
trans-1.3-Dichloropropene	S25-Ap0066900	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Trichloroethene	S25-Ap0066900	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Trichlorofluoromethane	S25-Ap0066900	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Vinyl chloride	S25-Ap0066900	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Xylenes - Total*	S25-Ap0066900	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	S25-Ap0066900	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass

Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	S25-Ap0066424	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Acenaphthylene	S25-Ap0066424	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Anthracene	S25-Ap0066424	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benz(a)anthracene	S25-Ap0066424	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(a)pyrene	S25-Ap0066424	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(b&j)fluoranthene	S25-Ap0066424	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(g,h,i)perylene	S25-Ap0066424	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(k)fluoranthene	S25-Ap0066424	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Chrysene	S25-Ap0066424	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Dibenz(a,h)anthracene	S25-Ap0066424	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluoranthene	S25-Ap0066424	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluorene	S25-Ap0066424	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	S25-Ap0066424	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Naphthalene	S25-Ap0066424	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Phenanthrene	S25-Ap0066424	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Pyrene	S25-Ap0066424	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Duplicate								
Organophosphorus Pesticides				Result 1	Result 2	RPD		
Azinphos-methyl	S25-Ap0066424	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Bolstar	S25-Ap0066424	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Chlorfenvinphos	S25-Ap0066424	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Chlorpyrifos	S25-Ap0066424	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Chlorpyrifos-methyl	S25-Ap0066424	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Coumaphos	S25-Ap0066424	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Demeton-S	S25-Ap0066424	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Demeton-O	S25-Ap0066424	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Diazinon	S25-Ap0066424	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Dichlorvos	S25-Ap0066424	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Dimethoate	S25-Ap0066424	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Disulfoton	S25-Ap0066424	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
EPN	S25-Ap0066424	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Ethion	S25-Ap0066424	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Ethoprop	S25-Ap0066424	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Ethyl parathion	S25-Ap0066424	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Fenitrothion	S25-Ap0066424	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Fensulfthion	S25-Ap0066424	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Fenthion	S25-Ap0066424	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Malathion	S25-Ap0066424	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Merphos	S25-Ap0066424	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Methyl parathion	S25-Ap0066424	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Mevinphos	S25-Ap0066424	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Monocrotophos	S25-Ap0066424	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Naled	S25-Ap0066424	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Omethoate	S25-Ap0066424	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Phorate	S25-Ap0066424	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Pirimiphos-methyl	S25-Ap0066424	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Pyrazophos	S25-Ap0066424	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Ronnel	S25-Ap0066424	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Terbufos	S25-Ap0066424	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Tetrachlorvinphos	S25-Ap0066424	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Tokuthion	S25-Ap0066424	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Trichloronate	S25-Ap0066424	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass

Duplicate								
Polychlorinated Biphenyls				Result 1	Result 2	RPD		
Aroclor-1016	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Aroclor-1221	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Aroclor-1232	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Aroclor-1242	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Aroclor-1248	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Aroclor-1254	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Aroclor-1260	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Total PCB*	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Duplicate								
Phenols (Halogenated)				Result 1	Result 2	RPD		
2-Chlorophenol	S25-Ap0066424	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass
2,4-Dichlorophenol	S25-Ap0066424	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass
2,4,5-Trichlorophenol	S25-Ap0066424	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass
2,4,6-Trichlorophenol	S25-Ap0066424	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass
2,6-Dichlorophenol	S25-Ap0066424	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass
4-Chloro-3-methylphenol	S25-Ap0066424	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass
Pentachlorophenol	S25-Ap0066424	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass
Tetrachlorophenols - Total	S25-Ap0066424	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass
Duplicate								
Phenols (non-Halogenated)				Result 1	Result 2	RPD		
2-Cyclohexyl-4,6-dinitrophenol	S25-Ap0066424	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass
2-Methyl-4,6-dinitrophenol	S25-Ap0066424	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass
2-Nitrophenol	S25-Ap0066424	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass
2,4-Dimethylphenol	S25-Ap0066424	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass
2,4-Dinitrophenol	S25-Ap0066424	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass
2-Methylphenol (o-Cresol)	S25-Ap0066424	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass
3&4-Methylphenol (m&p-Cresol)	S25-Ap0066424	NCP	mg/L	< 0.006	< 0.006	<1	30%	Pass
4-Nitrophenol	S25-Ap0066424	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass
Dinoseb	S25-Ap0066424	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass
Phenol	S25-Ap0066424	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass
Duplicate								
Semivolatile Organics				Result 1	Result 2	RPD		
1-Chloronaphthalene	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
1-Naphthylamine	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
1,2-Dichlorobenzene	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
1,2,3-Trichlorobenzene	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
1,2,3,4-Tetrachlorobenzene	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
1,2,3,5-Tetrachlorobenzene	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
1,2,4-Trichlorobenzene	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
1,2,4,5-Tetrachlorobenzene	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
1,3-Dichlorobenzene	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
1,3,5-Trichlorobenzene	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
1,4-Dichlorobenzene	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
2-Chloronaphthalene	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
2-Methylnaphthalene	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
2-Naphthylamine	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
2-Nitroaniline	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
2-Picoline	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
2,3,4,6-Tetrachlorophenol	S25-Ap0066424	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass
2,4-Dinitrotoluene	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
2,6-Dinitrotoluene	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
3-Methylcholanthrene	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
3,3'-Dichlorobenzidine	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
4-Aminobiphenyl	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass

Duplicate								
Semivolatile Organics				Result 1	Result 2	RPD		
4,4'-DDD	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
4,4'-DDE	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
4,4'-DDT	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
7.12-Dimethylbenz(a)anthracene	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
a-HCH	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Acetophenone	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Aldrin	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Aniline	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
b-HCH	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Benzyl chloride	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Bis(2-ethylhexyl)phthalate	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Butyl benzyl phthalate	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
d-HCH	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Di-n-butyl phthalate	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Di-n-octyl phthalate	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Dibenz(a,j)acridine	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Dibenzofuran	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Dieldrin	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Diethyl phthalate	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Dimethyl phthalate	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Dimethylaminoazobenzene	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Diphenylamine	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Endosulfan I	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Endosulfan II	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Endosulfan sulphate	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Endrin	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Endrin aldehyde	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Endrin ketone	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
g-HCH (Lindane)	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Heptachlor	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Heptachlor epoxide	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Hexachlorobenzene	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Hexachlorobutadiene	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Hexachlorocyclopentadiene	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Hexachloroethane	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Methoxychlor	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
N-Nitrosodibutylamine	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
N-Nitrosodipropylamine	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
N-Nitrosopiperidine	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Nitrobenzene	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Pentachlorobenzene	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Pentachloronitrobenzene	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Pronamide	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Trifluralin	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Duplicate								
Haloethers				Result 1	Result 2	RPD		
4-Bromophenyl phenyl ether	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
4-Chlorophenyl phenyl ether	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Bis(2-chloroethoxy)methane	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Bis(2-chloroisopropyl)ether	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass

