
Detailed Site Investigation

2-4 Brownlee Street,
Ourimbah NSW

NEW23P-0208-ABv3
22 November 2024



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Executive Summary

Qualtest Laboratory NSW Pty Ltd (Qualtest) has carried out a Detailed Site Investigation (DSI) for Central Coast Industry Connect Limited (CCIC) for the site located at 2-4 Brownlee Street, Ourimbah NSW (the Site).

The site is approximately 1.8 ha and comprised Lot 3 DP612071 and part Lot 42 DP1237817, within the Central Coast Council. The site is currently zoned E4 General Industrial and C2 Environmental Conservation along Bangalow Creek. The site is proposed to be developed into a Food Manufacturing Hub with associated roads and services in the northern portion of the site. Portions of the site will be retained as riparian zone and/or vegetated landscape. No development or vegetation clearing is proposed in these areas, other than weed management under a Vegetation Management Plan (VMP).

Qualtest completed a Preliminary Site Investigation (PSI) on the site, ref: NEW23P-0208-AA, dated 24 November 2023 (Qualtest, 2023). The PSI identified four Areas of Environmental Concern (AECs) for the site relating to: 1. Former sawmill/recycling depot; 2. Former use of Lot 42 as Council depot; 3. Abandoned dwelling on Lot 42; and, 4. Fill materials. Based on the site history and observations during the site walkover, it was recommended that a Detailed Site Investigation was carried out.

The purpose of this DSI is to support the DA submission to Central Coast Council for the proposed development.

It is noted that the assessment was carried out in two stages, with sampling in November 2023 and October 2024. The sampling in November 2023 was carried out in conjunction with a geotechnical assessment for the site, ref: NEW23P-0208-AC.

The objectives of the DSI were to:

- Assess the presence of soil contamination (if any) within the AECs previously identified at the site by Qualtest (2023);
- Update the Conceptual Site Model for the site based on the findings of the DSI; and
- Provide recommendations on the need for further assessments, remediation and/or management, as required.

In order to achieve the above objectives, Qualtest carried out the following scope:

- Excavation of 28 test pits, and collection of soil samples from 24 test pit locations, and 19 surface soil locations;
- Laboratory analysis of soil samples for identified contaminants of potential concern; and,
- Data assessment and preparation of this DSI Report.

Based on the results of the DSI, it is considered the site can be made suitable for the proposed development, provided the following recommendations are implemented:

- Preparation and implementation of a Remediation Action Plan (RAP) for remediation of the identified ACM contamination.
- Preparation and implementation of an Asbestos Management and Removal Control Plan (AMRCP) would be required for the handling and disposal of ACM or ACM impacted soils.
- Preparation and implementation of an Unexpected Finds Procedure. It is recommended that an environmental scientist is present during vegetation clearing and excavations for the proposed detention basin and associated drainage lines.

Provided the recommendations made within this report are implemented, it is considered that the site could be rendered suitable, from a contamination point of view, for the proposed Manufacturing Food Hub development.

This report was prepared in general accordance with the relevant sections of the NSW EPA (2020) Guidelines for Consultants Reporting on Contaminated Land and the *National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013)*, NEPC 2013, Canberra (referred to as ASC NEPM 2013). This report comprises a stage 2 detailed site investigation as described in SEPP (Resilience and Hazards) 2021, Chapter 4).

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Figure 4A – Sample Plan – Northern Portion

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Figure 6A – Sample Plan Overlaid on Development Layout – Northern Portion

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Proposed Development Plan

Appendix B: - Tables: Table 1 – Soil Analytical Results – TRH, BETX, PAHs, Metals

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1.0 Introduction

Qualtest Laboratory NSW Pty Ltd (Qualtest) has carried out a Detailed Site Investigation (DSI) for Central Coast Industry Connect Limited (CCIC) for the site located at 2-4 Brownlee Street, Ourimbah NSW (the Site). The site location is shown on Figure 1, Appendix A.

The site is approximately 1.8 ha and comprised Lot 3 DP612071 and part Lot 42 DP1237817, within the Central Coast Council. The site is currently zoned E4 General Industrial and C2 Environmental Conservation along Bangalow Creek. The site is proposed to be developed into a Food Manufacturing Hub with associated roads and services in the northern portion of the site. Portions of the site will be retained as riparian zone and/or vegetated landscape. No development or vegetation clearing is proposed in these areas, other than weed management under a Vegetation Management Plan (VMP). A copy of the proposed development plan is included in Appendix A.

Qualtest completed a Preliminary Site Investigation (PSI) on the site, ref: NEW23P-0208-AA, dated 24 November 2023 (Qualtest, 2023). The PSI identified four Areas of Environmental Concern (AECs) for the site relating to: 1. Former sawmill/recycling depot; 2. Former use of Lot 42 as Council depot; 3. Abandoned dwelling on Lot 42; and, 4. Fill materials. Based on the site history and observations during the site walkover, it was recommended that a Detailed Site Investigation was carried out.

The purpose of this DSI is to support the DA submission to Central Coast Council for the proposed development.

It is noted that the assessment was carried out in two stages, with sampling in November 2023 and October 2024. The sampling in November 2023 was carried out in conjunction with a geotechnical assessment for the site, ref: NEW23P-0208-AC. The sampling in October 2024 was carried out following minor weed clearance for access and a revised site boundary.

This report was prepared in general accordance with the relevant sections of the NSW EPA (2020) Guidelines for Consultants Reporting on Contaminated Land and the *National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013)*, NEPC 2013, Canberra (referred to as ASC NEPM 2013). This report comprises a stage 2 detailed site investigation as described in SEPP (Resilience and Hazards) 2021, Chapter 4.

1.1 Objectives

The objectives of the DSI were to:

- Assess the presence of soil contamination (if any) within the AECs previously identified at the site by Qualtest (2023);
- Update the Conceptual Site Model for the site based on the findings of the DSI; and
- Provide recommendations on the need for further assessments, remediation and/or management, as required.

1.2 Scope of Works

In order to achieve the above objectives, Qualtest carried out the following scope:

- Excavation of 27 test pits, and collection of soil samples from 23 test pit locations, and 19 surface soil locations;
- Laboratory analysis of soil samples for identified contaminants of potential concern; and,
- Data assessment and preparation of this DSI Report.

2.0 Site Description

2.1 Site Identification

General site information is provided below in Table 2.1. The site location is shown in Figure 1, Appendix A.

Table 2.1: Summary of Site Details

Site Address:	2-4 Brownlee Street, Ourimbah NSW
Approximate site area and dimensions:	Approx. 1.8ha. Approx. 170m long (north-south) by 220m wide (east-west) at its widest and longest points. Development area is approx. 0.9ha. Approx. 100m long (north-south) by 125m wide (east-west) at its widest and longest points.
Title Identification Details:	Lot 3 DP612071 and part Lot 42 DP1237817, within the Central Coast local government area.
Current Zoning	E4 – General Industrial C2 – Environmental Conservation along Bangalow Creek
Current Ownership:	Central Coast Council
Current Occupier:	Central Coast Council
Previous and Current Landuse:	Sawmill Council depot Residential
Proposed Landuse:	Commercial/Industrial (food manufacturing hub)
Adjoining Site Uses:	North – Sports fields East – Bangalow Creek and vacant land South – Brownlee Street, and residential and commercial/industrial properties West – Brownlee Street, and rail corridor
Site Coordinates for approx. north-western corner of site:	33°21'24.68 S 151°22'13.04 E

2.2 Proposed Development

The site is an irregular shape, with a triangular shaped portion located to the north-west of Bangalow Creek, and a second triangular shape mostly located to the south-east of Bangalow Creek.

The northern portion of the site is proposed to be developed into a Food Manufacturing Hub with associated roads and services. Remaining areas of the site will be retained as a riparian zone and/or vegetated landscape. No development or vegetation

clearing is proposed in these areas, other than weed management under a Vegetation Management Plan (VMP). These areas include:

- A 20m wide strip of land along the north-western side of Bangalow Creek;
- An approximately 650m² portion in the north-eastern corner of the site; and,
- An approximately 3,750m² portion in the south-eastern corner of the site.

A copy of the proposed development plan is included in Appendix A.

2.3 Topography and Drainage

Reference to the NSW Land and Property Information Spatial Information Exchange website (<https://six.nsw.gov.au/wps/portal/>) indicated the elevation of the site was approximately 20m AHD. A plan provided by Council indicates the site elevation ranges from 16m to 19m AHD.

During the site walkover, the site was observed to be generally level with the north-eastern portion slightly sloping towards the east-southeast, and the south-western portion sloping towards the north-northeast towards Bangalow Creek.

Rain falling on the site would be expected to infiltrate into surface soils, with excess surface water run-off entering stormwater systems along Brownlee Street, located along the western boundary of the site or Bangalow Creek which forms the eastern boundary of the northern portion of the site, and the western boundary of the southern portion of the site. Bangalow Creek drains north and discharges to Ourimbah Creek about 3.3km north of the site.

2.4 Regional Geology

The Central Coast 1:100,000 coastal quaternary geological map (<https://minview.geoscience.nsw.gov.au/>) shows that the site is underlain by Quaternary floodplain: silt, clay, fluvial sand gravel.

2.5 Hydrogeology

Groundwater beneath the site is anticipated to be present in an unconfined and/or semi-confined aquifer in alluvial soils within 5m below ground surface (bgs). Groundwater flow direction is anticipated to follow the surface topography and flow towards Bangalow Creek which forms the eastern boundary of the northern portion of the site, and the western boundary of the southern portion of the site. Bangalow Creek drains north and discharges to Ourimbah Creek about 3.3km north of the site.

It should be noted that groundwater conditions can vary due to rainfall and other influences including regional groundwater flow, temperature, permeability, recharge areas, surface condition, and subsoil drainage.

A search of the NSW Department of Primary Industries (Office of Water) registered groundwater bores located within a 500m radius of the site was undertaken. The search revealed that there were 13 bores within this radius. A copy of the search was provided in the PSI (Qualtest, 2023).

Table 2.5 – Groundwater Bore Search

Bore ID	Installation Date	Purpose	Approx. Distance, Direction and Gradient from Site	Final Depth (m)	Water Bearing Zones (m)	SWL
GW080803	17/11/2004	Town Water Supply	180m N, down-gradient	-	-	
GW200559	18/06/2004	Irrigation	130m S, up-gradient	80.00	44.00-48.00 51.00-59.00 65.00-69.00 71.00-76.00	6.10
GW200593 to GW200597	19/09/2001	Test Bore	230m to 250m S-SW, up to cross-gradient	6.00 to 7.00	-	-
GW200604 to GW200607	12 to 13/07/2006	Monitoring Bore	60m to 120m E and S-SE, up-gradient	6.10	-	3.10 to 3.80
GW200098	No work order summary report available					

2.6 Acid Sulfate Soils

Reference to the Acid Sulfate Soil online database from State of NSW and Department of Planning, Industry and Environment, 2021 (<https://espade.environment.nsw.gov.au>) indicates no data is available for the site. This usually indicates that the site is located in an area of no known occurrence of ASS.

Soils characteristic of ASS were encountered during investigations, and an ASS Management Plan (ASSMP) was prepared for the site, ref: NEW23P-0208-AD dated 3 July 2024.

3.0 Previous Reports

Qualtest carried out a Preliminary Site Investigation (PSI) for the site (Qualtest 2023).

The objectives of the PSI were to provide an assessment of the likelihood for contamination to be present on the site from past uses and activities, and provide recommendations on the need for further assessment, management and/or remediation (if required).

In order to achieve the above objective, Qualtest carried out the following scope:

- Desktop study and site history review;
- Site walkover; and
- Data assessment and preparation of a PSI Report.

The site history review showed the northern portion of the site (Lot 3) has operated as a saw mill from at least 1905 (possibly early as 1898) to 1996. The southern portion of the site has contained a residential dwelling since at least the 1960s. In 1984, Council purchased the southern portion (Lot 42) of the site, then later purchased the northern portion (Lot 3) in 1991. Council leased the site from 1991 to 1996, and it had not been used as a sawmill since that time. The northern portion of the site (Lot 3) appears to have been used as a recycling depot during that time, and potentially until the early 2000's. In 2017 the infrastructure associated with the saw mill was removed/demolished from site, leaving mostly vacant bushland.

The southern portion of the site (Lot 42) appeared to be used for residential purposes from at least the 1960s until 2019 when it became vacant. Waste materials (corrugated PACM sheeting, general rubbish/waste) were stored under and around the residential dwelling. Anecdotal information indicated that in recent years, Council used Lot 42 for the storage of equipment/machinery and stockpiling materials. A photograph from 2022 showed materials/waste scattered around the shed, however these had been removed by 2023. A fill area (~760m²) was observed south to south east of the dwelling, with anthropogenic waste materials embedded within surface soils.

Four areas of Environmental Concern (AECs) were identified based on the site history and site observations. The AECs related to: 1. Former sawmill and recycling depot; 2. Former use of Lot 42 as Council depot; 3. Abandoned dwelling on Lot 42; and, 4. Fill materials.

The Conceptual Site Model (CSM) indicated that should contamination exist on the site, then a potential exposure pathway could exist to current and future site users and the environment.

Based on the site history and observations made during the site walkover, it was recommended that a Detailed Site Investigation was carried out.

4.0 Preliminary Conceptual Site Model

Based on the results of the PSI, a Preliminary Conceptual Site Model (CSM) was developed, and is shown below in Table 4.1. Note, AEC 1 was split into three parts to better represent the potential contamination types.

Table 4.1 – Preliminary Conceptual Site Model

AEC	COPC	Likelihood of Contamination	Mechanism of Contamination	Potentially Affected Media	Human & Ecological Receptors	Potential Mechanisms of Exposure	Potential & Complete Exposure Pathways
1A. Former sawmill and recycling depot on Lot 3: - Main workshop area – use of oils/fuels in machinery; - Former oil store – storage of oils.	TRH, BTEX, PAH	Medium to High	- Top-down leaks/spills of oils/fuels onto soil. - Leaching of soil contaminants to surface water and groundwater.	- Soils - Surface water - Groundwater	- Site users - Surface water – Bangalow Creek located along the eastern boundary of the site. - Groundwater dependent ecosystems.	- Direct dermal contact with contaminated soil - Ingestion of contaminated soil - Inhalation of contaminated soil (as dust) - Inhalation of hydrocarbon vapours - Leaching of soil contaminants to surface water and/or groundwater - Surface water and groundwater discharge to Bangalow Creek	- Potentially complete exposure pathway for site users. - Potentially complete exposure pathway for soil contaminants to leach to on-site surface water, if contamination present. - Likely incomplete exposure pathway for soil contaminants to leach to groundwater, given top-down nature of contaminant sources, likely depth of groundwater (>5m bgs), and likely clayey nature of sub-soils.
1B. Former sawmill and recycling depot on Lot 3: Former office and amenities buildings– use of ACM, potential for lead paints.	Metals, Asbestos	Medium to High	- Flakes of paint/metals from office building. - Leaching of soil contaminants to surface water and groundwater.	- Soils - Surface water - Groundwater	- Site users - Surface water – Bangalow Creek located along the eastern boundary of the site. - Groundwater dependent ecosystems.	- Direct dermal contact with contaminated soil - Ingestion of contaminated soil - Inhalation of asbestos fibres or contaminated soil (as dust) - Leaching of soil contaminants to surface water and/or groundwater - Surface water and groundwater discharge to Bangalow Creek	- Potentially complete exposure pathway for site users. - Potentially complete exposure pathway for soil contaminants to leach to on-site surface water, if contamination present. - Likely incomplete exposure pathway for soil contaminants to leach to groundwater, given top-down nature of contaminant sources, likely depth of groundwater (>5m bgs), and likely clayey nature of sub-soils.