Duplicate								
				Result 1	Result 2	RPD		
Chloride	S25-Ap0066426	NCP	mg/L	640	580	11	30%	Pass
Conductivity (at 25 °C)	S25-Ap0066162	NCP	uS/cm	130	130	3.2	30%	Pass
Phosphate total (as P)	S25-Ap0069219	CP	mg/L	0.82	0.81	<1	30%	Pass
Redox Potential mV (relative to Ag/AgCl)	B25-Ap0072462	NCP	mV	260	260	1.4	30%	Pass
Sulphate (as SO ₄)	S25-Ap0066426	NCP	mg/L	240	220	10	30%	Pass
Total Dissolved Solids Dried at 180 °C ± 2 °C	S25-Ap0070081	NCP	mg/L	12000	14000	12	30%	Pass
Total Kjeldahl Nitrogen (as N)	S25-Ap0069219	CP	mg/L	< 0.2	< 0.2	<1	30%	Pass
Hardness mg equivalent CaCO ₃ /L	S25-Ap0069219	CP	mg/L	210	230	10	30%	Pass
Duplicate								
Alkalinity (speciated)				Result 1	Result 2	RPD		
Bicarbonate Alkalinity (as CaCO ₃)	W25-Ma0024550	NCP	mg/L	48	49	2.0	30%	Pass
Carbonate Alkalinity (as CaCO ₃)	W25-Ma0024550	NCP	mg/L	< 20	< 20	<1	30%	Pass
Hydroxide Alkalinity (as CaCO ₃)	W25-Ma0024550	NCP	mg/L	< 20	< 20	<1	30%	Pass
Total Alkalinity (as CaCO ₃)	W25-Ma0024550	NCP	mg/L	48	49	2.0	30%	Pass
Duplicate								
Alkali Metals				Result 1	Result 2	RPD		
Calcium	S25-Ap0069219	CP	mg/L	26	28	9.0	30%	Pass
Magnesium	S25-Ap0069219	CP	mg/L	35	38	10	30%	Pass
Potassium	S25-Ap0069219	CP	mg/L	19	21	8.0	30%	Pass
Sodium	S25-Ap0069219	CP	mg/L	150	150	1.0	30%	Pass
Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	S25-Ap0066424	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
4,4'-DDD	S25-Ap0066424	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
4,4'-DDE	S25-Ap0066424	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
4,4'-DDT	S25-Ap0066424	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
a-HCH	S25-Ap0066424	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Aldrin	S25-Ap0066424	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
b-HCH	S25-Ap0066424	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
d-HCH	S25-Ap0066424	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Dieldrin	S25-Ap0066424	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Endosulfan I	S25-Ap0066424	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Endosulfan II	S25-Ap0066424	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Endosulfan sulphate	S25-Ap0066424	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Endrin	S25-Ap0066424	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Endrin aldehyde	S25-Ap0066424	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Endrin ketone	S25-Ap0066424	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
g-HCH (Lindane)	S25-Ap0066424	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Heptachlor	S25-Ap0066424	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Heptachlor epoxide	S25-Ap0066424	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Hexachlorobenzene	S25-Ap0066424	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Methoxychlor	S25-Ap0066424	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Toxaphene	S25-Ap0066424	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Total Kjeldahl Nitrogen (as N)	S25-Ap0069220	CP	mg/L	< 0.2	< 0.2	<1	30%	Pass
Hardness mg equivalent CaCO ₃ /L	S25-Ap0069220	CP	mg/L	180	190	9.0	30%	Pass
Duplicate								
Alkali Metals				Result 1	Result 2	RPD		
Calcium	S25-Ap0069220	CP	mg/L	21	22	8.0	30%	Pass
Magnesium	S25-Ap0069220	CP	mg/L	30	33	10	30%	Pass
Potassium	S25-Ap0069220	CP	mg/L	26	28	7.0	30%	Pass
Sodium	S25-Ap0069220	CP	mg/L	35	35	2.0	30%	Pass

Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Aluminium (filtered)	S25-Ap0069221	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass
Antimony (filtered)	S25-Ap0069221	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Arsenic (filtered)	S25-Ap0069221	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Barium (filtered)	S25-Ap0069221	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Boron (filtered)	S25-Ap0069221	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass
Cadmium (filtered)	S25-Ap0069221	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Chromium (filtered)	S25-Ap0069221	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Copper (filtered)	S25-Ap0069221	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Iron (filtered)	S25-Ap0069221	CP	mg/L	5.1	5.3	3.0	30%	Pass
Lead (filtered)	S25-Ap0069221	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Lithium (filtered)	S25-Ap0069221	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass
Manganese (filtered)	S25-Ap0069221	CP	mg/L	0.28	0.28	1.0	30%	Pass
Mercury (filtered)	S25-Ap0069221	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Nickel (filtered)	S25-Ap0069221	CP	mg/L	0.007	0.007	5.0	30%	Pass
Selenium (filtered)	S25-Ap0069221	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Silver (filtered)	S25-Ap0069221	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Zinc (filtered)	S25-Ap0069221	CP	mg/L	0.014	0.013	4.0	30%	Pass
Duplicate								
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD		
Perfluorobutanoic acid (PFBA)	S25-Ap0069222	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
Perfluoropentanoic acid (PFPeA)	S25-Ap0069222	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorohexanoic acid (PFHxA)	S25-Ap0069222	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluoroheptanoic acid (PFHpA)	S25-Ap0069222	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorooctanoic acid (PFOA)	S25-Ap0069222	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorononanoic acid (PFNA)	S25-Ap0069222	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorodecanoic acid (PFDA)	S25-Ap0069222	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluoroundecanoic acid (PFUnDA)	S25-Ap0069222	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorododecanoic acid (PFDoDA)	S25-Ap0069222	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorotridecanoic acid (PFTrDA)	S25-Ap0069222	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorotetradecanoic acid (PFTeDA)	S25-Ap0069222	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Duplicate								
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD		
Perfluorooctane sulfonamide (FOSA)	S25-Ap0069222	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S25-Ap0069222	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S25-Ap0069222	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S25-Ap0069222	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S25-Ap0069222	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S25-Ap0069222	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S25-Ap0069222	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass

Duplicate								
Perfluoroalkyl sulfonic acids (PFASs)				Result 1	Result 2	RPD		
Perfluorobutanesulfonic acid (PFBS)	S25-Ap0069222	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorononanesulfonic acid (PFNS)	S25-Ap0069222	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluoropropanesulfonic acid (PFPrS)	S25-Ap0069222	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluoropentanesulfonic acid (PFPeS)	S25-Ap0069222	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorohexanesulfonic acid (PFHxS)	S25-Ap0069222	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluoroheptanesulfonic acid (PFHpS)	S25-Ap0069222	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorooctanesulfonic acid (PFOS)	S25-Ap0069222	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorodecanesulfonic acid (PFDS)	S25-Ap0069222	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Duplicate								
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)				Result 1	Result 2	RPD		
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S25-Ap0069222	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	S25-Ap0069222	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S25-Ap0069222	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S25-Ap0069222	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass

Comments

Escherichia coli, and Total Coliforms analysis have been completed by Eurofins | Food Testing Australia, NATA Accreditation Number 20293. Report Reference: AR-25-NV-008789-01.

Report 121311-W-V2 (amendment to report 121311-W) has been issued with additional results for OPPs on sample 25-Ap0069220.

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.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

Authorised by:

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Mickael Ros	Senior Analyst-Metal
Raymond Siu	Senior Analyst-Volatile
Roopesh Rangarajan	Senior Analyst-Organic
Roopesh Rangarajan	Senior Analyst-PFAS
Ryan Phillips	Senior Analyst-Inorganic



Glenn Jackson
Managing Director

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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Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road Dandenong South VIC 3175 +61 3 8564 5000 NATA# 1261 Site# 1254	19/8 Lewalan Street Grovedale VIC 3216 +61 3 8564 5000 NATA# 1261 Site# 25403	179 Magowar Road Girraween NSW 2145 +61 2 9900 8400 NATA# 1261 Site# 18217	Unit 1,2 Dacre Street Mitchell ACT 2911 +61 2 6113 8091 NATA# 1261 Site# 25466	1/21 Smallwood Place Murarie QLD 4172 +61 7 3902 4600 NATA# 1261 Site# 20794 & 2780	1/2 Frost Drive Mayfield West NSW 2304 +61 2 4968 8448 NATA# 1261 Site# 25079

Eurofins ARL Pty Ltd

ABN: 91 05 0159 898

Perth
46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2377 Site# 2370 & 2554

Eurofins Environment Testing NZ Ltd

NZBN: 9429046024954

Auckland	Auckland (Focus)	Christchurch	Tauranga
35 O'Rorke Road Penrose Auckland 1061 +64 9 526 4551 IANZ# 1327	Unit C1/4 Pacific Rise Mount Wellington Auckland 1061 +64 9 525 0568 IANZ# 1308	43 Detroit Drive Rolleston Christchurch 7675 +64 3 343 5201 IANZ# 1290	1277 Cameron Road Gate Pa Tauranga 3112 +64 9 525 0568 IANZ# 1402

Sample Receipt Advice

Company name: Geo-Logix P/L
Contact name: Joe Unwin
Project name: WOONGARRAH
Project ID: 2301027C
Turnaround time: 5 Day
Date/Time received: Apr 29, 2025 1:41 PM
Eurofins reference: 1213511

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✓ Sample Temperature of chilled sample on the batch as recorded by Eurofins Sample Receipt : 4.6 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

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Bonnie Pu on phone : or by email: Bonnie.Pu@eurofinsanz.com

Results will be delivered electronically via email to Joe Unwin - junwin@geo-logix.com.au.

Note: A copy of these results will also be delivered to the general Geo-Logix P/L email address.

CHAIN OF CUSTODY

Project Manager:

Joe Wilson

Contact email:

jwilson@geo-logix.com.au

Project Name:

Wongarrah

Project Number:

2301027 c

Date Submitted:

29 4 25

Page ____ of ____

Purchase Order No:

P06770

Quote Reference:

Send Invoice to:

accounts@geo-logix.com.au

TAT required:

510

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix				Comments	COMPOSITE	TRH - C6 - C10	TRH - C10 - C40	BTEX	PAHs	PCBs	OPPs	Phenols	Methane	Metals - Specify **	28 PFAS	TDS	Redox potential	Conductivity (EC)	pH	Hold	SUITE (see comments)	Eurofins MGT Suite Codes
			soil	water	air	paint, filters																			
	MW1	28/4/25	X				Suites: SVV, MCA3 B11D B11E, B19D and ticked to the right	X	X		X	X	X	X	X	X	X	X	X	X	X				TRH/TEXTN
	MW2	28/4/25	X				Suites: SVV, MCA3 B11D B11E, B19D and ticked to the right	X	X		X	X	X	X	X	X	X	X	X	X	X				B1A TRH/MAH
	MW3	28/4/25	X				Suites: SVV, MCA3 B11D B11E, B19D and ticked to the right	X	X		X	X	X	X	X	X	X	X	X	X	X				B2A TRH/MAH/Pb
	DW1	28/4/25	X				Suites: B8 and ticked to the right											X							B3A PAH/Phenols
	RW1	28/4/25	X				Suites: B8 and ticked to the right										X								B4A TRH/TEXTN/PAH/Phenols
	TRIP SPIKE	28/4/25	X					X																	B5A TRH/TEXTN/PAH/Phenols
	TRIP BLANK	28/4/25	X					X																	B6A TRH/TEXTN/PAH/Phenols
	PEAS BLANK	28/4/25	X				Suites: B8 and ticked to the right	X																	B7A TRH/TEXTN/PAH/Phenols
																									B8A TRH/TEXTN/PAH/Phenols
																									B9A TRH/TEXTN/PAH/Phenols
																									B10A TRH/TEXTN/PAH/Phenols
																									B11A TRH/TEXTN/PAH/Phenols
																									B12A TRH/TEXTN/PAH/Phenols
																									B13A TRH/TEXTN/PAH/Phenols
																									B14A TRH/TEXTN/PAH/Phenols
																									B15A TRH/TEXTN/PAH/Phenols
																									B16A TRH/TEXTN/PAH/Phenols
																									B17A TRH/TEXTN/PAH/Phenols
																									B18A TRH/TEXTN/PAH/Phenols
																									B19A TRH/TEXTN/PAH/Phenols
																									B20A TRH/TEXTN/PAH/Phenols