AEC	COPC	Likelihood of Contamination	Mechanism of Contamination	Potentially Affected Media	Human & Ecological Receptors	Potential Mechanisms of Exposure	Potential & Complete Exposure Pathways
1C. Former sawmill and recycling depot on Lot 3: - Waste area – disposal of waste timber, and potentially other wastes; - Storage of materials of unknown quality for recycling, particularly in eastern portion of Lot 3.	TRH, BTEX, PAH Metals, Asbestos	Medium to High	- Leaks/spills of oils/fuels. - Flakes of paint/metals. - Leaching of soil contaminants to surface water and groundwater.	- Soils - Surface water - Groundwater	- Site users - Soil biota/plants and transitory wildlife - Surface water – Bangalow Creek located along the eastern boundary of the site. - Groundwater dependent ecosystems.	- Direct dermal contact with contaminated soil - Ingestion of contaminated soil - Inhalation of asbestos fibres or contaminated soil (as dust) - Inhalation of hydrocarbon vapours - Leaching of soil contaminants to surface water and/or groundwater - Surface water and groundwater discharge to Bangalow Creek	- Potentially complete exposure pathway for site users. - Potentially complete exposure pathway for ecological receptors. - Potentially complete exposure pathway for soil contaminants to leach to on-site surface water, if contamination present. - Likely incomplete exposure pathway for soil contaminants to leach to groundwater, given top-down nature of contaminant sources, likely depth of groundwater (>5m bgs), and likely clayey nature of sub-soils.
2. Former Council depot on Lot 42: - Storage and maintenance of equipment and machinery; - Storage of materials of unknown type and quality.	TRH, BTEX, PAH Metals, Asbestos, OCPs, PCBs	Medium	- Top-down leaks/spills of oils/fuels onto soil. - Stockpiling of potentially contaminated materials - Leaching of soil contaminants to surface water and groundwater.	- Surface soils - Surface water - Groundwater	- Site users - Onsite surface water – Bangalow Creek located along the eastern boundary of the northern portion of the site, and cross through the eastern side of the southern portion of the site. - Groundwater dependent ecosystems.	- Direct dermal contact with contaminated soil - Ingestion of contaminated soil - Inhalation of asbestos fibres or contaminated soil (as dust) - Leaching of soil contaminants to surface water and/or groundwater - Surface water and groundwater discharge to Bangalow Creek.	- Potentially complete exposure pathway for site users. - Potentially complete exposure pathway for soil contaminants to leach to on-site surface water, if contamination present. - Likely incomplete exposure pathway for soil contaminants to leach to groundwater, given top-down nature of contaminant sources, likely depth of groundwater (>5m bgs), and likely clayey nature of sub-soils.

AEC	COPC	Likelihood of Contamination	Mechanism of Contamination	Potentially Affected Media	Human & Ecological Receptors	Potential Mechanisms of Exposure	Potential & Complete Exposure Pathways
3. Abandoned dwelling on Lot 42: - Potential use of hazardous building materials (i.e. lead paint, asbestos); - Storage of hazardous building materials and waste under and around building; - Potential use of pesticides/insecticides.	Metals, Asbestos, OCPs	Medium	- Top-down flakes/fibres from building materials; - Top-down spray application of pesticides. - Leaching of soil contaminants to surface water and groundwater.	- Surface soils - Surface water - Groundwater	- Site users - Onsite surface water – Bangalow Creek located along the eastern boundary of the northern portion of the site, and cross through the eastern side of the southern portion of the site. - Groundwater dependent ecosystems.	- Direct dermal contact with contaminated soil - Ingestion of contaminated soil - Inhalation of asbestos fibres or contaminated soil (as dust) - Leaching of soil contaminants to surface water and/or groundwater - Surface water and groundwater discharge to Bangalow Creek.	- Potentially complete exposure pathway for site users. - Likely incomplete exposure pathway for soil contaminants to leach to on-site surface water, given distance from dwelling to Bangalow Creek, and localised nature of potential contamination. Likely incomplete exposure pathway for soil contaminants to leach to groundwater, given top-down nature of contaminant sources, likely depth of groundwater (>5m bgs), and likely clayey nature of sub-soils.
4. Fill material: Potential use of contaminated fill	TRH, BTEX, PAH, Metals, Asbestos, OCPs, PCBs	Medium to High	- Import/use of contaminated fill. - Leaching of fill contaminants to surface water and groundwater.	- Fill soils - Soils underlying fill - Surface water - Groundwater	- Site users - Soil biota/plants and transitory wildlife - Onsite surface water – Bangalow Creek located along the eastern boundary of the northern portion of the site, and cross through the eastern side of the southern portion of the site. - Groundwater dependent ecosystems.	- Direct dermal contact with contaminated soil - Ingestion of contaminated soil - Inhalation of asbestos fibres or contaminated soil (as dust) - Leaching of soil contaminants to surface water and/or groundwater - Surface water and groundwater discharge to Bangalow Creek.	- Potentially complete exposure pathway for site users. - Potentially complete exposure pathway for ecological receptors. - Potentially complete exposure pathway for soil contaminants to leach to on-site surface water, if contamination present. - Likely incomplete exposure pathway for soil contaminants to leach to groundwater, given top-down nature of contaminant sources, likely depth of groundwater (>5m bgs), and likely clayey nature of sub-soils.
Notes: TRH = Total Recoverable Hydrocarbons; BTEX = Benzene, Toluene, Ethylbenzene, Xylenes; PAH = Polycyclic Aromatic Hydrocarbons; Metals = arsenic, cadmium, chromium, copper, lead, nickel, zinc and mercury; OCPs = Organochlorine Pesticides; PCBs = Polychlorinated Biphenyls							

5.0 Data Quality Objectives

5.1 Step 1 – State the Problem

There is a potential for soil contamination to exist from past land use. Should contamination exist the site may not be suitable for the intended use without remediation and/or management.

Four Areas of Environmental Concern (AECs) were identified based on the site history and site observations. The AECs are shown in Table 4.1 above.

5.2 Step 2 – Identify the Decisions

The decisions to be made based on the contamination assessment are:

- Is the site characterisation sufficient to provide adequate confidence in the above decisions?
- Are the concentrations of COPCs above the adopted landuse criteria?
- Do potential risks associated with contamination exist, and if so, what are they?
- Will the site require remediation, and if so, what level and type of remediation will be required to make the site suitable for the proposed land use, from a contamination perspective?

5.3 Step 3 – Identify the Inputs to the Decisions

Inputs into the decision are:

- Have samples been collected in the required areas of the site (the identified AECs)?
- Have samples been collected at the required frequencies and adequately represent the conditions on site?
- Is the data set adequate to perform statistical analysis, if required (i.e. calculate 95% UCL)?
- Have the samples been analysed for the COPCs identified?
- Have concentrations exceeding the adopted criteria been reported in the samples?
- If concentrations exceeding adopted criteria have been reported, will these areas require remediation and/or management?

The informational inputs into the decision are:

- Field observations and field screening results;
- Laboratory results (concentrations of contaminants in soil);
- QA/QC documentation and data;
- Adopted assessment criteria (see Section 7); and,
- Relevant NSW EPA endorsed Guidelines.

The media to be sampled and analysed is:

- Soil.

5.4 Step 4 – Define the Study Boundaries

The study boundary is defined laterally as the site boundary, Lot 3 DP612071 and part Lot 42 DP1237817, within the Central Coast local government area. The site is located at 2-4 Brownlee Street, Ourimbah NSW (refer to Figure 1, Appendix A). The site area is about 1.8ha, with the proposed development area about 0.9ha. Vertically, the study boundary will be defined by the depth of soil contamination. It is anticipated the vertical boundary would be a maximum of 3m bgs.

Temporally the study boundary is the dates of sampling, 1 November 2023 and 25 October 2024.

5.5 Step 5 – Develop an Analytical Approach

The analytical approach can be defined as: -

- If the laboratory quality assurance/ quality control data are within the acceptable ranges, the data will be considered suitable for use;
- If the COPCs are reported above the adopted criteria and/or at elevated levels (where no criteria are available) then it will be considered whether further assessment, remediation and/or management measures are required;
- Where practical and/or appropriate, the 95% Upper Confidence Limit (UCL) of the validation samples will be calculated. If the 95% UCL is above the adopted criteria, then it will be considered whether further assessment, remediation and/or management measures are required; and,
- Where concentrations are below the assessment criteria, then no further assessment, remediation and/or management of that contaminant, in that area, in that media, is required. This is provided samples have been collected at the required frequencies (as per NSW EPA guidelines) and adequately represent the conditions on site, if not, additional sampling may be required.

5.6 Step 6 – Specify Acceptable Limits on Decision Errors

There are two types of errors:

- Type 1 – finding that the site is contaminated, when it is not;
- Type 2 – finding that the site is uncontaminated, when it is.

To reduce the potential for errors, the following will be applied:

- Appropriate field sampling methodologies and collection of field data (including sampling frequency);
- Robust QA/QC assessment of field procedures and laboratory data;
- Appropriate sampling and analytical density;
- Use of statistics (i.e. 95% UCL) to assess arithmetic average of COPCs. Use of statistics will also take into account:
 - No sample should report a concentration more than 250% of the adopted criteria; and,
 - The standard deviation of a sample population should not exceed 50% of the adopted criteria.

The adopted criteria are shown in Section 7.

5.7 Step 7 – Optimise the Design for Obtaining Data

The methodologies presented in this report are designed to meet the nominated DQOs. Optimisation of the data collection process will be achieved by:

- Working closely with the analytical laboratories and sampling equipment suppliers so that appropriate procedures and processes are developed and implemented prior to and during the field work and that sampling, handling, and transport to, and processing by, the analytical laboratories is appropriate.
- Conduct sampling in accordance with industry best practice and Standard Operating Procedures (SOPs) for the type of sampling being conducted.

6.0 Field and Laboratory Investigations

6.1 Sampling Plan

The site is about 1.8ha in area, with the proposed development area approximately 0.9ha. The NSW EPA (2022) Sampling Design Part 1 – Application recommends a minimum of 20 sampling locations to characterise a site of 0.9ha, on a square grid with no specific source areas to target.

As part of the DSI the following sampling activities were completed:

- 1 November 2023 - Excavation of 11 test pits (TP01 to TP06 and TP08 to TP12). Soil samples were collected from 8 of the test pits (TP01, TP04, TP05, and TP08 to TP12). Note, proposed TP07 location was inaccessible, and therefore TP07 was not excavated;
- 1 November 2023 - Surface soil samples were collected from 18 locations (SS1 to SS18);
- 25 October 2024 - Excavation of 16 test pits (TP101 to TP116), and collection of soil samples from each test pit; and,
- 25 October 2024- Surface soil sample was collected from one location (SS117). Note, a test pit was proposed in this area, but the area was inaccessible by machine, therefore a surface soil sample was collected.

The sampling locations in relation to the identified AECs is shown in Table 6.1 below. The sampling locations are shown on Figures 4 and 5, Appendix A.

Table 6.1 AECs and Sampling Locations

AEC	Samples Collected 1/11/2023	Samples Collected 25/10/2024
1 – Former Sawmill Main Workshop (~2,000m ²)	TP01, TP04, TP08 to TP09, SS4 to SS6	-
1 – Former Sawmill Oil Store (~6m ²)	SS1 to SS3	TP104
1 – Former Sawmill Office (~40m ²)	Inaccessible	TP101
1 – Former Sawmill Amenities Building (~10m ²)	SS7 to SS9	-

AEC	Samples Collected 1/11/2023	Samples Collected 25/10/2024
1 – Former Covered Timber Storage Rack	SS15	-
1 - Former Sawmill Waste Area (~900m ²)	Inaccessible	TP105 to TP113
1 – Former Sawmill Storage Shed (~20m ²)	Inaccessible	TP103
2 – Former Council Depot (~1,000m ²)	TP05, TP10 to TP12, SS14, SS16 to SS18	-
3 – Dwelling on Lot 42 (240m ²)	SS10 to SS13	-
4 – Potential Use of Fill on Whole Site	Accessible areas covered by sampling listed above	TP102, TP114 to TP116 SS117

6.2 Soil Sampling

On 1 November 2023, 11 test pits (TP01 to TP06, TP08 to TP12) were excavated using a 2.7 tonne excavator, to approximate depths of between 2.8m and 2.9m bgs. Soil samples were collected from test pits TP01, TP04, TP05 and TP08 to TP12 in fill materials and the top of underlying natural materials. The samples were collected directly from the excavator bucket, using a clean pair of nitrile gloves per sample.

On 1 November 2023, 18 surface soil samples (SS1 to SS18) were collected using the excavator. The surface samples were collected directly from the soil loosened by the spade or excavator using a pair of clean disposable nitrile gloves.

On 25 October 2024, 16 test pits (TP101 to TP116) were excavated using a 5 tonne excavator, to approximate depths of between 0.5m and 1.0m bgs. Soil samples were collected from each test pit in fill materials and the top of underlying natural materials. The samples were collected directly from the excavator bucket, using a clean pair of nitrile gloves per sample.

On 25 October 2024, one surface soil sample (SS117) was collected by hand, directly from the soil using a pair of clean disposable nitrile gloves. It is noted that this sample was collected from the creek edge, as the creek bank was eroded up to the boundary of the Council depot (and the site boundary), and the soil was saturated at the time of sampling.

Surface soil samples SS1 to SS18 and fills samples from test pits TP01, TP04, TP05, TP08 to TP12, and TP101 were assessed using the gravimetric method, comprising of collection of a 10L sample, screening through a 6.7mm sieve, and weighing of potential ACM fragments retained on the sieve (if any).

Re-useable sampling equipment was decontaminated between sampling locations using a phosphate free detergent and potable water.

The soil samples were placed into 250mL laboratory supplied glass jars and zip locked bags for laboratory analysis. Each soil sample was placed directly into an ice-chilled esky and remained chilled during fieldwork and transportation to the laboratory.

6.3 Laboratory Analysis

The samples were dispatched to NATA-accredited Eurofins laboratory under chain of custody conditions. Soil samples were selected for analysis based on field observations, and providing representative sampling across the site. The samples were analysed for the following:

AEC	Samples Collected	Analysis
1 – Former Sawmill Main Workshop (~2,000m ²)	TP01, TP04, TP08 to TP09, SS4 to SS6	TRH, BTEX, PAH - 8 primary samples Metals – 8 primary samples Asbestos – 5 primary samples
1 – Former Sawmill Oil Store (~6m ²)	SS1 to SS3, TP104	TRH, BTEX, PAHs – 4 primary samples
1 – Former Sawmill Office (~40m ²)	TP101	Metals, Asbestos – 1 primary sample
1 – Former Sawmill Amenities Building (~10m ²)	SS7 to SS9	Metals – 3 primary samples Asbestos – 2 primary samples
1 – Former Covered Timber Storage Rack	SS15	Metals - 1 primary sample OCPs, PCBs – 1 primary sample
1 - Former Sawmill Waste Area (~900m ²)	TP105 to TP113	TRH, BTEX, PAHs – 13 primary samples Metals - 13 primary samples Asbestos – 8 primary samples OCPs, PCBs – 4 primary samples
1 – Former Sawmill Storage Shed (~20m ²)	TP103	TRH, BTEX, PAHs – 10 primary samples Metals - 10 primary samples Asbestos – 9 primary samples OCPs, PCBs – 6 primary samples
2 – Former Council Depot (~1,000m ²)	TP05, TP10 to TP12, SS14, SS16 to SS18	TRH, BTEX, PAHs – 10 primary samples Metals - 10 primary samples Asbestos – 8 primary samples OCPs, PCBs – 6 primary samples
3 – Dwelling on Lot 42 (240m ²)	SS10 to SS13	Metals – 4 primary samples Asbestos – 4 primary samples
4 – Potential Use of Fill on Whole Site (~1.3ha)	November 2023 - accessible areas covered by sampling listed above	Listed above
	October 2024 - TP102, TP114 to TP116, SS117	TRH, BTEX, PAHs – 5 primary samples Metals - 5 primary samples Asbestos – 4 primary samples

7.0 Investigation Criteria

7.1 Health and Ecological Levels

To assess whether the site was suitable for the proposed development (Food Manufacturing Hub), the laboratory results were compared to the health and ecological investigation levels for soil, presented in the *National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013)*, *NEPC 2013*, Canberra (referred to as ASC NEPM 2013).

ASC NEPM (2013) provides health and ecological investigation and screening levels for different exposure scenarios based on a proposed land use. They are adopted as concentrations of a contaminant above which either further appropriate investigation and/or evaluation will be required, or development of an appropriate management strategy (including remediation).

Health Investigation Levels (HILs) and Health Screening levels (HSLs) are applicable for assessing human health risk via relevant exposure pathways. The HILs were developed for a broad range of metals and organic substances. These are generic to all soil types. The HSLs have been developed for selected petroleum compounds and fractions and are applicable to assessing human health risk via inhalation and direct contact with soil and groundwater. The HSLs depend on specific soil physicochemical properties, building configurations, land use scenarios and the depth that groundwater is encountered.

Based on the proposed site the investigation and screening levels for commercial/industrial land use have been adopted, and are shown in Table 7.5 below.

7.2 Ecological Investigation and Screening Levels

Section 3.5.1 of Schedule 5a of NEPM states that the aim of the EILs is that varying levels of protection will be provided to the following ecological receptors at all sites:

- *'Biota supporting ecological processes including microorganisms and soil invertebrates*
- *Native flora and fauna*
- *Introduced flora and fauna*
- *Transitory or permanent wildlife.'*

Further, NEPM states: *'Commercial and industrial land, particularly in long-established industrial areas, is often heavily contaminated by past activities or fill materials used to level the area. In these cases, jurisdictions may determine that HILs are the most appropriate soil quality criteria and that EILs are not applicable. In many cases, the only generic ecological value for this land use will be 'transitory wildlife'.'* The site has over 100 years of commercial/industrial land use. The proposed development area (~0.9ha) includes buildings and pavements covering the majority of the site. Therefore, there will be very limited access to site soils for flora and fauna.

The remainder of the site will comprise riparian zone and/or vegetated landscape.

Based on the above, Ecological Investigation and Screening Levels (EILs / ESLs) have not been adopted for the development area in the north-west portion of the site. EILs and ESLs for commercial/industrial land use have been adopted, and are shown in Table 7.5 below.

It is noted the ESLs for benzo(a)pyrene (ASC NEPM, 2013) were adopted from Canadian Soil Quality Guidelines (SQGs) presented in Environment Canada (2004), and were noted to have a low-reliability. The ESLs for benzo(a)pyrene in ASC NEPM (2013) were based on a review of Canadian SQGs by Dr Michael Warne, who completed the review in February 2010. Since the completion of Warne (2010) (which are included in the publication of ASC NEPM, 2013), the Canadian SQGs for benzo(a)pyrene were revised later in 2010 (CCME 2010a,b). Therefore,

CRC Care Technical Note 39 assesses the benzo(a)pyrene ESL derivation, and derives a higher reliability ESL for benzo(a)pyrene in the Australian setting. The ESLs for benzo(a)pyrene derived by CRC Care (2017) are 33mg/kg for residential and open space land uses and 172mg/kg for commercial/industrial land uses. These have been considered where benzo(a)pyrene concentrations exceed the ESL, but do not exceed the HIL, to mitigate against unwarranted remediation that is driven by low-reliability ESLs.

7.3 Asbestos Materials in Soil

The assessment of known and suspected asbestos contamination in soil is based on:

- ASC NEPM (2013); and
- WA DoH (2009) *Guidelines of the assessment and management of asbestos contaminated sites in Western Australia*, WA Department of Health and Department of Environment and Conservation.

Schedule B1, Section 4 ASC NEPM (2013) provides guidance on the assessment of both friable and non-friable forms of asbestos in soil. This guidance is based on the WA DoH (2009) Guidelines that presented risk based screening levels for asbestos in soil under various landuse scenarios.

For the purpose of assessing asbestos impacts in soil, three groups are recognised:

- Asbestos Containing Material (ACM) - *which is in sound condition although possibly broken or fragmented and the asbestos is bound in a matrix. This is restricted to material that cannot pass through a 7mm x 7mm sieve;*
- Fibrous asbestos (FA) - *friable asbestos material, such as severely weathered ACM, and asbestos in the form of loose fibrous material such as insulation products;*
- Asbestos fines (AF) - *includes free fibres of asbestos, small fibre bundles and also ACM fragments that pass through a 7mm x 7mm sieve.*

The health screening levels for asbestos in soil for commercial/industrial use have been adopted.

7.4 Management Limits

The purpose of the Management Limits is to 'avoid or minimise' potential effects of petroleum hydrocarbons. NEPM (1999, amended 2013) Schedule B(1) provides these as effects as:

- Formation of observable Light Non-Aqueous Phase Liquid (LNAPL);
- Fire and explosive hazards; and,
- Effects on buried infrastructure e.g. penetration of, or damage to, in-ground services by hydrocarbons.

Management limits were derived by Canada-Wide Standard for Petroleum Hydrocarbons (CWS-PHC) in Soil (2008) where the lowest limiting value for each effect became the Recommended Management Limit. Based on site specific information, the applicability of management limits as soil investigation levels for the site was reviewed, and is discussed further in Table 7.4 below.

Table 7.4 discusses the derivation of the revised management limits. These management limits will be applied to all soils at any depth. As described in the ASC NEPM (2013) the magnitude of an exceedance will be considered in the context of whether the exposure pathways are plausible and whether exposure will result in harm. Depending on the level of the exceedance further qualitative or quantitative risk assessment may be required.

Table 7.4 - Site Specific Applicability of Management Limits

TRH Fraction	Basis of Recommended Management Limits (coarse soils)	Appropriateness of Recommended Management Limits for Adopted Criteria
F1 (C6-C10)	Formation of free phase NAPL 700mg/kg Effects on Workers in Trenches 1,000mg/kg Fire/Explosion Risk 1,400mg/kg	The limiting value of 700mg/kg for formation of free phase NAPL is considered appropriate. The value for effects on workers is not considered relevant as HSLs have been derived for Australian conditions and considered to be more appropriate.
F2 (C10-C16)	Effects on Workers in Trenches 1,000mg/kg Formation of free-phase Total F1 to F3 10,000mg/kg Fire/Explosion Risk 5,200mg/kg	'Effects on Workers in Trenches' is not appropriate for adoption as a criterion. These values are based on occupational exposure limits for gasoline and jet fuel, as there is no relevant acute toxicity endpoints available. CRC Care (2011) has established HSLs for 'Intrusive Maintenance Worker' for both vapour intrusion and direct contact of 'Not Limiting' and 20,000mg/kg respectively. HSLs are considered more appropriate for Australian conditions and the robustness in which they are derived. The limiting value of 5,200mg/kg for explosion risk to intrusive maintenance workers is considered appropriate.
F3 (C16-C34)	Effectiveness of bioremediation 3,500mg/kg Formation of free phase NAPL Total F1 to F3 10,000mg/kg	'Effectiveness of bioremediation' is not appropriate as a validation criteria, rather more of a guide for assessing whether bioremediation may be a viable option. It should be noted that this criterion was developed based on Canadian conditions, where bioremediation may not be as accelerated compared to the generally warmer Australian climate. The limiting value of 10,000mg/kg for formation of free phase NAPL is considered appropriate.
F4 (C34-C40)	Formation of free phase NAPL 10,000mg/kg	The limiting value of 10,000mg/kg for formation of free phase NAPL is considered appropriate.

7.5 Adopted Soil Criteria

The adopted assessment criteria are listed in Table 7.5 below.

Table 7.5: Adopted Soil Assessment Criteria

Contaminant	HIL¹ / HSL^{2A} D	EIL / ESL³ D	Management Limits⁴
Arsenic	3,000	160	-
Cadmium	900	-	-
Chromium VI	3,600	-	-
Chromium III	-	1,200*	-
Copper	240,000	270*	-
Lead	1,500	1,800	-
Nickel	6,000	210*	-
Zinc	400,000	680*	-
Mercury	730	-	-
Benzene	4	95	-
Toluene	NL	135	-
Ethylbenzene	NL	185	-
Xylenes	NL	95	-
Naphthalene	NL	370	-
TRH C6-C10	-	215	700
TRH C6-C10 minus BTEX	310	-	-
TRH >C10-C16	-	170	5200
TRH >C10-C16 minus naphthalene	NL	-	-
TRH >C16-C34	NL	2,500	10,000
TRH >C34-C40	NL	6,600	10,000
Benzo(a)pyrene	-	172	-
Benzo(a)pyrene TEQ	40	-	-
Total PAHs	4,000	-	-
DDD+DDT+DDE	3,600	-	-
DDT	-	640	-

Contaminant	HIL ¹ / HSL ² D	EIL / ESL ³ D	Management Limits ⁴
Aldrin & dieldrin	45	-	-
Chlordane	530	-	-
Endosulfan	2,000	-	-
Endrin	100	-	-
Heptachlor	50	-	-
Hexachlorobenzene	80	-	-
Methoxychlor	2,500	-	-
Mirex	100	-	-
Toxaphene	160	-	-
Total PCBs	8	-	-
Asbestos	Detected	-	-
Bonded ACM %	0.05	-	-
FA and AF %	0.001	-	-
All forms of asbestos	No visible evidence for surface soil (top 10cm)	-	-

Notes:

^ Based on a pH of 7.4, CEC of 8.6meq/100g and clay content of 60% and using Ambient Background Concentration obtained from Olszowy et al (1995) using urban soils, old suburbs with high traffic, 50% percentile.

NL – Not limiting

1 – ASC NEPM (2013) - Health Investigation Levels- HIL D

2 - ASC NEPM - Soil Health Screening Levels for Vapour Intrusion, Commercial/Industrial, Clay 0m to <1m

3 - ASC NEPM (2013) - Ecological Investigation and Screening Levels, Commercial/Industrial, fine texture

4 - ASC NEPM (2013) Management limits for TRH fractions F1-F4 in soil (adjusted as described in Section 7.4, above)

5 – Benzo(a)pyrene ESL derived by CRC CARE (2017)

8.0 Quality Assurance/Quality Control

Sampling activities were undertaken in accordance with normal, industry accepted practices and standards. The assessment of field and laboratory quality assurance / quality control (QA / QC) procedures is provided below, and a data validation report is presented in Appendix D.

In order to assess field quality assurance / quality control (QA/QC) procedures, the following quality control samples were collected and analysed:

QC Sample	Type	Lab	Analysis
T.1.11.23	Triplicate of TP10_0.0-0.2	SGS	TRH, BTEX, PAHs, Metals, OCPs
D.1.11.23	Duplicate of TP10_0.0-0.2	Eurofins	TRH, BTEX, PAHs, Metals, OCPs
D.25.10.24	Duplicate of TP113_0.0-0.1	Eurofins	TRH, BTEX, PAHs, Metals
D2.25.10.24	Duplicate of TP101_0.0-0.1	Eurofins	Metals

Primary and intra lab duplicate samples were analysed by the NATA-accredited Eurofins laboratory. Triplicate samples were analysed by the NATA-accredited SGS laboratory.

Table 7, Appendix B, presents the relative percentage differences (RPDs) between the primary, duplicate and triplicate samples. A review of the Qualtest QA / QC results indicates that RPDs were within the acceptable range with the exception of:

- Duplicate pair TP10_0.0-0.2/D1.11.23 for lead (53%) and zinc (58%);
- Triplicate pair TP10_0.0-0.2/T.1.11.23 for lead (70%) and zinc (76%); and,
- Duplicate pair TP101_0.0-0.1/D2.25.10.24 for lead (64%) and zinc (42%).

These RPDs are considered to be due to the heterogeneous distribution of metal contaminants in surface soils adjacent to buildings, and is not considered to affect the data representativeness and usability. It is noted that low concentrations can exaggerate the percentage differences with respect to small total concentrations, therefore where results for primary and duplicate sample were less than 10 times the LOR, the RPDs have been disregarded.

The laboratory internal QA/QC reports indicated that the appropriate laboratory QA / QC procedures and rates were undertaken for contamination studies, and that:

- Laboratory blank samples were free of contamination;
- Matrix spike recoveries were within the control limits with the exception of a variety of OCPs and zinc in Batch SE256312. For OCPs, the lab quoted code 9 which states *"Recovery failed acceptance criteria due to sample heterogeneity"*. For zinc, the lab quoted code 5 which states *"Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level)"*. Based on this, the recoveries are unlikely to affect the data usability. The matrix spike recoveries could mean that concentrations are theoretically higher or lower than that reported, however as OCPs were reported <LOR, and zinc concentrations were well below the adopted criteria, this does not affect the outcome of the assessment;
- Laboratory duplicate RPDs were recorded within the control limits. For copper the lab quoted code Q15 which states: *"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."* Based on this, the RPD is acceptable;
- Surrogates and laboratory control samples were within the laboratories acceptable range.

Based on the above, and the data validation report in Appendix D, it is considered that the field and laboratory methods for soil sampling are appropriate and that the data obtained is

usable and considered to reasonably represent the concentrations at the sampling points at the time of sampling.

9.0 Results

9.1 Subsurface Conditions

The soils observed during test pitting, respective geotechnical units and surface soils are summarised in Table 9.1, 9.2, and 9.3. below. The borehole logs are presented in Appendix C.

Table 9.1 – Summary of Soil Profile

Unit	Soil Type	Description
1A	FILL – TOPSOIL	Gravelly Clayey SAND / Clayey SAND – fine to coarse grained (mostly fine to medium grained), brown to dark grey-brown, fine to medium grained sub-angular to angular gravel, fines of low plasticity, with some glass, steel, brick, tile, and sticks in places, root affected. Gravelly Silty SAND / Sandy Silty GRAVEL – fine to coarse grained, dark grey to black, fine to coarse grained angular gravel, fines of low plasticity, root affected. Gravelly Sandy CLAY – low to medium plasticity, dark brown, fine to coarse grained angular to sub-angular gravel, root affected.
1B	FILL – OTHER	GRAVEL – fine to coarse grained (mostly medium to coarse grained), angular to sub-angular, brown to dark brown and red-brown with some black, with some fine to coarse grained sand, with some fines of low plasticity, trace possible coal tar. MIXTURE OF SOIL and COBBLES / BOULDERS – Gravelly Sandy CLAY – medium plasticity, pale brown and grey-brown, fine to coarse grained (mostly fine to medium grained) sand, fine to coarse grained angular to sub-angular gravel, cobbles generally up to about 300mm in diameter, root affected. Gravelly CLAY / Gravelly Sandy CLAY – medium to high plasticity, pale grey to pale grey-brown, and pale orange-brown / red-brown, fine to coarse grained (mostly fine to medium grained) sand, fine to coarse grained (mostly medium to coarse grained) angular gravel, trace cobbles. Asphaltic concrete layer (~30mm thick) encountered at TP11 location, and layer of bricks located at TP12.
2	BURIED TOPSOIL	Silty Sandy CLAY – low to medium plasticity (generally low plasticity), dark grey-brown to grey-brown, fine to medium grained (mostly fine grained) sand, weakly cemented in places. Clayey SAND / Sandy CLAY – fine to medium grained (mostly fine grained), dark grey-brown, fines of low plasticity, weakly cemented.

Unit	Soil Type	Description
3A	COLLUVIUM	Silty Sandy CLAY – low to medium plasticity (generally medium plasticity), grey-brown to pale brown, fine to coarse grained (mostly fine grained) sand, weakly cemented in places. Sandy CLAY – medium to high plasticity, orange-brown to pale orange-brown with some pale grey to white, fine grained sand, trace fine to coarse grained angular to sub-angular gravel.
3B	ALLUVIUM	Silty Sandy CLAY / Clayey SAND – low to medium plasticity, grey, fine to medium grained sand. SAND / Clayey SAND – fine to medium grained, brown to grey-brown, fines of low plasticity. CLAY / Sandy CLAY – medium to high plasticity (generally high plasticity), grey with some orange-brown, fine to medium grained sand, trace fine to coarse grained angular to sub-angular gravel.
4	RESIDUAL SOIL	Sandy CLAY – medium to high plasticity, pale grey to white, trace orange-brown, fine to medium grained sand.