Metals** (circle) As Cd Cr Cu Ni Pb Zn Hg Cr 6+, Cr 3+, Fe 2+, Fe 3+, Be B Al V Mn Fe Co Se Sr Sn Mo Ag Ba Tl Bi Sb L

Chain of Custody

Relinquished by:

WBSI

Date/Time:

29/4/25

Signature:

WBSI

Received by:

Kanya Hubbard

Date/Time:

29/4/25

Signature:

K-H

4-60

Cm11

1213511

Geo-Logix P/L
Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102



NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition
Arrangement for the mutual recognition of the
equivalence of testing, medical testing, calibration,
inspection, proficiency testing scheme providers and
reference materials producers reports and certificates.

Attention: Joe Unwin

Report 1213846-W
Project name WOONGARRAH
Project ID 2301027C
Received Date Apr 29, 2025

Client Sample ID			TW1
Sample Matrix			Water
Eurofins Sample No.			S25- Ap0071173
Date Sampled			Apr 28, 2025
Test/Reference	LOR	Unit	
Volatile Organics			
1.1-Dichloroethane	0.001	mg/L	< 0.001
1.1-Dichloroethene	0.001	mg/L	< 0.001
1.1.1-Trichloroethane	0.001	mg/L	< 0.001
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.001
1.1.2-Trichloroethane	0.001	mg/L	< 0.001
1.1.2.2-Tetrachloroethane	0.001	mg/L	< 0.001
1.2-Dibromoethane	0.001	mg/L	< 0.001
1.2-Dichlorobenzene	0.001	mg/L	< 0.001
1.2-Dichloroethane	0.001	mg/L	< 0.001
1.2-Dichloropropane	0.001	mg/L	< 0.001
1.2.3-Trichloropropane	0.001	mg/L	< 0.001
1.2.4-Trimethylbenzene	0.001	mg/L	< 0.001
1.3-Dichlorobenzene	0.001	mg/L	< 0.001
1.3-Dichloropropane	0.001	mg/L	< 0.001
1.3.5-Trimethylbenzene	0.001	mg/L	< 0.001
1.4-Dichlorobenzene	0.001	mg/L	< 0.001
2-Butanone (MEK)	0.005	mg/L	< 0.005
2-Propanone (Acetone)	0.005	mg/L	< 0.005
4-Chlorotoluene	0.001	mg/L	< 0.001
4-Methyl-2-pentanone (MIBK)	0.005	mg/L	< 0.005
Allyl chloride	0.001	mg/L	< 0.001
Benzene	0.001	mg/L	< 0.001
Bromobenzene	0.001	mg/L	< 0.001
Bromochloromethane	0.001	mg/L	< 0.001
Bromodichloromethane	0.001	mg/L	< 0.001
Bromoform	0.001	mg/L	< 0.001
Bromomethane	0.005	mg/L	< 0.005
Carbon disulfide	0.001	mg/L	< 0.001
Carbon Tetrachloride	0.001	mg/L	< 0.001
Chlorobenzene	0.001	mg/L	< 0.001
Chloroethane	0.005	mg/L	< 0.005
Chloroform	0.005	mg/L	< 0.005
Chloromethane	0.005	mg/L	< 0.005
cis-1.2-Dichloroethene	0.001	mg/L	< 0.001
cis-1.3-Dichloropropene	0.001	mg/L	< 0.001

Client Sample ID			TW1
Sample Matrix			Water
Eurofins Sample No.			S25- Ap0071173
Date Sampled			Apr 28, 2025
Test/Reference	LOR	Unit	
Volatile Organics			
Dibromochloromethane	0.001	mg/L	< 0.001
Dibromomethane	0.001	mg/L	< 0.001
Dichlorodifluoromethane	0.005	mg/L	< 0.005
Ethylbenzene	0.001	mg/L	< 0.001
Iodomethane	0.001	mg/L	< 0.001
Isopropyl benzene (Cumene)	0.001	mg/L	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002
Methylene Chloride	0.005	mg/L	< 0.005
o-Xylene	0.001	mg/L	< 0.001
Styrene	0.001	mg/L	< 0.001
Tetrachloroethene	0.001	mg/L	< 0.001
Toluene	0.001	mg/L	< 0.001
trans-1.2-Dichloroethene	0.001	mg/L	< 0.001
trans-1.3-Dichloropropene	0.001	mg/L	< 0.001
Trichloroethene	0.001	mg/L	< 0.001
Trichlorofluoromethane	0.005	mg/L	< 0.005
Vinyl chloride	0.005	mg/L	< 0.005
Xylenes - Total*	0.003	mg/L	< 0.003
Total MAH*	0.003	mg/L	< 0.003
Vic EPA IWRG 621 CHC (Total)*	0.005	mg/L	< 0.005
Vic EPA IWRG 621 Other CHC (Total)*	0.005	mg/L	< 0.005
4-Bromofluorobenzene (surr.)	1	%	96
Toluene-d8 (surr.)	1	%	100
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene ^{N02}	0.01	mg/L	< 0.01
Total Recoverable Hydrocarbons			
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
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
Polycyclic Aromatic Hydrocarbons			
Acenaphthene	0.001	mg/L	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001
Anthracene	0.001	mg/L	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001
Chrysene	0.001	mg/L	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001