Table 9.2 – Summary of Geotechnical Units for Each Test Pit Location

Location	Unit 1A Fill – Topsoil	Unit 1B Fill	Unit 2 Buried Topsoil	Unit 3A Colluvium	Unit 3B Alluvium	Unit 4 Residual
	Depth (m)					
TP01	0.0 – 0.1	0.1-0.4	0.4 – 0.8	0.8 – 1.6	1.6 – 2.8	-
TP02	-	0.0 – 0.6	0.6 – 0.9	0.9 – 2.6	2.6 – 2.8	-
TP03	0.0 – 0.2	-	-	0.2 – 2.0	2.0 – 2.8	-
TP04	0.0 – 0.15	-	-	0.15 – 1.7	1.7 – 2.8	-
TP05	0.0 – 0.3	-	0.3 – 0.85	0.85 – 2.0	2.0 – 2.8	-
TP06	-	0.0 – 0.7	-	0.7 – 1.7	1.7 – 2.8	-
TP08	0.0 – 0.2	-	0.2 – 0.5	0.5 – 1.5	1.5 – 2.8	-
TP09	0.0 – 0.3	-	-	0.3 – 1.6	1.6 – 2.8	-
TP10	0.0 – 0.35	-	-	0.35 – 2.6	-	2.6 – 2.8
TP11	0.0 – 0.05	0.05 – 0.7	-	0.7 – 2.9	-	-
TP12	0.0 – 0.2	0.2 – 0.9	0.9 – 1.3	1.3 – 2.6	2.6 – 2.8	-
TP101	0.0 – 0.2	-	-	-	0.2 – 0.7	-
TP102	-	0.0 – 0.2	-	-	0.2 – 0.7	-
TP103	0.0 – 0.3	-	-	-	0.3 – 0.7	-

Location	Unit 1A Fill – Topsoil	Unit 1B Fill	Unit 2 Buried Topsoil	Unit 3A Colluvium	Unit 3B Alluvium	Unit 4 Residual
	Depth (m)					
TP104	0.0 – 0.3	-	-	-	0.3 – 0.7	-
TP105	-	0.0 – 0.4	-	-	0.4 – 0.7	-
TP106	0.0 – 0.05	0.05 – 0.6	-	-	0.6 – 1.0	-
TP107	0.0 – 0.1	0.1 – 0.8	-	-	0.8 – 1.0	-
TP108	0.0 – 0.2	-	-	0.2 – 0.5	-	-
TP109 (Stockpile)	-	0.0 – 0.8	0.8 – 1.0	-	-	-
TP110	0.0 – 0.2	-	-	0.2 – 0.5	-	-
TP111 (Stockpile)	-	0.0 – 0.8	0.8 – 1.0	-	-	-
TP112	0.0 – 0.4	-	-	0.4 – 0.7	-	-
TP113	0.0 – 0.2	-	-	0.2 – 0.6	-	-
TP114	0.0 – 0.4	-	-	0.4 – 0.8	-	-
TP115	0.0 – 0.2	-	-	-	0.2 – 0.5	-
TP116	0.0 – 0.2	-	-	-	0.2 – 0.5	-

Table 9.3 – Summary of Soils in Surface Samples

Sample ID	Material Description
SS1	Clayey Sandy GRAVEL – fine to coarse grained angular gravel, brown to dark brown with dark grey, fines of low plasticity, fine to coarse grained sand.
SS2 to SS6	Gravelly Clayey SAND – fine to coarse grained, brown to dark brown, fines of low plasticity, fine to coarse grained angular gravel, trace glass, plastic, metal.
SS7 to SS9, SS14	Clayey Gravelly SAND – fine to coarse grained, dark brown, fine to coarse grained sub-rounded to sub-angular gravel, fines of low plasticity.
SS10 to SS11, SS16 to SS18	Gravelly Clayey SAND – fine to coarse grained, pale brown to brown with some pale orange, fines of low plasticity, fine to medium grained sub-rounded to sub-angular gravel.
SS12 to SS13	Sandy CLAY – low to medium plasticity, dark brown to brown, fine to coarse grained sand, with some fine to medium grained angular gravel.
SS15	Gravelly Sandy CLAY – low to medium plasticity, orange brown, fine to coarse grained sand, fine to coarse grained sub-rounded gravel.
SS117	Silt/Organic Matter – brown, saturated.

No odours or stained soils were observed during sampling. Anthropogenic materials were observed during sampling as described below:

- TP04 0.0-0.15m - trace fragments of bricks, glass, metal and plastic materials
- TP10 0.0-0.35m - trace fragments of bricks, glass, metal and plastic materials
- SS2 to SS6 - trace fragments of bricks, glass, metal and plastic materials
- TP12 0.5m - a layer of bricks
- TP101 0.0-0.2 – glass, plastic, PVC, timber. Potential asbestos containing material (ACM) was observed at TP101 at the surface, in the form of bonded fibre cement that could not be crushed with hand pressure. The gravimetric testing results (%w/w ACM) are presented in Table 3, Appendix B.
- TP103 0.0-0.3 – trace fragments of timber, plastic, brick
- TP104 0.0-0.3 – trace fragments of timber, plastic, brick
- TP106 0.05-0.6 – trace fragments of charcoal, brick, timber
- TP107 0.1-0.8 – trace fragments of charcoal, brick, timber
- TP108 0.0-0.2 – trace fragments of glass, brick
- TP109 0.0-0.8 – trace fragments of timber, metal, charcoal, glass
- TP111 0.0-0.8 – trace fragments of timber, metal, glass, charcoal
- TP114 0.0-0.4 – trace fragments of timber, metal

9.2 Laboratory Results

Soil analytical results are summarised in Tables 1 to 3, Appendix B. The laboratory analytical reports are also included in Appendix E.

The soil laboratory results were compared to the investigation levels described in Section 7. The analytical results reported concentrations of contaminants below the adopted criteria, with the exception of:

- ACM was visible on the site surface at location TP101_0.0-0.1m, below the adopted HSL. ASC NEPM (2013) states “no visible evidence for surface soil (top 10cm)” is permitted for all types of asbestos. The ACM comprised chrysotile asbestos in bonded fibre cement fragments that could not be crushed by hand pressure (non-friable);
- Copper exceeded the EIL (270mg/kg) in sample TP111_0.0-0.1m (2,300mg/kg); and,
- Zinc exceeded the EIL (680mg/kg) in sample TP108_0.0-0.1m (700mg/kg).

For concentrations of zinc exceeding the adopted investigation level, the 95% Upper Confidence Limits (UCLs) of the average concentrations were calculated. Calculations used ProUCL in accordance with the procedures discussed in ASC NEPM (2013) Schedule B2 Section 13.

NEPM (2013) Schedule B1, Section 3.2.1 states that:

- “At the very least, the maximum and 95%UCL of the arithmetic mean contaminant concentration should be compared to the relevant Tier 1 screening criteria”
- “The implications of localised elevated values (hotspots) should also be considered. The results should also meet the following criteria:
 - The standard deviation of the results should be less than 50% of the relevant investigation or screening level, and
 - No single value should exceed 250% of the relevant investigation or screening level.”

The results for zinc in the waste area (TP05 to TP113) were used in the calculation. The 95% UCL was not calculated for copper, as the exceedance is a hotspot (>2.5 times the criteria).

Calculation sheets for data statistics, including average, standard deviation and 95%UCL of the average, are attached in Appendix B. ProUCL calculates the UCL comparing a number of different methods, including normal distribution, lognormal distribution, gamma distribution and nonparametric. ProUCL then recommends an appropriate method for the data set.

The 95% UCL calculations showed:

Parameter	Zinc
No. of samples	11
Average	176.3
Standard Deviation	193.3
95% UCL	281.9
EIL (mg/kg)	680

Based on the above, the 95% UCL of the zinc results were below adopted criteria.

10.0 Discussion

Copper was identified above the EIL in sample TP111_0.0-0.1m. TP111 was located in the former sawmill waste area, where test pits encountered timber, bricks and metals, and the copper is likely due to a fragment of metal and is considered to be localised. The waste area is largely located within the riparian zone and vegetated areas of the proposed development, which are densely vegetated and no signs of vegetation stress were observed. These areas are not proposed to be developed, or excavated, with the only activity in these areas for the proposed development comprising clearing of weeds.

Based on this, it is considered that the copper does not pose a risk to ecological receptors. In addition, it is considered that remediation of the copper would pose a net adverse environmental impact, as it would require clearing of vegetation, and excavation and disposal of soils to landfill.

11.0 Conceptual Site Model

Based on the results of the detailed site investigation, including sampling and analysis, carried out on the site, the Conceptual Site Model (CSM) has been updated and presented in Table 10.1.

Table 10.1 – Updated Conceptual Site Model Following Assessment

AEC	COPC	Mechanism of Contamination	Potentially Affected Media	Human & Ecological Receptors	Potential mechanisms of exposure	Sampling Completed	Potential & Complete Exposure Pathways
1A. Former sawmill and recycling depot on Lot 3: - Main workshop area – use of oils/fuels in machinery; - Former oil store – storage of oils; - Former sawmill storage shed.	TRH, BTEX, PAH	- Top-down leaks/spills of oils/fuels onto soil. - Leaching of soil contaminants to surface water and groundwater.	- Soils - Surface water - Groundwater	- Site usersSurface water – Bangalow Creek located along the eastern boundary of the site. - Groundwater dependent ecosystems.	- Direct dermal contact with contaminated soil - Ingestion of contaminated soil - Inhalation of contaminated soil (as dust) - Inhalation of hydrocarbon vapours - Leaching of soil contaminants to surface water and/or groundwater - Surface water and groundwater discharge to Bangalow Creek	TP01, TP04, TP08 to TP09, TP103 to TP104 SS1 to SS6	- Incomplete exposure pathway for site users, as no contamination identified. - Incomplete exposure pathway for soil contaminants to leach to on-site surface water, as no contamination identified. - Incomplete exposure pathway for soil contaminants to leach to groundwater, as no contamination identified, likely depth of groundwater (>5m bgs), and likely clayey nature of sub-soils.
1B. Former sawmill and recycling depot on Lot 3: Former office and amenities buildings, and former storage shed – use of ACM, potential for lead paints.	Metals, Asbestos	- Top-down flakes of paint/metals from office building. - Leaching of soil contaminants to surface water and groundwater.	- Soils - Surface water - Groundwater	- Site usersSurface water – Bangalow Creek located along the eastern boundary of the site. - Groundwater dependent ecosystems.	- Direct dermal contact with contaminated soil - Ingestion of contaminated soil - Inhalation of asbestos fibres or contaminated soil (as dust) - Leaching of soil contaminants to surface water and/or groundwater - Surface water and groundwater discharge to Bangalow Creek	TP101, TP103	- Complete exposure pathway for site users due to ACM fragments present on site surface. - Incomplete exposure pathway for soil contaminants to leach to on-site surface water, as no contamination identified. - Incomplete exposure pathway for soil contaminants to leach to groundwater, as no contamination identified, likely depth of groundwater (>5m bgs), and likely clayey nature of sub-soils.

AEC	COPC	Mechanism of Contamination	Potentially Affected Media	Human & Ecological Receptors	Potential mechanisms of exposure	Sampling Completed	Potential & Complete Exposure Pathways
1C. Former sawmill and recycling depot on Lot 3: - Waste area – disposal of waste timber, and potentially other wastes; - Storage of materials of unknown quality for recycling, particularly in eastern portion of Lot 3.	TRH, BTEX, PAH Metals, Asbestos	- Leaks/spills of oils/fuels. - Flakes of paint/metals. - Leaching of soil contaminants to surface water and groundwater.	- Soils - Surface water - Groundwater	- Site users - Soil biota/plants and transitory wildlife - Surface water – Bangalow Creek located along the eastern boundary of the site. - Groundwater dependent ecosystems.	- Direct dermal contact with contaminated soil - Ingestion of contaminated soil - Inhalation of asbestos fibres or contaminated soil (as dust) - Inhalation of hydrocarbon vapours - Leaching of soil contaminants to surface water and/or groundwater - Surface water and groundwater discharge to Bangalow Creek	TP05 to TP113	- Incomplete exposure pathway for site users, as no contamination identified. - Likely incomplete exposure pathway for ecological receptors, as copper exceeding the EILs is localised, and no signs of vegetation stress. Exceedance doesn't warrant remediation, as discussed in Section 10. - Incomplete exposure pathway for soil contaminants to leach to on-site surface water, as copper exceeding the EILs is localised, as discussed in Section 10. - Incomplete exposure pathway for soil contaminants to leach to groundwater, as contamination source is top-down, likely depth of groundwater (>5m bgs), and likely clayey nature of sub-soils.
2. Former Council depot on Lot 42: - Storage and maintenance of equipment and machinery; - Storage of materials of unknown type and quality.	TRH, BTEX, PAH Metals, Asbestos, OCPs, PCBs	- Top-down leaks/spills of oils/fuels onto soil. - Stockpiling of potentially contaminated materials. - Leaching of soil contaminants to surface water and groundwater.	- Soils - Surface water - Groundwater	- Site users - Surface water – Bangalow Creek located along the eastern boundary of the site. - Groundwater dependent ecosystems.	- Direct dermal contact with contaminated soil - Ingestion of contaminated soil - Inhalation of asbestos fibres or contaminated soil (as dust) - Inhalation of hydrocarbon vapours - Leaching of soil contaminants to surface water and/or groundwater - Surface water and groundwater discharge to Bangalow Creek	TP05, TP10 to TP12, SS14, SS16 to SS18	- Incomplete exposure pathway for site users, as no contamination identified. - Incomplete exposure pathway for Bangalow Creek, as no contamination identified to date. - Incomplete exposure pathway for soil contaminants to leach to groundwater, as no contamination identified.

AEC	COPC	Mechanism of Contamination	Potentially Affected Media	Human & Ecological Receptors	Potential mechanisms of exposure	Sampling Completed	Potential & Complete Exposure Pathways
3. Abandoned dwelling on Lot 42: - Potential use of hazardous building materials (i.e. lead paint, asbestos); - Potential use of pesticides/insecticides.	Metals, Asbestos, OCPs	- Top-down flakes/fibres from building materials. - Top-down spray application of pesticides. - Leaching of soil contaminants to surface water and groundwater.	- Surface soils - Surface water - Groundwater	- Site users - Surface water – Bangalow Creek located along the eastern boundary of the site. - Groundwater dependent ecosystems	- Direct dermal contact with contaminated soil - Ingestion of contaminated soil - Inhalation of asbestos fibres or contaminated soil (as dust) - Leaching of soil contaminants to surface water and/or groundwater - Surface water and groundwater discharge to Bangalow Creek.	SS10 to SS13	- Incomplete exposure pathway for site users, as no contamination identified. - Incomplete exposure pathway for Bangalow Creek, as no contamination identified to date. - Incomplete exposure pathway for soil contaminants to leach to groundwater, as no contamination identified.
4. Fill material: Potential use of contaminated fill	TRH, BTEX, PAH, Metals, Asbestos, OCPs, PCBs	- Import/use of contaminated fill. - Leaching of fill contaminants to surface water and groundwater.	- Fill Soils - Underlying Soils - Surface water - Groundwater			TP01 to TP06, TP08 to TP12, TP102, TP114 to TP116 SS1 to SS18, SS117	- Incomplete exposure pathway for site users, as no contamination identified. - Incomplete exposure pathway for Bangalow Creek, as no contamination identified. - Incomplete exposure pathway for soil contaminants to leach to groundwater, as no contamination identified, top-down nature of potential contaminant sources (including in accessible areas), likely depth of groundwater (>5m bgs), and clayey nature of sub-soils.

12.0 Conclusions and Recommendations

Based on the results of the DSI, it is considered the site can be made suitable for the proposed development, provided the following recommendations are implemented:

- Preparation and implementation of a Remediation Action Plan (RAP) for remediation of the identified ACM contamination.
- Preparation and implementation of an Asbestos Management and Removal Control Plan (AMRCP) would be required for the handling and disposal of ACM or ACM impacted soils.
- Preparation and implementation of an Unexpected Finds Procedure. It is recommended that an environmental scientist is present during vegetation clearing and excavations for the proposed detention basin and associated drainage lines.

Provided the recommendations made within this report are implemented, it is considered that the site could be rendered suitable, from a contamination point of view, for the proposed Manufacturing Food Hub development.

This report was prepared in general accordance with the relevant sections of the NSW EPA (2020) Guidelines for Consultants Reporting on Contaminated Land and the National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013), NEPC 2013, Canberra (referred to as ASC NEPM 2013). This report comprises a stage 2 detailed site investigation as described by State Environmental Planning Policy (Resilience and Hazards) 2021 Chapter 4.

13.0 Limitations

This report has been prepared by Qualtest for Central Coast Industry Connect Limited based on the objectives and scope of work list in Sections 1.1 and 1.2. No warranty, expressed or implied, is made as to the information and professional advice included in this report. Anyone using this document does so at their own risk and should satisfy themselves concerning its applicability and, where necessary, should seek expert advice in relation to their particular situation.

The opinions, conclusions and recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. Qualtest has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

In preparing this report Qualtest has relied on information contained in searches of government websites and has not independently verified or checked the data contained on these websites.

In preparing this report, current guidelines for assessment and management of contaminated land were followed. The conclusions reached in this report are dependent on the limitations inherent in all subsurface investigations where horizontal and vertical variation in contaminant concentrations can occur. No subsurface assessment can accurately predict the contaminant concentration at all points.

Site conditions may change after the date of this Report. Qualtest does not accept responsibility arising from, or in connection with, any change to the site conditions.

14.0 References

NSW EPA (2020) Guidelines for Consultants Reporting on Contaminated Land.

NEPC (2013) National Environment Protection (Assessment of Site Contamination) Measure 1999 (April 2013), Canberra (ASC NEPM 2013).

NSW EPA (2022) Sampling Design Part 1 – Application, Contaminated Land Guidelines

WA DoH (2009) Guidelines for the assessment and management of asbestos contaminated sites in Western Australia, WA Department of Health and Department of Environment and Conservation

WA DoH (2021) Guidelines for the Assessment, Remediation and Management of Asbestos Contaminated Sites in Western Australia, WA Department of Health and Department of Environment and Conservation

SEPP (Resilience and Hazards) 2021, Chapter 4

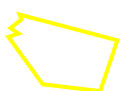
Qualtest (2023) Preliminary Site Investigation, ref: NEW23P-0208-AA dated 24 November 2023

APPENDIX A:

Figures



LEGEND:



Site Location

Image obtained from Sixmpas

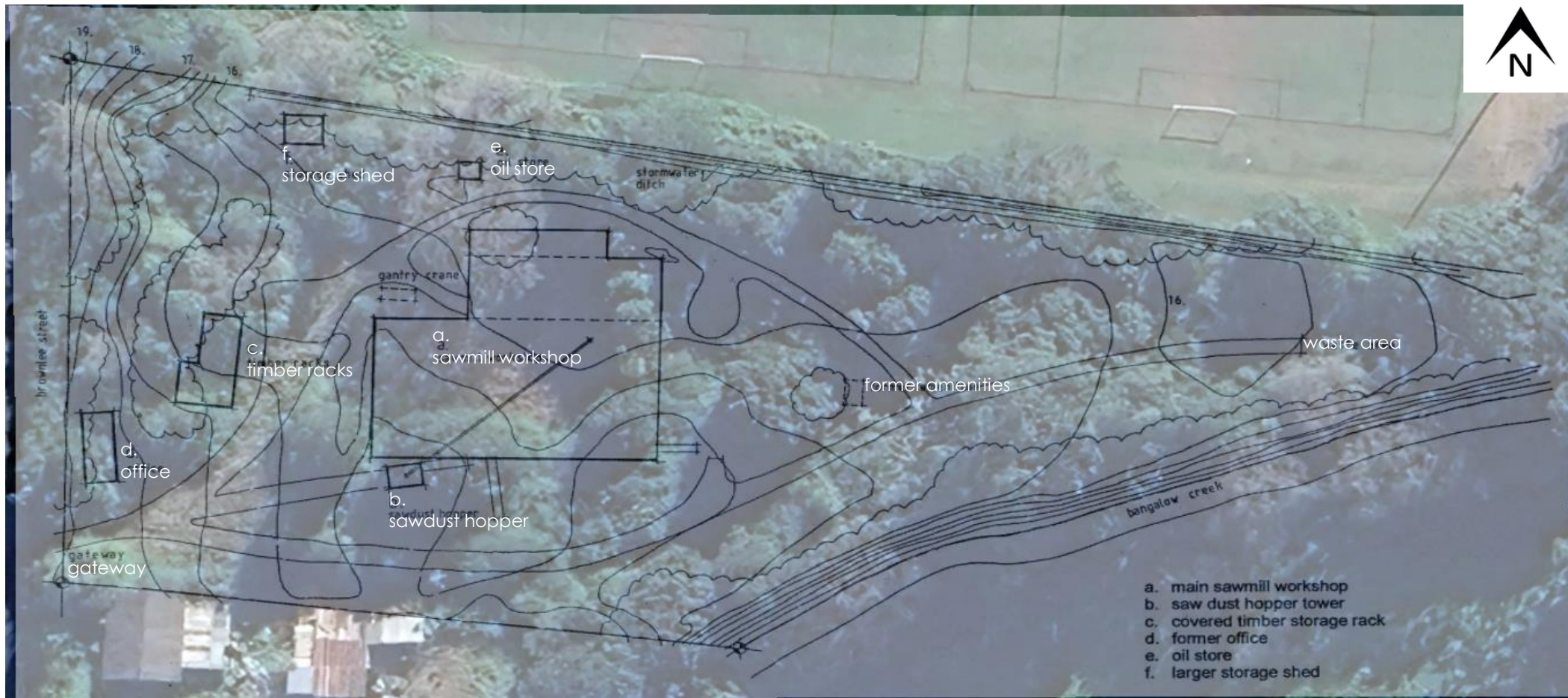


Client:	Central Coast Industry Connect Pty Ltd	Drawing No:	FIGURE 1
Project:	Detailed Site Investigation	Project No:	NEW23P-0208-ABv2
Location:	2-4 Brownlee Street, Ourimbah	Scale:	N.T.S.
Title:	Site Location Plan	Date:	29/10/2024



Image sourced from Nearmaps

Client:	Central Coast Industry Connect Pty Ltd	Drawing No:	FIGURE 2
Project:	Detailed Site Investigation	Project No:	NEW23P-0208-ABv2
Location:	2-4 Brownlee Street, Ourimbah	Scale:	N.T.S.
Title:	Current Site Features Plan (2023)	Date:	29/10/2024



Sawmill Building Footprints plan (Ecotecture, 2002)

Client:	Central Coast Industry Connect Pty Ltd	Drawing No:	FIGURE 3
Project:	Detailed Site Investigation	Project No:	NEW23P-0208-ABv2
Location:	2-4 Brownlee Street, Ourimbah	Scale:	N.T.S.
Title:	Sawmill Building Footprints Plan Overlaid on Google Earth Image	Date:	8/11/2022



LEGEND:

- Approx. Surface Sample Location (1/11/2023)
- Approx. Testpit Location (1/11/2023)
- Approx. Testpit Location (25/10/2024)
- Approximate Site Boundary

Image sourced from Nearmaps

Client:	Central Coast Industry Connect Pty Ltd	Drawing No:	FIGURE 4A
Project:	Detailed Site Investigation	Project No:	NEW23P-0208-ABv2
Location:	2-4 Brownlee Street, Ourimbah	Scale:	N.T.S.
Title:	Sample Plan - Northern Portion	Date:	29/10/2024



LEGEND:

- Approx. Surface Sample Location (25/10/2024)
- Approx. Testpit Location (25/10/2024)
- Approximate Site Boundary

Image sourced from Nearmaps

Client:	Central Coast Industry Connect Pty Ltd	Drawing No:	FIGURE 4B
Project:	Detailed Site Investigation	Project No:	NEW23P-0208-ABv2
Location:	2-4 Brownlee Street, Ourimbah	Scale:	N.T.S.
Title:	Sample Plan - Southern Portion	Date:	29/10/2024

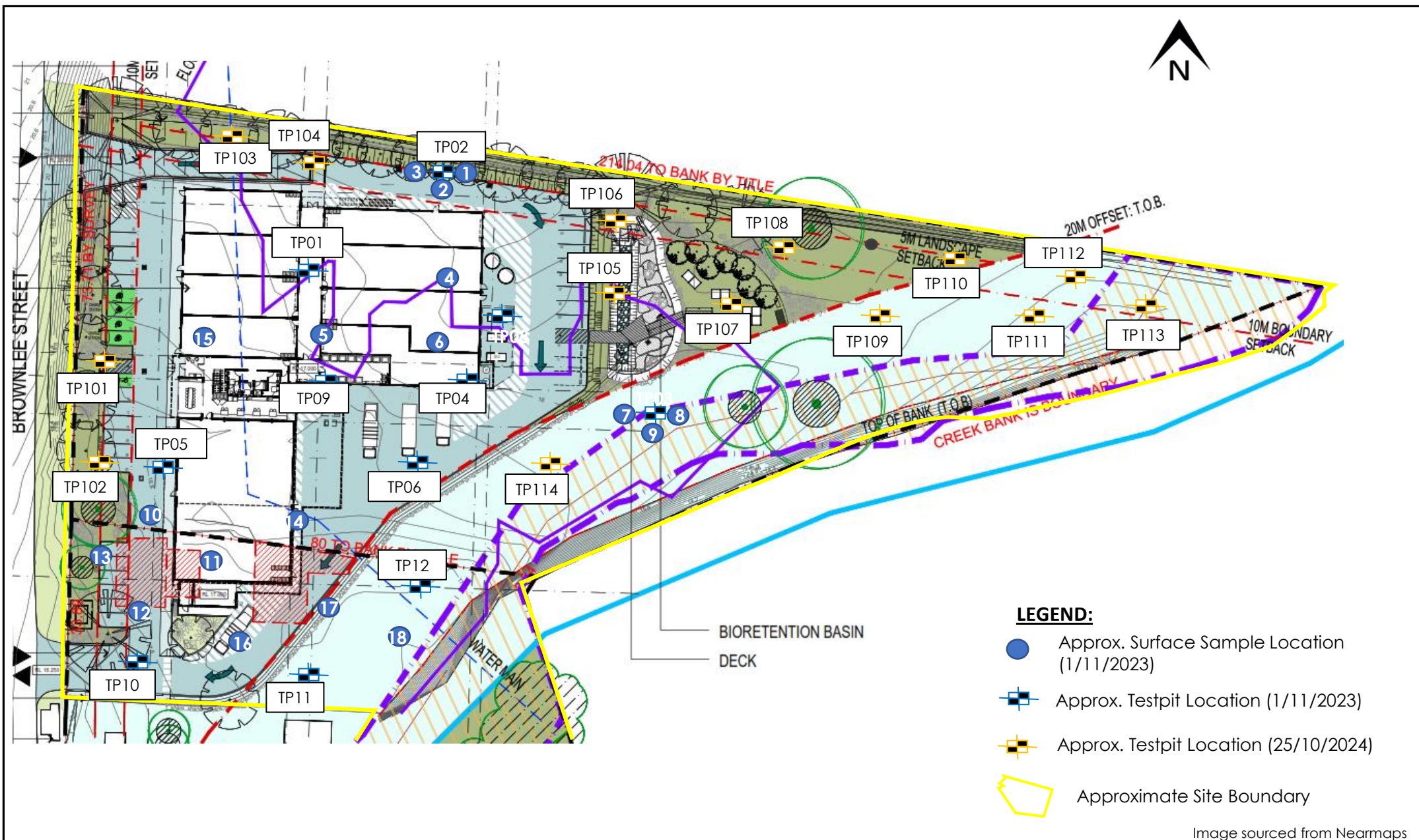


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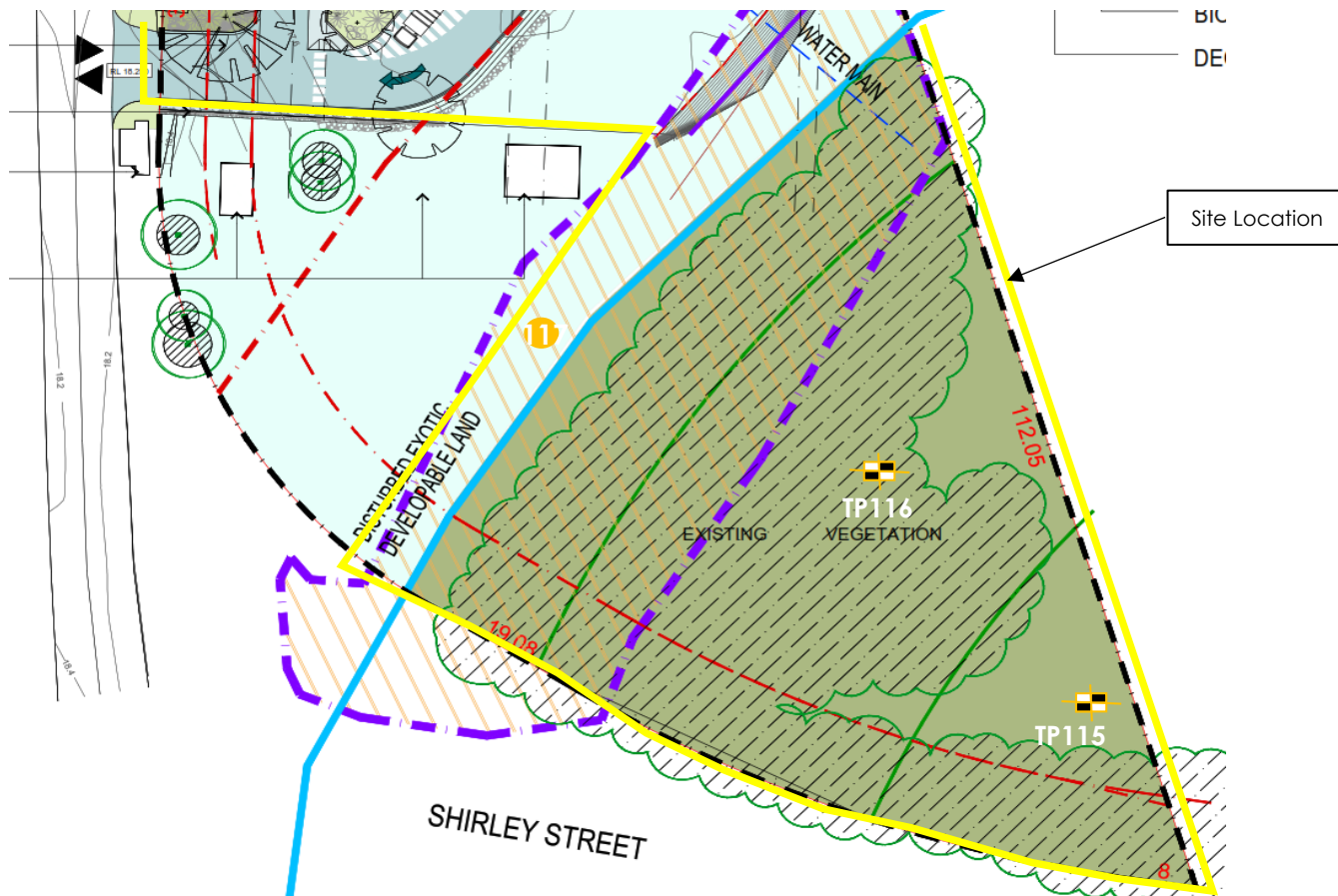
- Approx. Surface Sample Location (1/11/2023)
- ⊠ Approx. Testpit Location (1/11/2023)
- ⊠ Approx. Testpit Location (25/10/2024)
- ⬡ Approximate Site Boundary

Image sourced from Nearmaps

Client:	Central Coast Industry Connect Pty Ltd	Drawing No:	FIGURE 5
Project:	Detailed Site Investigation	Project No:	NEW23P-0208-ABv2
Location:	2-4 Brownlee Street, Ourimbah	Scale:	N.T.S.
Title:	Identified Contamination	Date:	29/10/2024



Client:	Central Coast Industry Connect Pty Ltd	Drawing No:	FIGURE 4A
Project:	Detailed Site Investigation	Project No:	NEW23P-0208-ABv2
Location:	2-4 Brownlee Street, Ourimbah	Scale:	N.T.S.
Title:	Sample Plan Overlaid on Development Layout - Northern Portion	Date:	21/11/2024