Client Sample ID			TW1
Sample Matrix			Water
Eurofins Sample No.			S25-Ap0071173
Date Sampled			Apr 28, 2025
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Fluoranthene	0.001	mg/L	< 0.001
Fluorene	0.001	mg/L	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001
Naphthalene	0.001	mg/L	< 0.001
Phenanthrene	0.001	mg/L	< 0.001
Pyrene	0.001	mg/L	< 0.001
Total PAH*	0.001	mg/L	< 0.001
2-Fluorobiphenyl (surr.)	1	%	53
p-Terphenyl-d14 (surr.)	1	%	141
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	0.008
Zinc	0.005	mg/L	0.019
Perfluoroalkyl carboxylic acids (PFCAs)			
Perfluorobutanoic acid (PFBA) ^{N11}	0.05	ug/L	< 0.05
Perfluoropentanoic acid (PFPeA) ^{N11}	0.01	ug/L	< 0.01
Perfluorohexanoic acid (PFHxA) ^{N11}	0.01	ug/L	< 0.01
Perfluoroheptanoic acid (PFHpA) ^{N11}	0.01	ug/L	< 0.01
Perfluorooctanoic acid (PFOA) ^{N11}	0.01	ug/L	< 0.01
Perfluorononanoic acid (PFNA) ^{N11}	0.01	ug/L	< 0.01
Perfluorodecanoic acid (PFDA) ^{N11}	0.01	ug/L	< 0.01
Perfluoroundecanoic acid (PFUnDA) ^{N11}	0.01	ug/L	< 0.01
Perfluorododecanoic acid (PFDoDA) ^{N11}	0.01	ug/L	< 0.01
Perfluorotridecanoic acid (PFTeDA) ^{N15}	0.01	ug/L	< 0.01
Perfluorotetradecanoic acid (PFTeDA) ^{N11}	0.01	ug/L	< 0.01
13C4-PFBA (surr.)	1	%	128
13C5-PFPeA (surr.)	1	%	95
13C5-PFHxA (surr.)	1	%	86
13C4-PFHpA (surr.)	1	%	94
13C8-PFOA (surr.)	1	%	66
13C5-PFNA (surr.)	1	%	88
13C6-PFDA (surr.)	1	%	81
13C2-PFUnDA (surr.)	1	%	84
13C2-PFDoDA (surr.)	1	%	66
13C2-PFTeDA (surr.)	1	%	140
Perfluoroalkyl sulfonamido substances			
Perfluorooctane sulfonamide (FOSA) ^{N11}	0.05	ug/L	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) ^{N11}	0.05	ug/L	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) ^{N11}	0.05	ug/L	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE) ^{N11}	0.05	ug/L	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE) ^{N11}	0.05	ug/L	< 0.05

Client Sample ID			TW1
Sample Matrix			Water
Eurofins Sample No.			S25- Ap0071173
Date Sampled			Apr 28, 2025
Test/Reference	LOR	Unit	
Perfluoroalkyl sulfonamido substances			
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) ^{N11}	0.05	ug/L	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) ^{N11}	0.05	ug/L	< 0.05
13C8-FOSA (surr.)	1	%	82
D3-N-MeFOSA (surr.)	1	%	70
D5-N-EtFOSA (surr.)	1	%	77
D7-N-MeFOSE (surr.)	1	%	84
D9-N-EtFOSE (surr.)	1	%	73
D5-N-EtFOSAA (surr.)	1	%	68
D3-N-MeFOSAA (surr.)	1	%	88
Perfluoroalkyl sulfonic acids (PFASs)			
Perfluorobutanesulfonic acid (PFBS) ^{N11}	0.01	ug/L	< 0.01
Perfluorononanesulfonic acid (PFNS) ^{N15}	0.01	ug/L	< 0.01
Perfluoropropanesulfonic acid (PFPrS) ^{N15}	0.01	ug/L	< 0.01
Perfluoropentanesulfonic acid (PFPeS) ^{N15}	0.01	ug/L	< 0.01
Perfluorohexanesulfonic acid (PFHxS) ^{N11}	0.01	ug/L	0.01
Perfluoroheptanesulfonic acid (PFHpS) ^{N15}	0.01	ug/L	< 0.01
Perfluorooctanesulfonic acid (PFOS) ^{N11}	0.01	ug/L	< 0.01
Perfluorodecanesulfonic acid (PFDS) ^{N15}	0.01	ug/L	< 0.01
13C3-PFBS (surr.)	1	%	111
18O2-PFHxS (surr.)	1	%	79
13C8-PFOS (surr.)	1	%	78
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) ^{N11}	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA) ^{N11}	0.05	ug/L	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) ^{N11}	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) ^{N11}	0.01	ug/L	< 0.01
13C2-4:2 FTSA (surr.)	1	%	39
13C2-6:2 FTSA (surr.)	1	%	134
13C2-8:2 FTSA (surr.)	1	%	59
13C2-10:2 FTSA (surr.)	1	%	103
PFASs Summations			
Sum (PFHxS + PFOS)*	0.01	ug/L	0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

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
Eurofins Suite B8			
Volatile Organics	Melbourne	May 01, 2025	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices (USEPA 8260)			
Total Recoverable Hydrocarbons	Melbourne	May 01, 2025	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	May 01, 2025	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	May 01, 2025	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	May 01, 2025	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Melbourne	May 01, 2025	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Metals M8	Melbourne	May 01, 2025	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Melbourne	May 01, 2025	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Melbourne	May 01, 2025	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Melbourne	May 01, 2025	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Melbourne	May 01, 2025	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			



web: www.eurofins.com.au
email: EnviroSales@eurofinsanz.com

Melbourne 6 Monterey Road Dandenong South VIC 3175 +61 3 8564 5000 NATA# 1261 Site# 1254	Geelong 19/8 Lewalan Street Grovedale VIC 3216 +61 3 8564 5000 NATA# 1261 Site# 25403	Sydney 179 Magowar Road Girraween NSW 2145 +61 2 9900 8400 NATA# 1261 Site# 18217	Canberra Unit 1,2 Dacre Street Mitchell ACT 2911 +61 2 6113 8091 NATA# 1261 Site# 25466	Brisbane 1/21 Smallwood Place Murarrie QLD 4172 +61 7 3902 4600 NATA# 1261 Site# 20794 & 2780	Newcastle 1/2 Frost Drive Mayfield West NSW 2304 +61 2 4968 8448 NATA# 1261 Site# 25079	Perth 46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2377 Site# 2370 & 2554	Auckland 35 O'Rorke Road Penrose Auckland 1061 +64 9 526 4551 IANZ# 1327	Auckland (Focus) Unit C1/4 Pacific Rise Mount Wellington Auckland 1061 +64 9 525 0568 IANZ# 1308	Christchurch 43 Detroit Drive Rolleston Christchurch 7675 +64 3 343 5201 IANZ# 1290	Tauranga 1277 Cameron Road Gate Pa Tauranga 3112 +64 9 525 0568 IANZ# 1402
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Company Name: Geo-Logix P/L