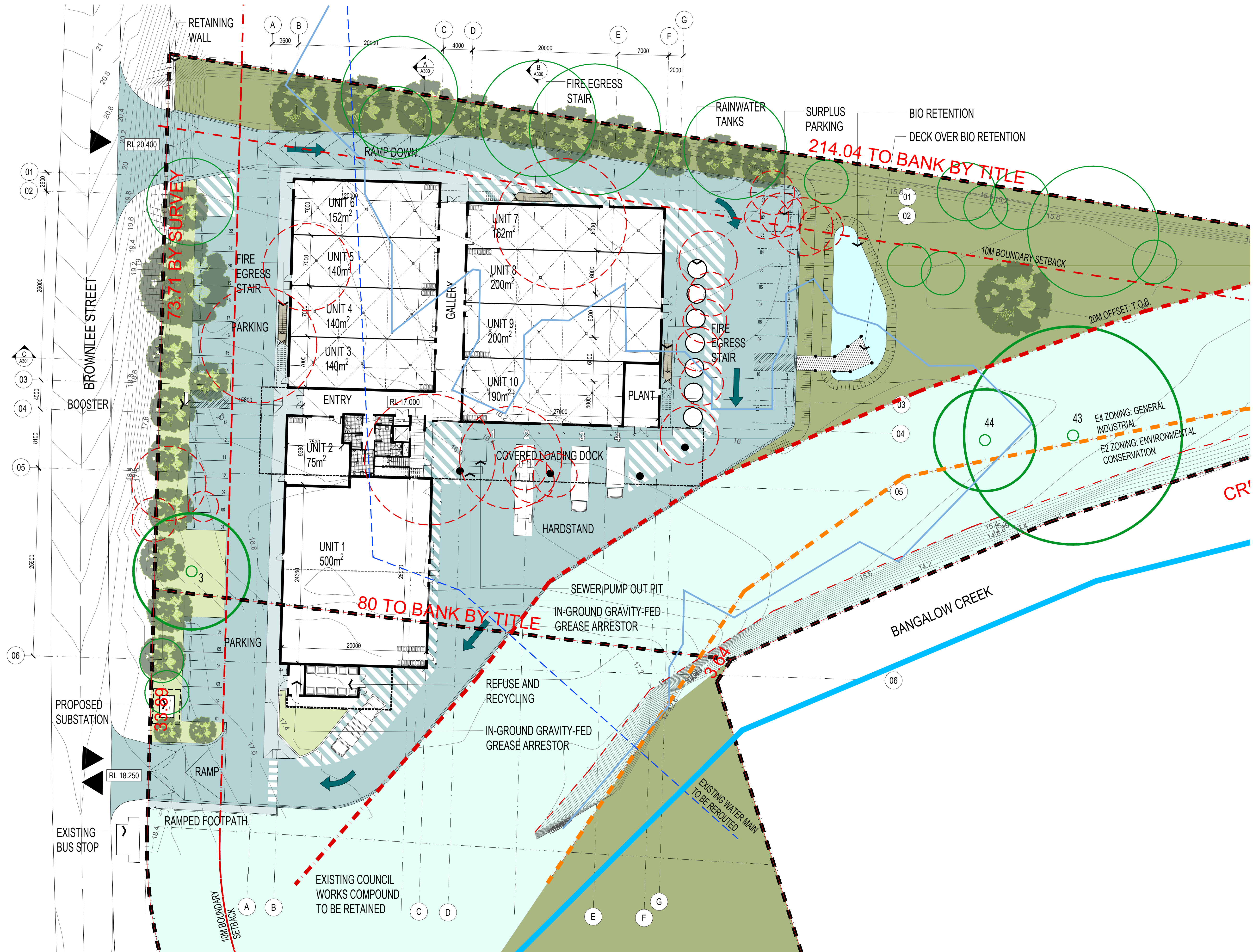


LEGEND:

- Approx. Surface Sample Location (25/10/2024)
- ⊠ Approx. Testpit Location (25/10/2024)
- ⬡ Approximate Site Boundary

Image sourced from Nearmaps

Client:	Central Coast Industry Connect Pty Ltd	Drawing No:	FIGURE 6B
Project:	Detailed Site Investigation	Project No:	NEW23P-0208-ABv2
Location:	2-4 Brownlee Street, Ourimbah	Scale:	N.T.S.
Title:	Sample Plan Overlaid on Development Layout - Southern Portion	Date:	21/11/2024



- KEY
- SITE BOUNDARY
 - BOUNDARY SETBACK
 - ZONING BOUNDARY
 - FLOOD EXTENTS 1 IN 100 YEARS
 - EXISTING WATER MAIN
 - RELOCATED WATER MAIN
 - 20M RIPARIAN ZONE: TOP OF BANK OFFSET
 - HARDSTAND 3334 sqm
 - SERVICES 1837 sqm
 - SERVICES ACCESS 48 sqm
 - LANDSCAPE
 - EXISTING EXOTIC VEGETATION
 - 20M RIPARIAN ZONE: REFER LANDSCAPE ARCHITECTS DETAIL
 - 20M TOP OF BANK OFFSET
 - EXISTING EXOTIC TREES TO BE KEPT
 - EXISTING EXOTIC TREES TO BE REMOVED

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03	23/12/12	CONSULTANT ISSUE
02	23/12/11	CONSULTANT ISSUE
01	23/12/07	CLIENT ISSUE
ISSUE	DATE	AMENDMENTS



CLIENT
**CENTRAL COAST
INDUSTRY CONNECT LTD**
LOOP ROAD, OURIMBAH NSW 2258

PROJECT
**FUTURE FOOD
MANUFACTURING HUB**
2 & 4 BROWNLEE STREET, OURIMBAH NSW 2258

TITLE
GROUND FLOOR PLAN

SCALE 1:250 @ A1
APPROVED PG
DRAWN LP
CHECKED PG
DATE NOV 2023
STATUS DA

PROJECT NUMBER
23031

DRAWING NUMBER
A100

ISSUE
03



APPENDIX B:

Tables

Table 1 - Soil Analytical Results - TRH, BTEX, PAH, Metals
2-4 Brownlee Street, Ourimbah NSW



					Field ID	TP01 0.0-0.2	TP01 0.4-0.5	TP04 0.0-0.2	TP08 0.0-0.2	TP09 0.0-0.2	SS4	SS5	SS6	SS1	SS2	SS3	TP104 0.0-0.1	SS7	SS8	SS9
					Date	1/011/2023	1/11/2023	1/11/2023	1/11/2023	1/11/2023	1/11/2023	1/11/2023	1/11/2023	1/11/2023	1/11/2023	1/11/2023	25/10/2024	1/11/2023	1/11/2023	1/11/2023
					AEC	1. Former Sawmill Main Workshop								1. Former Sawmill Oil Store				1. Former Amenities Building		
Analytes		Units	LOR	HIL/HSL D ¹	Mgmt Limits															
Metals	Arsenic	mg/kg	2	3000		14	< 2	5.8	4	7.5	23	10	3	-	-	-	-	6.7	9.2	4.8
	Cadmium	mg/kg	0.4	900		< 0.4	< 0.4	1.4	< 0.4	0.4	1	1.2	0.6	-	-	-	-	< 0.4	< 0.4	< 0.4
	Chromium	mg/kg	5	3600		51	10	19	21	16	23	33	11	-	-	-	-	12	14	12
	Copper	mg/kg	5	240000		17	6.6	100	44	55	62	41	39	-	-	-	-	15	46	19
	Lead	mg/kg	5	1500		57	15	90	48	68	140	320	74	-	-	-	-	24	30	19
	Mercury	mg/kg	0.1	730		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-	-	-	-	< 0.1	< 0.1	< 0.1
	Nickel	mg/kg	5	6000		< 5	< 5	16	15	11	24	15	6.5	-	-	-	-	7.9	14	7.5
	Zinc	mg/kg	5	400000		120	24	1300	320	800	1000	2500	320	-	-	-	-	67	95	73
PAHs	Acenaphthene	mg/kg	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-
	Acenaphthylene	mg/kg	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-
	Anthracene	mg/kg	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-
	Benz(a)anthracene	mg/kg	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.7	-	-
	Benzo(a)pyrene	mg/kg	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.1	-	-
	Benzo(a)pyrene TEQ (med bound)	mg/kg	0.6	40		0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.6	0.6	0.6	0.6	1.7	-	-	-
	Benzo(b&j)fluoranthene	mg/kg	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.8	< 0.5	< 0.5	< 0.5	< 0.5	1	-	-	-
	Benzo(g,h,i)perylene	mg/kg	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.8	-	-	-
	Benzo(k)fluoranthene	mg/kg	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.8	< 0.5	< 0.5	< 0.5	< 0.5	1.2	-	-	-
	Chrysene	mg/kg	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.2	< 0.5	< 0.5	< 0.5	< 0.5	0.9	-	-	-
	Dibenz(a,h)anthracene	mg/kg	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-
	Fluoranthene	mg/kg	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1	< 0.5	< 0.5	< 0.5	< 0.5	1.4	-	-	-
	Fluorene	mg/kg	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-
	Indeno(1.2.3-cd)pyrene	mg/kg	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-
	Naphthalene	mg/kg	0.5	NL		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-
	Phenanthrene	mg/kg	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-
	Pyrene	mg/kg	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	1.3	< 0.5	< 0.5	< 0.5	< 0.5	1.4	-	-	-
	Total PAH	mg/kg	0.5	4000		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	5.1	< 0.5	< 0.5	< 0.5	< 0.5	8.5	-	-	-
BTEX	Benzene	mg/kg	0.1	4		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-	-	-
	Toluene	mg/kg	0.1	NL		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-	-	-
	Ethylbenzene	mg/kg	0.1	NL		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	-	-	-
	Xylenes - Total	mg/kg	0.3	NL		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	-	-	-
TRH	Naphthalene	mg/kg	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	-	-	-
	TRH C6-C10	mg/kg	20		700	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	-	-	-
	TRH C6-C10 less BTEX (F1)	mg/kg	20	310		< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	-	-	-
	TRH >C10-C16	mg/kg	50		5200	69	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	-	-	-
	TRH >C10-C16 less Naphthalene (F2)	mg/kg	50	NL		69	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	-	-	-
	TRH >C16-C34	mg/kg	100		10000	3900	120	950	310	210	210	170	< 100	200	250	200	100	-	-	-
	TRH >C34-C40	mg/kg	100		10000	1200	< 100	500	220	< 100	< 100	< 100	< 100	150	120	150	< 100	-	-	-

- Notes
- NL Not limiting
 - Result Concentration exceeds adopted health investigation/screening level
 - Result Concentration exceeds adopted management limits

¹ ASC NEPM (2013) Table 1A(1): Health Investigation Levels (HILs) commercial/industrial
² ASC NEPM (2013) Soil Health Screening Levels for Vapour Intrusion, Commercial/Industrial, Clay 0m to <1m



					Field ID	SS15	TP101 0.0-0.1	TP102 0.0-0.1	TP114 0.0-0.1	TP115 0.0-0.1	TP116 0.0-0.1	SS117	TP103 0.0-0.1	TP105 0.0-0.1	TP106 0.0-0.1	TP107 0.0-0.1	TP107 0.4-0.5	TP107 0.8-0.9	TP108 0.0-0.1	TP109 0.0-0.1
					Date	1/11/2023	25/10/2025	25/10/2025	25/10/2025	25/10/2025	25/10/2025	25/10/2025	25/10/2024	25/10/2024	25/10/2024	25/10/2024	25/10/2024	25/10/2024	25/10/2024	25/10/2024
					AEC	1. Timber Storage Rack	1. Office	1. Site Coverage / Potential Fill					1. Storage Shed	1. Waste Area						
Analytes		Units	LOR	HIL/HSL D ¹	Mgmt Limits															
Metals	Arsenic	mg/kg	2	3000		11	4.4	4.1	4.5	< 2	2.1	6	6.7	< 2	5.2	4.4	3.6	< 2	5.6	5.1
	Cadmium	mg/kg	0.4	900		< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	0.8	< 0.4	1.1	< 0.4	< 0.4	< 0.4	1.5	< 0.4
	Chromium	mg/kg	5	3600		69	18	22	14	5.8	6	12	15	< 5	17	12	11	6.4	18	20
	Copper	mg/kg	5	240000		19	15	16	30	15	14	22	61	8.7	28	25	17	6.7	48	27
	Lead	mg/kg	5	1500		31	160	20	35	11	12	24	75	20	39	26	26	37	160	33
	Mercury	mg/kg	0.1	730		< 0.1	0.2	< 0.1	0.1	< 0.1	0.1	< 0.1	0.1	< 0.1	0.1	0.1	< 0.1	< 0.1	0.1	< 0.1
	Nickel	mg/kg	5	6000		9	< 5	13	20	< 5	< 5	8.1	9	< 5	15	8.1	< 5	< 5	14	7.6
	Zinc	mg/kg	5	400000		340	780	70	240	15	12	67	850	310	130	150	49	34	700	110
PAHs	Acenaphthene	mg/kg	0.5			-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Acenaphthylene	mg/kg	0.5			-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Anthracene	mg/kg	0.5			-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Benz(a)anthracene	mg/kg	0.5			-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Benzo(a)pyrene	mg/kg	0.5			-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Benzo(a)pyrene TEQ (med bound)	mg/kg	0.6	40		-	-	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
	Benzo(b&j)fluoranthene	mg/kg	0.5			-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Benzo(g,h,i)perylene	mg/kg	0.5			-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Benzo(k)fluoranthene	mg/kg	0.5			-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Chrysene	mg/kg	0.5			-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Dibenz(a,h)anthracene	mg/kg	0.5			-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Fluoranthene	mg/kg	0.5			-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Fluorene	mg/kg	0.5			-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Indeno(1.2.3-cd)pyrene	mg/kg	0.5			-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Naphthalene	mg/kg	0.5	NL		-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Phenanthrene	mg/kg	0.5			-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Pyrene	mg/kg	0.5			-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Total PAH	mg/kg	0.5	4000		-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
BTEX	Benzene	mg/kg	0.1	4		-	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	Toluene	mg/kg	0.1	NL		-	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	Ethylbenzene	mg/kg	0.1	NL		-	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	Xylenes - Total	mg/kg	0.3	NL		-	-	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
TRH	Naphthalene	mg/kg	0.5			-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	TRH C6-C10	mg/kg	20		700	-	-	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
	TRH C6-C10 less BTEX (F1)	mg/kg	20	310		-	-	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
	TRH >C10-C16	mg/kg	50		5200	-	-	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
	TRH >C10-C16 less Naphthalene (F2)	mg/kg	50	NL		-	-	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
	TRH >C16-C34	mg/kg	100		10000	-	-	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	190	< 100	< 100
TRH >C34-C40		mg/kg	100		10000	-	-	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	130	< 100	< 100

Notes
NL Not limiting
Result Concentration exceeds adopted health investigation/screening level
Result Concentration exceeds adopted management limits

¹ ASC NEPM (2013) Table 1A(1): Health Investigation Levels (HILs) commercial/industrial
² ASC NEPM (2013) Soil Health Screening Levels for Vapour Intrusion, Commercial/Industrial, Clay 0m to <1m

Table 1 - Soil Analytical Results - TRH, BTEX, PAH, Metals
2-4 Brownlee Street, Ourimbah NSW



					Field ID	TP109 0.4-0.5	TP110 0.0-0.1	TP111 0.0-0.1	TP111 0.4-0.5	TP112 0.0-0.1	TP113 0.0-0.1	TP05 0.0-0.2	TP10 0.0-0.2	TP11 0.0-0.2	TP11 0.4-0.5	TP11 0.9-1.0	TP12 0.4-0.5	SS14	SS16	SS17	SS18
					Date	25/10/2024	25/10/2024	25/10/2024	25/10/2024	25/10/2024	25/10/2024	1/11/2023	1/11/2023	1/11/2023	1/11/2023	1/11/2023	1/11/2023	1/11/2023	1/11/2023	1/11/2023	1/11/2023
					AEC							2. Former Council Depot									
Analytes		Units	LOR	HIL/HSL D ¹	Mgmt Limits																
Metals	Arsenic	mg/kg	2	3000		4.4	< 2	4.1	4.4	< 2	< 2	4.2	2.7	2.8	3.7	5.1	2.8	6.9	2.5	2.6	5.3
	Cadmium	mg/kg	0.4	900		< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	1.7	0.4	0.4	< 0.4
	Chromium	mg/kg	5	3600		13	< 5	10	9.5	< 5	< 5	17	28	14	15	12	16	25	11	23	17
	Copper	mg/kg	5	240000		25	10	2300	20	9.1	15	23	32	37	35	18	13	150	31	46	5.1
	Lead	mg/kg	5	1500		30	190	220	32	15	21	25	170	70	120	45	18	200	82	83	11
	Mercury	mg/kg	0.1	730		< 0.1	0.2	< 0.1	< 0.1	< 0.1	0.1	< 0.1	< 0.1	< 0.1	0.2	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	Nickel	mg/kg	5	6000		6	< 5	16	5.2	< 5	< 5	13	33	21	8.8	7.7	< 5	21	10	32	< 5
	Zinc	mg/kg	5	400000		110	69	320	210	37	150	110	290	100	160	81	27	2300	160	160	34
PAHs	Acenaphthene	mg/kg	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Acenaphthylene	mg/kg	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Anthracene	mg/kg	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Benz(a)anthracene	mg/kg	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Benzo(a)pyrene	mg/kg	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Benzo(a)pyrene TEQ (med bound)	mg/kg	0.6	40		0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
	Benzo(b&j)fluoranthene	mg/kg	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Benzo(g,h,i)perylene	mg/kg	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.6	< 0.5
	Benzo(k)fluoranthene	mg/kg	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Chrysene	mg/kg	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Dibenz(a,h)anthracene	mg/kg	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Fluoranthene	mg/kg	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Fluorene	mg/kg	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Indeno(1.2.3-cd)pyrene	mg/kg	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Naphthalene	mg/kg	0.5	NL		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Phenanthrene	mg/kg	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Pyrene	mg/kg	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Total PAH	mg/kg	0.5	4000		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.6	< 0.5
BTEX	Benzene	mg/kg	0.1	4		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	Toluene	mg/kg	0.1	NL		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	Ethylbenzene	mg/kg	0.1	NL		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	Xylenes - Total	mg/kg	0.3	NL		< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
TRH	Naphthalene	mg/kg	0.5			< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	TRH C6-C10	mg/kg	20		700	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
	TRH C6-C10 less BTEX (F1)	mg/kg	20	310		< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
	TRH >C10-C16	mg/kg	50		5200	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
	TRH >C10-C16 less Naphthalene (F2)	mg/kg	50	NL		< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
	TRH >C16-C34	mg/kg	100		10000	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	180	140	< 100	< 100	340	130	520	< 100
	TRH >C34-C40	mg/kg	100		10000	< 100	< 100	< 100	< 100	< 100	< 100	< 100	110	180	150	< 100	< 100	160	120	550	< 100