Address: Bld Q2 Level 3, 2309/4 Daydream St
Warriewood
NSW 2102

Project Name: WOONGARRAH

Project ID: 2301027C

Order No.: PO6769

Report #: 1213846

Phone: 02 9979 1722

Fax: 02 9979 1222

Received: Apr 29, 2025 1:41 PM

Due: May 6, 2025

Priority: 5 Day

Contact Name: Joe Unwin

Eurofins Analytical Services Manager : Bonnie Pu

Sample Detail						Eurofins Suite B8	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	TW1	Apr 28, 2025		Water	S25-Ap0071173	X	X
Test Counts						1	1

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
- Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
- Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
- For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
- Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
- SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

Please refer to the '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 before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	mg/L: milligrams per litre	ppm: parts per million
µg/L: micrograms per litre	ppb: parts per billion	%: Percentage
org/100 mL: Organisms per 100 millilitres	NTU: Nephelometric Turbidity Units	MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony Forming Unit	Colour: Pt-Co Units (CU)	

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - 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.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (<i>bis</i> -tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

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%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

- Where a result is reported as 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.
- 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 are not data from your samples.
- 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.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
- For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
- 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							
Volatile Organics							
1.1-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.1-Dichloroethene	mg/L	< 0.001			0.001	Pass	
1.1.1-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.1.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dibromoethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.2-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.3-Trichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.4-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.3.5-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.4-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
2-Butanone (MEK)	mg/L	< 0.005			0.005	Pass	
2-Propanone (Acetone)	mg/L	< 0.005			0.005	Pass	
4-Chlorotoluene	mg/L	< 0.001			0.001	Pass	
4-Methyl-2-pentanone (MIBK)	mg/L	< 0.005			0.005	Pass	
Allyl chloride	mg/L	< 0.001			0.001	Pass	
Benzene	mg/L	< 0.001			0.001	Pass	
Bromobenzene	mg/L	< 0.001			0.001	Pass	
Bromochloromethane	mg/L	< 0.001			0.001	Pass	
Bromodichloromethane	mg/L	< 0.001			0.001	Pass	
Bromoform	mg/L	< 0.001			0.001	Pass	
Bromomethane	mg/L	< 0.005			0.005	Pass	
Carbon disulfide	mg/L	< 0.001			0.001	Pass	
Carbon Tetrachloride	mg/L	< 0.001			0.001	Pass	
Chlorobenzene	mg/L	< 0.001			0.001	Pass	
Chloroethane	mg/L	< 0.005			0.005	Pass	
Chloroform	mg/L	< 0.005			0.005	Pass	
Chloromethane	mg/L	< 0.005			0.005	Pass	
cis-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
cis-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Dibromochloromethane	mg/L	< 0.001			0.001	Pass	
Dibromomethane	mg/L	< 0.001			0.001	Pass	
Dichlorodifluoromethane	mg/L	< 0.005			0.005	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
Iodomethane	mg/L	< 0.001			0.001	Pass	
Isopropyl benzene (Cumene)	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
Methylene Chloride	mg/L	< 0.005			0.005	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Styrene	mg/L	< 0.001			0.001	Pass	
Tetrachloroethene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
trans-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
trans-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Trichloroethene	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Trichlorofluoromethane	mg/L	< 0.005			0.005	Pass	
Vinyl chloride	mg/L	< 0.005			0.005	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	
Method Blank							
Total Recoverable Hydrocarbons							
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	
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							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g,h,i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a,h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1,2,3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSA's)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSA's)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	98			70-130	Pass	
1.2-Dichlorobenzene	%	106			70-130	Pass	
1.2-Dichloroethane	%	100			70-130	Pass	
Benzene	%	108			70-130	Pass	
Ethylbenzene	%	110			70-130	Pass	
m&p-Xylenes	%	117			70-130	Pass	
Toluene	%	112			70-130	Pass	
Trichloroethene	%	114			70-130	Pass	
Xylenes - Total*	%	111			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	100			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	105			70-130	Pass	
TRH C10-C14	%	91			70-130	Pass	
TRH C6-C10	%	115			70-130	Pass	
TRH >C10-C16	%	91			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	108			80-120	Pass	
Cadmium	%	108			80-120	Pass	
Chromium	%	112			80-120	Pass	
Copper	%	106			80-120	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Lead			%	108			80-120	Pass	
Mercury			%	108			80-120	Pass	
Nickel			%	111			80-120	Pass	
Zinc			%	108			80-120	Pass	
LCS - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)									
Perfluorobutanoic acid (PFBA)			%	101			50-150	Pass	
Perfluoropentanoic acid (PFPeA)			%	88			50-150	Pass	
Perfluorohexanoic acid (PFHxA)			%	92			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)			%	74			50-150	Pass	
Perfluorooctanoic acid (PFOA)			%	107			50-150	Pass	
Perfluorononanoic acid (PFNA)			%	89			50-150	Pass	
Perfluorodecanoic acid (PFDA)			%	82			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)			%	95			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)			%	118			50-150	Pass	
Perfluorotridecanoic acid (PFTTrDA)			%	89			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)			%	87			50-150	Pass	
LCS - % Recovery									
Perfluoroalkyl sulfonamido substances									
Perfluorooctane sulfonamide (FOSA)			%	107			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)			%	64			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)			%	116			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)			%	86			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)			%	111			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)			%	107			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)			%	128			50-150	Pass	
LCS - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)									
Perfluorobutanesulfonic acid (PFBS)			%	90			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)			%	97			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)			%	145			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)			%	104			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)			%	111			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)			%	73			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)			%	92			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)			%	82			50-150	Pass	
LCS - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)									
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)			%	150			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)			%	91			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)			%	85			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)			%	143			50-150	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Volatile Organics				Result 1					
1.1-Dichloroethene	M25-My0000263	NCP	%	99			70-130	Pass	
1.2-Dichlorobenzene	M25-My0000263	NCP	%	111			70-130	Pass	
1.2-Dichloroethane	M25-My0000263	NCP	%	104			70-130	Pass	
Benzene	M25-My0000263	NCP	%	117			70-130	Pass	
Ethylbenzene	M25-My0000263	NCP	%	117			70-130	Pass	
m&p-Xylenes	M25-My0000263	NCP	%	123			70-130	Pass	
o-Xylene	M25-My0000263	NCP	%	107			70-130	Pass	
Toluene	M25-My0000263	NCP	%	120			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Trichloroethene	M25-My0000263	NCP	%	110			70-130	Pass	
Xylenes - Total*	M25-My0000263	NCP	%	117			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	M25-My0000263	NCP	%	110			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	M25-My0000263	NCP	%	110			70-130	Pass	
TRH C10-C14	M25-Ap0072828	NCP	%	81			70-130	Pass	
TRH C6-C10	M25-My0000263	NCP	%	113			70-130	Pass	
TRH >C10-C16	M25-Ap0072828	NCP	%	80			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M25-Ap0071399	NCP	%	102			75-125	Pass	
Cadmium	M25-Ap0071399	NCP	%	99			75-125	Pass	
Chromium	M25-Ap0071399	NCP	%	103			75-125	Pass	
Copper	M25-Ap0071399	NCP	%	103			75-125	Pass	
Lead	M25-Ap0071399	NCP	%	96			75-125	Pass	
Mercury	M25-Ap0071399	NCP	%	91			75-125	Pass	
Nickel	M25-Ap0071399	NCP	%	98			75-125	Pass	
Zinc	M25-Ap0068230	NCP	%	99			75-125	Pass	
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	M25-Ap0072820	NCP	%	110			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	M25-Ap0072820	NCP	%	107			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	M25-Ap0072820	NCP	%	105			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	M25-Ap0072820	NCP	%	86			50-150	Pass	
Perfluorooctanoic acid (PFOA)	M25-Ap0072820	NCP	%	117			50-150	Pass	
Perfluorononanoic acid (PFNA)	M25-Ap0072820	NCP	%	106			50-150	Pass	
Perfluorodecanoic acid (PFDA)	M25-Ap0072820	NCP	%	107			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	M25-Ap0072820	NCP	%	109			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	M25-Ap0072820	NCP	%	130			50-150	Pass	