- Notes
- NL Not limiting
 - Result Concentration exceeds adopted health investigation/screening level
 - Result Concentration exceeds adopted management limits

¹ ASC NEPM (2013) Table 1A(1): Health Investigation Levels (HILs) commercial/industrial
² ASC NEPM (2013) Soil Health Screening Levels for Vapour Intrusion, Commercial/Industrial, Clay 0m to <1m



					Field ID	SS10	SS11	SS12	SS13
					Date	1/11/2023	1/11/2023	1/11/2023	1/11/2023
					AEC	3. Dweling on Lot 42			
Analytes		Units	LOR	HIL/HSL D ¹	Mgmt Limits				
Metals	Arsenic	mg/kg	2	3000		3.8	2.9	4	2.3
	Cadmium	mg/kg	0.4	900		< 0.4	< 0.4	< 0.4	< 0.4
	Chromium	mg/kg	5	3600		13	13	11	13
	Copper	mg/kg	5	240000		15	24	< 5	10
	Lead	mg/kg	5	1500		75	80	30	57
	Mercury	mg/kg	0.1	730		< 0.1	< 0.1	< 0.1	< 0.1
	Nickel	mg/kg	5	6000		< 5	7.2	< 5	< 5
	Zinc	mg/kg	5	400000		91	77	37	80
PAHs	Acenaphthene	mg/kg	0.5			-	-	-	-
	Acenaphthylene	mg/kg	0.5			-	-	-	-
	Anthracene	mg/kg	0.5			-	-	-	-
	Benz(a)anthracene	mg/kg	0.5			-	-	-	-
	Benzo(a)pyrene	mg/kg	0.5			-	-	-	-
	Benzo(a)pyrene TEQ (med bound)	mg/kg	0.6	40		-	-	-	-
	Benzo(b&j)fluoranthene	mg/kg	0.5			-	-	-	-
	Benzo(g,h,i)perylene	mg/kg	0.5			-	-	-	-
	Benzo(k)fluoranthene	mg/kg	0.5			-	-	-	-
	Chrysene	mg/kg	0.5			-	-	-	-
	Dibenz(a,h)anthracene	mg/kg	0.5			-	-	-	-
	Fluoranthene	mg/kg	0.5			-	-	-	-
	Fluorene	mg/kg	0.5			-	-	-	-
	Indeno(1.2.3-cd)pyrene	mg/kg	0.5			-	-	-	-
	Naphthalene	mg/kg	0.5	NL		-	-	-	-
	Phenanthrene	mg/kg	0.5			-	-	-	-
	Pyrene	mg/kg	0.5			-	-	-	-
	Total PAH	mg/kg	0.5	4000		-	-	-	-
BTEX	Benzene	mg/kg	0.1	4		-	-	-	-
	Toluene	mg/kg	0.1	NL		-	-	-	-
	Ethylbenzene	mg/kg	0.1	NL		-	-	-	-
	Xylenes - Total	mg/kg	0.3	NL		-	-	-	-
TRH	Naphthalene	mg/kg	0.5			-	-	-	-
	TRH C6-C10	mg/kg	20		700	-	-	-	-
	TRH C6-C10 less BTEX (F1)	mg/kg	20	310		-	-	-	-
	TRH >C10-C16	mg/kg	50		5200	-	-	-	-
	TRH >C10-C16 less Naphthalene (F2)	mg/kg	50	NL		-	-	-	-
	TRH >C16-C34	mg/kg	100		10000	-	-	-	-
	TRH >C34-C40	mg/kg	100		10000	-	-	-	-

- Notes
- NL

Not limiting
- Result

Concentration exceeds adopted health investigation/screening level
- Result

Concentration exceeds adopted management limits

¹ ASC NEPM (2013) Table 1A(1): Health Investigation Levels (HILs) commercial/industrial

² ASC NEPM (2013) Soil Health Screening Levels for Vapour Intrusion,
Commercial/Industrial, Clay 0m to <1m



				Field ID	TP05 0.0-0.2	TP10 0.0-0.2	TP11 0.0-0.2	TP12 0.0-0.2	SS14	SS15	SS17	TP106 0.0-0.1	TP108 0.0-0.1	TP111 0.0-0.1	TP113 0.0-0.1
				Date	28/02/2023	28/02/2023	28/02/2023	28/02/2023	28/02/2023	28/02/2023	28/02/2023	25/10/2024	25/10/2024	25/10/2024	25/10/2024
Analytes		Units	LOR	HIL D ¹											
OCPs	4,4'-DDD	mg/kg	0.05		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 0.05
	4,4'-DDE	mg/kg	0.05		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 0.05
	4,4'-DDT	mg/kg	0.05		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 0.05
	a-HCH	mg/kg	0.05		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 0.05
	Aldrin	mg/kg	0.05		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.05	0.18	< 0.05	< 0.05
	Aldrin and Dieldrin (Total)*	mg/kg	0.05	45	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.05	0.18	< 0.05	< 0.05
	b-HCH	mg/kg	0.05		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 0.05
	Chlordanes - Total	mg/kg	0.1	530	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 0.1	< 0.1	< 0.1	< 0.1
	DDT + DDE + DDD (Total)*	mg/kg	0.05	3600	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 0.05
	d-HCH	mg/kg	0.05		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 0.05
	Dieldrin	mg/kg	0.05		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 0.05
	Endosulfan I	mg/kg	0.05	2000	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 0.05
	Endosulfan II	mg/kg	0.05		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 0.05
	Endosulfan sulphate	mg/kg	0.05		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 0.05
	Endrin	mg/kg	0.05	100	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.07	< 0.05	< 0.05	< 0.05
	Endrin aldehyde	mg/kg	0.05		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 0.05
	Endrin ketone	mg/kg	0.05		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 0.05
	g-HCH (Lindane)	mg/kg	0.05		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 0.05
	Heptachlor	mg/kg	0.05	50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 0.05
	Heptachlor epoxide	mg/kg	0.05		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 0.05
	Hexachlorobenzene	mg/kg	0.05	80	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 0.05
	Methoxychlor	mg/kg	0.05	2500	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.05	< 0.05	< 0.05	< 0.05
	Toxaphene	mg/kg	0.5	160	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 0.5	< 0.5	< 0.5	< 0.5
	Vic EPA IWRG 621 OCP (Total)*	mg/kg	0.1		< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 0.1	0.18	< 0.1	< 0.1
	Vic EPA IWRG 621 Other OCP (Total)*	mg/kg	0.1		< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 0.1	< 0.1	< 0.1	< 0.1
PCBs	Aroclor-1016	mg/kg	0.05		< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 0.1	< 0.1	< 0.1	< 0.1
	Aroclor-1221	mg/kg	0.05		< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 0.1	< 0.1	< 0.1	< 0.1
	Aroclor-1232	mg/kg	0.05		< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 0.1	< 0.1	< 0.1	< 0.1
	Aroclor-1242	mg/kg	0.05		< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 0.1	< 0.1	< 0.1	< 0.1
	Aroclor-1248	mg/kg	0.05		< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 0.1	< 0.1	< 0.1	< 0.1
	Aroclor-1254	mg/kg	0.05		< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 0.1	< 0.1	< 0.1	< 0.1
	Aroclor-1260	mg/kg	0.05		< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 0.1	< 0.1	< 0.1	< 0.1
	Total PCB*	mg/kg	0.1	8	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 0.1	< 0.1	< 0.1	< 0.1

Notes

Result Concentration exceeds adopted health investigation level

1 ASC NEPM (2013) - Table 1A(1): Health Investigation Levels, commercial/industrial

Table 1 - Soil Analytical Results - TRH, BTEX, PAH, Metals
2-4 Brownlee Street, Ourimbah NSW



				Field ID	SS7	SS8	SS9	TP114 0.0-0.1	TP115 0.0-0.1	TP116 0.0-0.1	SS117	TP107 0.0-0.1	TP107 0.4-0.5	TP107 0.8-0.9	TP108 0.0-0.1	TP109 0.0-0.1	TP109 0.4-0.5	TP110 0.0-0.1	TP111 0.0-0.1	TP111 0.4-0.5	TP112 0.0-0.1	
				Date	1/11/2023	1/11/2023	1/11/2023	25/10/2025	25/10/2025	25/10/2025	25/10/2025	25/10/2024	25/10/2024	25/10/2024	25/10/2024	25/10/2024	25/10/2024	25/10/2024	25/10/2024	25/10/2024	25/10/2024	
				AEC	1. Former Amenities Building				1. Site Coverage				1. Waste Area									
Analytes		Units	LOR	EIL/ESL D ¹																		
Metals	Arsenic	mg/kg	2	160	6.7	9.2	4.8	4.5	< 2	2.1	6	4.4	3.6	< 2	5.6	5.1	4.4	< 2	4.1	4.4	< 2	
	Cadmium	mg/kg	0.4		< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	1.5	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	
	Chromium	mg/kg	5	1200*	12	14	12	14	5.8	6	12	12	11	6.4	18	20	13	< 5	10	9.5	< 5	
	Copper	mg/kg	5	270*	15	46	19	30	15	14	22	25	17	6.7	48	27	25	10	2300	20	9.1	
	Lead	mg/kg	5	1800	24	30	19	35	11	12	24	26	26	37	160	33	30	190	220	32	15	
	Mercury	mg/kg	0.1		< 0.1	< 0.1	< 0.1	0.1	< 0.1	0.1	< 0.1	0.1	< 0.1	< 0.1	0.1	< 0.1	< 0.1	0.2	< 0.1	< 0.1	< 0.1	
	Nickel	mg/kg	5	210*	7.9	14	7.5	20	< 5	< 5	8.1	8.1	< 5	< 5	14	7.6	6	< 5	16	5.2	< 5	
	Zinc	mg/kg	5	680*	67	95	73	240	15	12	67	150	49	34	700	110	110	69	320	210	37	
PAHs	Acenaphthene	mg/kg	0.5		-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	Acenaphthylene	mg/kg	0.5		-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	Anthracene	mg/kg	0.5		-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	Benzo(a)anthracene	mg/kg	0.5		-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	Benzo(a)pyrene	mg/kg	0.5	172	-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	Benzo(a)pyrene TEQ (med bound)	mg/kg	0.6		-	-	-	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	
	Benzo(b&j)fluoranthene	mg/kg	0.5		-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	Benzo(g,h,i)perylene	mg/kg	0.5		-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	Benzo(k)fluoranthene	mg/kg	0.5		-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	Chrysene	mg/kg	0.5		-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	Dibenz(a,h)anthracene	mg/kg	0.5		-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	Fluoranthene	mg/kg	0.5		-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	Fluorene	mg/kg	0.5		-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	Indeno(1,2,3-cd)pyrene	mg/kg	0.5		-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	Naphthalene	mg/kg	0.5	370	-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	Phenanthrene	mg/kg	0.5		-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	Pyrene	mg/kg	0.5		-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	Total PAH	mg/kg	0.5		-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
BTEX	Benzene	mg/kg	0.1	95	-	-	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
	Toluene	mg/kg	0.1	135	-	-	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
	Ethylbenzene	mg/kg	0.1	185	-	-	-	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
	Xylenes - Total	mg/kg	0.3	95	-	-	-	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	
TRH	Naphthalene	mg/kg	0.5	370	-	-	-	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	
	TRH C6-C10	mg/kg	20	215	-	-	-	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	
	TRH C6-C10 less BTEX (F1)	mg/kg	20		-	-	-	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	
	TRH >C10-C16	mg/kg	50	170	-	-	-	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	
	TRH >C10-C16 less Naphthalene (F2)	mg/kg	50		-	-	-	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	
	TRH >C16-C34	mg/kg	100	2500	-	-	-	< 100	< 100	< 100	< 100	< 100	< 100	190	< 100	< 100	< 100	< 100	< 100	< 100	< 100	
	TRH >C34-C40	mg/kg	100	6600	-	-	-	< 100	< 100	< 100	< 100	< 100	< 100	130	< 100	< 100	< 100	< 100	< 100	< 100	< 100	

Notes

- * EIL based on average pH of 7.4, a CEC of 8.6meq/100g and clay content of 60%, and using Ambient Background Concentration obtained from Olszowy et al (1995) using urban soils, old suburbs with high traffic (site on a hghway), 25% percentile.
- Not analysed

Result

Concentration exceeds adopted ecological investigation/screening levels

ASC NEPM (2013) Ecological Investigation/Screening Levels,

¹ commercial/industrial, fine



				Field ID	TP113 0.0-0.1	TP11 0.0-0.2	TP11 0.4-0.5	TP11 0.9-1.0	TP12 0.4-0.5	SS17	SS18
				Date	25/10/2024	1/11/2023	1/11/2023	1/11/2023	1/11/2023	1/11/2023	1/11/2023
				AEC	2. Former Council Depot						
Analytes		Units	LOR	EIL/ESL D ¹							
Metals	Arsenic	mg/kg	2	160	< 2	2.8	3.7	5.1	2.8	2.6	5.3
	Cadmium	mg/kg	0.4		< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	0.4	< 0.4
	Chromium	mg/kg	5	1200*	< 5	14	15	12	16	23	17
	Copper	mg/kg	5	270*	15	37	35	18	13	46	5.1
	Lead	mg/kg	5	1800	21	70	120	45	18	83	11
	Mercury	mg/kg	0.1		0.1	< 0.1	0.2	< 0.1	< 0.1	< 0.1	< 0.1
	Nickel	mg/kg	5	210*	< 5	21	8.8	7.7	< 5	32	< 5
	Zinc	mg/kg	5	680*	150	100	160	81	27	160	34
PAHs	Acenaphthene	mg/kg	0.5		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Acenaphthylene	mg/kg	0.5		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Anthracene	mg/kg	0.5		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Benz(a)anthracene	mg/kg	0.5		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Benzo(a)pyrene	mg/kg	0.5	172	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Benzo(a)pyrene TEQ (med bound)	mg/kg	0.6		0.6	0.6	0.6	0.6	0.6	0.6	0.6
	Benzo(b&j)fluoranthene	mg/kg	0.5		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Benzo(g,h,i)perylene	mg/kg	0.5		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.6	< 0.5
	Benzo(k)fluoranthene	mg/kg	0.5		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Chrysene	mg/kg	0.5		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Dibenz(a,h)anthracene	mg/kg	0.5		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Fluoranthene	mg/kg	0.5		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Fluorene	mg/kg	0.5		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Indeno(1.2.3-cd)pyrene	mg/kg	0.5		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Naphthalene	mg/kg	0.5	370	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Phenanthrene	mg/kg	0.5		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Pyrene	mg/kg	0.5		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Total PAH	mg/kg	0.5		< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.6	< 0.5
BTEX	Benzene	mg/kg	0.1	95	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	Toluene	mg/kg	0.1	135	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	Ethylbenzene	mg/kg	0.1	185	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	Xylenes - Total	mg/kg	0.3	95	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3	< 0.3
TRH	Naphthalene	mg/kg	0.5	370	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	TRH C6-C10	mg/kg	20	215	< 20	< 20	< 20	< 20	< 20	< 20	< 20
	TRH C6-C10 less BTEX (F1)	mg/kg	20		< 20	< 20	< 20	< 20	< 20	< 20	< 20
	TRH >C10-C16	mg/kg	50	170	< 50	< 50	< 50	< 50	< 50	< 50	< 50
	TRH >C10-C16 less Naphthalene (F2)	mg/kg	50		< 50	< 50	< 50	< 50	< 50	< 50	< 50
	TRH >C16-C34	mg/kg	100	2500	< 100	180	140	< 100	< 100	520	< 100
	TRH >C34-C40	mg/kg	100	6600	< 100	180	150	< 100	< 100	550	< 100