Perfluorotridecanoic acid (PFTriDA)	M25-Ap0072820	NCP	%	112			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	M25-Ap0072820	NCP	%	99			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	M25-Ap0072820	NCP	%	112			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	M25-Ap0072820	NCP	%	100			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	M25-Ap0072820	NCP	%	128			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	M25-Ap0072820	NCP	%	125			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	M25-Ap0072820	NCP	%	121			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	M25-Ap0072820	NCP	%	105			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	M25-Ap0072820	NCP	%	121			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluorobutanesulfonic acid (PFBS)	M25-Ap0072820	NCP	%	117			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	M25-Ap0072820	NCP	%	133			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	M25-Ap0072820	NCP	%	94			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	M25-Ap0072820	NCP	%	100			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	M25-Ap0072820	NCP	%	82			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	M25-Ap0072820	NCP	%	134			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	M25-Ap0072820	NCP	%	110			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	M25-Ap0072820	NCP	%	76			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	M25-Ap0072820	NCP	%	76			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	M25-Ap0072820	NCP	%	119			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	M25-Ap0072820	NCP	%	145			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	M25-Ap0072820	NCP	%	149			50-150	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	S25-Ap0071173	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1-Dichloroethene	S25-Ap0071173	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.1-Trichloroethane	S25-Ap0071173	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	S25-Ap0071173	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.2-Trichloroethane	S25-Ap0071173	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	S25-Ap0071173	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dibromoethane	S25-Ap0071173	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichlorobenzene	S25-Ap0071173	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichloroethane	S25-Ap0071173	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichloropropane	S25-Ap0071173	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2.3-Trichloropropane	S25-Ap0071173	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2.4-Trimethylbenzene	S25-Ap0071173	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3-Dichlorobenzene	S25-Ap0071173	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3-Dichloropropane	S25-Ap0071173	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3.5-Trimethylbenzene	S25-Ap0071173	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.4-Dichlorobenzene	S25-Ap0071173	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
2-Butanone (MEK)	S25-Ap0071173	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2-Propanone (Acetone)	S25-Ap0071173	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
4-Chlorotoluene	S25-Ap0071173	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	S25-Ap0071173	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Allyl chloride	S25-Ap0071173	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzene	S25-Ap0071173	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromobenzene	S25-Ap0071173	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromochloromethane	S25-Ap0071173	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromodichloromethane	S25-Ap0071173	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromoform	S25-Ap0071173	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
Bromomethane	S25-Ap0071173	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Carbon disulfide	S25-Ap0071173	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Carbon Tetrachloride	S25-Ap0071173	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chlorobenzene	S25-Ap0071173	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chloroethane	S25-Ap0071173	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Chloroform	S25-Ap0071173	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Chloromethane	S25-Ap0071173	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
cis-1,2-Dichloroethene	S25-Ap0071173	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
cis-1,3-Dichloropropene	S25-Ap0071173	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibromochloromethane	S25-Ap0071173	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibromomethane	S25-Ap0071173	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dichlorodifluoromethane	S25-Ap0071173	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Ethylbenzene	S25-Ap0071173	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Iodomethane	S25-Ap0071173	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Isopropyl benzene (Cumene)	S25-Ap0071173	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S25-Ap0071173	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Methylene Chloride	S25-Ap0071173	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
o-Xylene	S25-Ap0071173	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Styrene	S25-Ap0071173	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Tetrachloroethene	S25-Ap0071173	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S25-Ap0071173	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
trans-1,2-Dichloroethene	S25-Ap0071173	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
trans-1,3-Dichloropropene	S25-Ap0071173	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Trichloroethene	S25-Ap0071173	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Trichlorofluoromethane	S25-Ap0071173	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Vinyl chloride	S25-Ap0071173	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Xylenes - Total*	S25-Ap0071173	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S25-Ap0071173	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S25-Ap0071173	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	M25-My0001760	NCP	mg/L	0.95	0.95	<1	30%	Pass	
TRH C15-C28	M25-My0001760	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	M25-My0001760	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C6-C10	S25-Ap0071173	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH >C10-C16	M25-My0001760	NCP	mg/L	0.61	0.64	5.0	30%	Pass	
TRH >C16-C34	M25-My0001760	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	M25-My0001760	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M25-Ap0071609	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	M25-Ap0071609	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	M25-Ap0071609	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	M25-Ap0071609	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	M25-Ap0071609	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	M25-Ap0071609	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g,h,i)perylene	M25-Ap0071609	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	M25-Ap0071609	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	M25-Ap0071609	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a,h)anthracene	M25-Ap0071609	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Fluoranthene	M25-Ap0071609	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluorene	M25-Ap0071609	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Indeno(1.2.3-cd)pyrene	M25-Ap0071609	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Naphthalene	M25-Ap0071609	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Phenanthrene	M25-Ap0071609	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Pyrene	M25-Ap0071609	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	M25-Ap0071399	NCP	mg/L	0.002	0.002	10	30%	Pass
Cadmium	M25-Ap0071399	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Chromium	M25-Ap0071399	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Copper	M25-Ap0071399	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Lead	M25-Ap0071399	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Mercury	M25-Ap0071399	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Nickel	M25-Ap0071399	NCP	mg/L	0.012	0.012	2.0	30%	Pass
Zinc	M25-Ap0071399	NCP	mg/L	0.71	0.72	1.0	30%	Pass
Duplicate								
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD		
Perfluorobutanoic acid (PFBA)	S25-Ap0071173	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
Perfluoropentanoic acid (PFPeA)	S25-Ap0071173	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorohexanoic acid (PFHxA)	S25-Ap0071173	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluoroheptanoic acid (PFHpA)	S25-Ap0071173	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorooctanoic acid (PFOA)	S25-Ap0071173	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorononanoic acid (PFNA)	S25-Ap0071173	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorodecanoic acid (PFDA)	S25-Ap0071173	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluoroundecanoic acid (PFUnDA)	S25-Ap0071173	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorododecanoic acid (PFDoDA)	S25-Ap0071173	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorotridecanoic acid (PFTrDA)	S25-Ap0071173	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorotetradecanoic acid (PFTeDA)	S25-Ap0071173	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Duplicate								
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD		
Perfluorooctane sulfonamide (FOSA)	S25-Ap0071173	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S25-Ap0071173	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S25-Ap0071173	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S25-Ap0071173	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S25-Ap0071173	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S25-Ap0071173	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S25-Ap0071173	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass

Duplicate								
Perfluoroalkyl sulfonic acids (PFASs)				Result 1	Result 2	RPD		
Perfluorobutanesulfonic acid (PFBS)	S25-Ap0071173	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorononanesulfonic acid (PFNS)	S25-Ap0071173	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluoropropanesulfonic acid (PFPrS)	S25-Ap0071173	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluoropentanesulfonic acid (PFPeS)	S25-Ap0071173	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorohexanesulfonic acid (PFHxS)	S25-Ap0071173	CP	ug/L	0.01	< 0.01	40	30%	Fail
Perfluoroheptanesulfonic acid (PFHpS)	S25-Ap0071173	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorooctanesulfonic acid (PFOS)	S25-Ap0071173	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorodecanesulfonic acid (PFDS)	S25-Ap0071173	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Duplicate								
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)				Result 1	Result 2	RPD		
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S25-Ap0071173	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	S25-Ap0071173	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S25-Ap0071173	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S25-Ap0071173	CP	ug/L	< 0.01	< 0.01	<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.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).
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:

Irem Haskara	Analytical Services Manager
Carroll Lee	Senior Analyst-Organic
Edward Lee	Senior Analyst-Organic
Emily Rosenberg	Senior Analyst-Metal
Joseph Edouard	Senior Analyst-Volatile
Mele Singh	Senior Analyst-PFAS



Glenn Jackson
Managing Director

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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Project Name:

Woongarra

Project Number:

2301027c

Date Submitted:

29 4 25

CHAIN OF CUSTODY

Page 1 of 1
Purchase Order No: P06769

Quote Reference:

Send Invoice to:

accounts@geo-logix.com.au

TAT required:

STD

SEND
10

MELBOURNE

ANALYSIS REQUIRED

Lab ID	Sample ID	Date	Matrix				Comments	COMPOSITE	TRH - C6 - C10	TRH - C10 - C40	BTX	PAHs	PCBs	OPPs	Phenols	Methane	Metals - Specify **	TDS	Redox potential	Conductivity (EC)	PH	Hold	SUITE (see comments)	Eurofins MGT Suite Codes
			soil	water	air	paint, filters	other																	
	TW1	28/04/2025	X																					B1 TRH/TEXN
																								B1A TRH/MAH
																								B2 TRH/TEXN/PPb
																								B2A TRH/MAH/PPb
																								B3 PAH/Phenols
																								B4 TRH/TEXN/PAH
																								B4A TRH/TEXN/PAH/Phenols
																								B5 TRH/TEXN/M7
																								B6 TRH/TEXN/M8
																								B7 TRH/TEXN/PAH/M8
																								B7A TRH/TEXN/PAH/Phenols/M8
																								B8 TRH/VO/PAH/M8
																								B9 TRH/TEXN/PAH/OC/PP/M8
																								B10 TRH/TEXN/PAH/OC/PP/M8
																								B11 Na/K/Ca/Mg/Cl/CO ₃ /CO ₂ /HCO ₃ /NH ₄ /NO ₃
																								B11A B11/Alkalinity
																								B11B B11/EC/TDS
																								B12 TRH/TEXN/Oxygenates/Ethanol
																								B12A TRH/TEXN/Oxygenates
																								B13 OC/PCB
																								B14 OC/OPP
																								B15 OC/OPP/PCB
																								B16 TDS/SO ₄ /CH ₄ /AK/BOD/COD/HPC/CUB
																								B17 SO ₄ /NO ₃ /Fe ⁺⁺ /HPC/CUB
																								B18 CH ₂ /SO ₄ /pH
																								B19 NPK
																								B20 CEC/%ESP/Ca/Mg/Na/K

Metals** (circle) As, Cd, Cr, Cu, Ni, Pb, Zn, Hg, Cr⁶⁺, Cr³⁺, Fe²⁺, Fe³⁺, Be, B, Al, V, Mn, Fe, Co, Se, Sr, Sn, Mo, Ag, Ba, Ti, Bi, Sb

Chain of Custody

Relinquished by:

Date/Time:

Signature:

Received by:

Date/Time:

Signature:

Date/Time:

Relinquished by:

Date/Time:

Signature:

Received by:

Date/Time:

Signature:

Date/Time:

4.6 cml

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