Notes

- * EIL based on average pH of 7.4, a CEC of 8.6meq/100g and clay content of 60%, and using Ambient Background Concentration obtained from Olszowy et al (1995) using urban soils, old suburbs with high traffic (site on a hghway), 25% percentile.
- Not analysed

Result

Concentration exceeds adopted ecological investigation/screening levels

1 ASC NEPM (2013) Ecological Investigation/Screening Levels, commercial/industrial, fine

Table 3: Asbestos Results
2-4 Brownlee Street, Ourimbah NSW



	Sample ID	TP01_0.0-0.2	TP01_0.4-0.5	TP04_0.0-0.2	TP04_0.4-0.5	TP05_0.0-0.2	TP05_0.4-0.5	TP05_0.9-1.0	TP08_0.0-0.2	TP08_0.4-0.5	TP09_0.0-0.2	TP09_0.4-0.5	TP10_0.0-0.2	TP10_0.4-0.5	TP11_0-0.2	TP11_0.4-0.5	TP11_0.9-1.0	TP12_0.0-0.2	TP12_0.4-0.5	TP12_0.9-1.0
	Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
	Sample Date	1/11/2023	1/11/2023	1/11/2023	1/11/2023	1/11/2023	1/11/2023	1/11/2023	1/11/2023	1/11/2023	1/11/2023	1/11/2023	1/11/2023	1/11/2023	1/11/2023	1/11/2023	1/11/2023	1/11/2023	1/11/2023	1/11/2023
	HIL/HSL D																			
ACM weight (g)		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ACM weight (kg)		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Soil density (kg/L)		1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Soil Volume (L)		10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Asbestos Content (%)		15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
%w/w ACM in Soil	0.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
%w/w FA/AF in Soil	0.001	<0.001%	-	-	-	-	<0.001%	-	-	<0.001%	-	<0.001%	-	<0.001%	-	<0.001%	<0.001%	-	-	<0.001%

	Sample ID	SS1	SS2	SS3	SS4	SS5	SS6	SS7	SS8	SS9	SS10	SS11	SS12	SS13	SS14	SS15	SS16	SS17	SS18	TP101 0.0-0.1
	Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
	Sample Date	1/11/2023	1/11/2023	1/11/2023	1/11/2023	1/11/2023	1/11/2023	1/11/2023	1/11/2023	1/11/2023	1/11/2023	1/11/2023	1/11/2023	1/11/2023	1/11/2023	1/11/2023	1/11/2023	1/11/2023	1/11/2023	25/10/2024
	HIL/HSL D																			
ACM weight (g)		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45.5
ACM weight (kg)		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0455
Soil density (kg/L)		1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Soil Volume (L)		10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Asbestos Content (%)		15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
%w/w ACM in Soil	0.05	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.04
%w/w FA/AF in Soil	0.001	-	-	-	<0.001%	-	<0.001%	<0.001%	-	<0.001%	<0.001%	<0.001%	<0.001%	<0.001%	<0.001%	-	<0.001%	-	<0.001%	<0.001%

	Sample ID	TP101 0.0-0.1	TP101 0.0-0.1	TP102 0.0-0.1	TP103 0.0-0.1	TP104 0.0-0.1	TP105 0.0-0.1	TP106 0.0-0.1	TP106 0.4-0.5	TP107 0.0-0.1	TP107 0.4-0.5	TP108 0.0-0.1	TP109 0.0-0.1	TP109 0.4-0.5	TP110 0.0-0.1	TP111 0.0-0.1	TP111 0.4-0.5	TP112 0.0-0.1	TP113 0.0-0.1	TP114 0.0-0.1
	Matrix	Fragment	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
	Sample Date	25/10/2025	25/10/2024	25/10/2024	25/10/2024	25/10/2024	25/10/2024	25/10/2024	25/10/2024	25/10/2024	25/10/2024	25/10/2024	25/10/2024	25/10/2024	25/10/2024	25/10/2024	25/10/2024	25/10/2024	25/10/2024	25/10/2024
	HIL/HSL D																			
ACM weight (g)		-	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ACM weight (kg)		-	0.045	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Soil density (kg/L)		-	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Soil Volume (L)		-	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Asbestos Content (%)		-	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
%w/w ACM in Soil	0.05	-	0.0375	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
%w/w FA/AF in Soil	0.001	-	<0.001%	<0.001%	<0.001%	-	<0.001%	<0.001%	-	<0.001%	-	<0.001%	<0.001%	-	<0.001%	<0.001%	-	<0.001%	<0.001%	<0.001%
Asbestos presence/absence	Detect	Detected	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

	Sample ID	TP115 0.0-0.1	TP116 0.0-0.1
	Matrix	Soil	Soil
	Sample Date	25/10/2024	25/10/2024
	HIL/HSL D		
ACM weight (g)		0	0
ACM weight (kg)		0	0
Soil density (kg/L)		1.8	1.8
Soil Volume (L)		10	10
Asbestos Content (%)		15	15
%w/w ACM in Soil	0.05	0	0
%w/w FA/AF in Soil	0.001	<0.001%	<0.001%

Notes:
%w/w asbestos in soil calculated using: % asbestos content x bonded ACM (kg) / soil volume (L) x soil density (kg/L)
Result Exceeds adopted criteria
Result ACM detected on surface below HSL
Criteria from ASC NEPM (2013) Table 7 - Health Screening Level (HSL) for Asbestos, Commercial/Industrial

Table 4 - Quality Control Results
2-4 Brownlee Street, Ourimbah NSW



		Sample ID		TP10_0.0-0.2	D1.11.23	RPD %	TP10_0.0-0.2	T.1.11.23	RPD %	TP113 0.0-0.1	D25.10.24	RPD %	TP101 0.0-0.1	D2.25.10.24	RPD %			TB.25.10.24
		Date	1/11/2023	1/11/2023	28/01/2023		28/02/2023	25/10/2024		25/10/2024	25/10/2024		25/10/2024			25/10/2024		
		Type	Primary	Duplicate	Primary		Triplicate	Primary		Duplicate	Primary		Duplicate			Trip Blank		
Analytes		Soil Units	LOR													Water Units	Water LOR	
Metals	Arsenic	mg/kg	2	2.7	2.1	25	2.7	2	30	< 2	< 2	0	4.4	9.6	74	mg/L	0.001	-
	Cadmium	mg/kg	0.4	< 0.4	< 0.4	0	< 0.4	< 0.3	29	< 0.4	< 0.4	0	< 0.4	0.5	22	mg/L	0.0002	-
	Chromium	mg/kg	5	28	34	19	28	15	60	< 5	< 5	0	18	31	53	mg/L	0.001	-
	Copper	mg/kg	5	32	30	0	32	22	37	15	15	0	15	23	42	mg/L	0.001	-
	Lead	mg/kg	5	170	99	53	170	82	70	21	21	0	160	310	64	mg/L	0.001	-
	Mercury	mg/kg	5	< 0.1	< 0.1	0	< 0.1	< 0.05	67	0.1	< 0.1	0	< 0.2	0.1	8	mg/L	0.0001	-
	Nickel	mg/kg	5	33	41	8	33	27	20	< 5	< 5	0	< 5	15	100	mg/L	0.001	-
	Zinc	mg/kg	5	290	160	58	290	130	76	150	150	0	780	1200	42	mg/L	0.005	-
PAHs	Acenaphthene	mg/kg	0.5	< 0.5	< 0.5	0	< 0.5	< 0.1	0	< 0.5	< 0.5	0	-	< 0.5	-	mg/L	0.001	< 0.001
	Acenaphthylene	mg/kg	0.5	< 0.5	< 0.5	0	< 0.5	< 0.1	0	< 0.5	< 0.5	0	-	< 0.5	-	mg/L	0.001	< 0.001
	Anthracene	mg/kg	0.5	< 0.5	< 0.5	0	< 0.5	< 0.1	0	< 0.5	< 0.5	0	-	< 0.5	-	mg/L	0.001	< 0.001
	Benz(a)anthracene	mg/kg	0.5	< 0.5	< 0.5	0	< 0.5	< 0.1	0	< 0.5	< 0.5	0	-	< 0.5	-	mg/L	0.001	< 0.001
	Benzo(a)pyrene	mg/kg	0.5	< 0.5	< 0.5	0	< 0.5	< 0.1	0	< 0.5	< 0.5	0	-	< 0.5	-	mg/L	0.001	< 0.001
	Benzo(a)pyrene TEQ (medium bound)	mg/kg	0.6	0.6	0.6	0	0.6	< 0.2	0	0.6	0.6	0	-	0.6	-	mg/L	0.001	-
	Benzo(b&j)fluoranthene	mg/kg	0.5	< 0.5	< 0.5	0	< 0.5	0.1	0	< 0.5	< 0.5	0	-	< 0.5	-	mg/L	0.001	< 0.001
	Benzo(g,h,i)perylene	mg/kg	0.5	< 0.5	< 0.5	0	< 0.5	0.1	0	< 0.5	< 0.5	0	-	< 0.5	-	mg/L	0.001	< 0.001
	Benzo(k)fluoranthene	mg/kg	0.5	< 0.5	< 0.5	0	< 0.5	< 0.1	0	< 0.5	< 0.5	0	-	< 0.5	-	mg/L	0.001	< 0.001
	Chrysene	mg/kg	0.5	< 0.5	< 0.5	0	< 0.5	< 0.1	0	< 0.5	< 0.5	0	-	< 0.5	-	mg/L	0.001	< 0.001
	Dibenz(a,h)anthracene	mg/kg	0.5	< 0.5	< 0.5	0	< 0.5	< 0.1	0	< 0.5	< 0.5	0	-	< 0.5	-	mg/L	0.001	< 0.001
	Fluoranthene	mg/kg	0.5	< 0.5	< 0.5	0	< 0.5	0.1	0	< 0.5	< 0.5	0	-	< 0.5	-	mg/L	0.001	< 0.001
	Fluorene	mg/kg	0.5	< 0.5	< 0.5	0	< 0.5	< 0.1	0	< 0.5	< 0.5	0	-	< 0.5	-	mg/L	0.001	< 0.001
	Indeno(1,2,3-cd)pyrene	mg/kg	0.5	< 0.5	< 0.5	0	< 0.5	< 0.1	0	< 0.5	< 0.5	0	-	< 0.5	-	mg/L	0.001	< 0.001
	Naphthalene	mg/kg	0.5	< 0.5	< 0.5	0	< 0.5	< 0.1	0	< 0.5	< 0.5	0	-	< 0.5	-	mg/L	0.001	< 0.001
	Phenanthrene	mg/kg	0.5	< 0.5	< 0.5	0	< 0.5	< 0.1	0	< 0.5	< 0.5	0	-	< 0.5	-	mg/L	0.001	< 0.001
	Pyrene	mg/kg	0.5	< 0.5	< 0.5	0	< 0.5	0.1	0	< 0.5	< 0.5	0	-	< 0.5	-	mg/L	0.001	< 0.001
	Total PAH	mg/kg	0.5	< 0.5	< 0.5	0	< 0.5	< 0.8	0	< 0.5	< 0.5	0	-	< 0.5	-	mg/L	0.001	< 0.001
BTEX	Benzene	mg/kg	0.1	< 0.1	< 0.1	0	< 0.1	< 0.1	0	< 0.1	< 0.1	0	-	< 0.1	-	mg/L	0.001	< 0.001
	Toluene	mg/kg	0.1	< 0.1	< 0.1	0	< 0.1	< 0.1	0	< 0.1	< 0.1	0	-	< 0.1	-	mg/L	0.001	< 0.001
	Ethylbenzene	mg/kg	0.1	< 0.1	< 0.1	0	< 0.1	< 0.1	0	< 0.1	< 0.1	0	-	< 0.1	-	mg/L	0.001	< 0.001
	Xylenes - Total	mg/kg	0.3	< 0.3	< 0.3	0	< 0.3	< 0.3	0	< 0.3	< 0.3	0	-	< 0.3	-	mg/L	0.003	< 0.003
TRH	Naphthalene	mg/kg	0.5	< 0.5	< 0.5	0	< 0.5	< 0.1	0	< 0.5	< 0.5	0	-	< 0.5	-	mg/L	0.01	< 0.01
	TRH C6-C10	mg/kg	20	< 20	< 20	0	< 20	< 25	0	< 20	< 20	0	-	< 20	-	mg/L	0.02	< 0.02
	TRH C6-C10 less BTEX (F1)	mg/kg	20	< 20	< 20	0	< 20	< 25	0	< 20	< 20	0	-	< 20	-	mg/L	0.02	< 0.02
	TRH >C10-C16	mg/kg	50	< 50	< 50	0	< 50	< 25	0	< 50	< 50	0	-	< 50	-	mg/L	0.05	< 0.05
	TRH >C10-C16 less Naphthalene (F2)	mg/kg	50	< 50	< 50	0	< 50	< 25	0	< 50	< 50	0	-	< 50	-	mg/L	0.05	< 0.05
	TRH >C16-C34	mg/kg	100	< 100	< 100	0	< 100	< 90	0	< 100	130	26	-	< 100	-	mg/L	0.1	< 0.1
	TRH >C34-C40	mg/kg	100	110	< 100	10	110	< 120	9	< 100	< 100	10	-	< 100	-	mg/L	0.1	< 0.1
OCPs	4,4'-DDD	mg/kg	0.1	< 0.5	< 0.5	0	< 0.5	< 0.1	0	-	-	-	-	-	-	-	-	-
	4,4'-DDE	mg/kg	0.1	< 0.5	< 0.5	0	< 0.5	< 0.1	0	-	-	-	-	-	-	-	-	-
	4,4'-DDT	mg/kg	0.1	< 0.5	< 0.5	0	< 0.5	< 0.1	0	-	-	-	-	-	-	-	-	-
	a-HCH	mg/kg	0.1	< 0.5	< 0.5	0	< 0.5	< 0.1	0	-	-	-	-	-	-	-	-	-
	Aldrin	mg/kg	0.1	< 0.5	< 0.5	0	< 0.5	< 0.1	0	-	-	-	-	-	-	-	-	-
	Aldrin and Dieldrin (Total)*	mg/kg	0.1	< 0.5	< 0.5	0	< 0.5	< 0.2	0	-	-	-	-	-	-	-	-	-
	b-HCH	mg/kg	0.1	< 0.5	< 0.5	0	< 0.5	< 0.1	0	-	-	-	-	-	-	-	-	-
	Chlordanes - Total	mg/kg	0.1	< 1	< 1	0	< 1	< 0.1	0	-	-	-	-	-	-	-	-	-
	DDT + DDE + DDD (Total)*	mg/kg	0.1	< 0.5	< 0.5	0	< 0.5	< 0.1	0	-	-	-	-	-	-	-	-	-
	d-HCH	mg/kg	0.1	< 0.5	< 0.5	0	< 0.5	< 0.1	0	-	-	-	-	-	-	-	-	-
	Dieldrin	mg/kg	0.1	< 0.5	< 0.5	0	< 0.5	< 0.2	0	-	-	-	-	-	-	-	-	-
	Endosulfan I	mg/kg	0.1	< 0.5	< 0.5	0	< 0.5	< 0.2	0	-	-	-	-	-	-	-	-	-
	Endosulfan II	mg/kg	0.1	< 0.5	< 0.5	0	< 0.5	< 0.2	0	-	-	-	-	-	-	-	-	-
	Endosulfan sulphate	mg/kg	0.1	< 0.5	< 0.5	0	< 0.5	< 0.1	0	-	-	-	-	-	-	-	-	-
	Endrin	mg/kg	0.1	< 0.5	< 0.5	0	< 0.5	< 0.2	0	-	-	-	-	-	-	-	-	-
	Endrin aldehyde	mg/kg	0.1	< 0.5	< 0.5	0	< 0.5	< 0.1	0	-	-	-	-	-	-	-	-	-
	Endrin ketone	mg/kg	0.1	< 0.5	< 0.5	0	< 0.5	< 0.1	0	-	-	-	-	-	-	-	-	-
	g-HCH (Lindane)	mg/kg	0.1	< 0.5	< 0.5	0	< 0.5	-	0	-	-	-	-	-	-	-	-	-
	Heptachlor	mg/kg	0.1	< 0.5	< 0.5	0	< 0.5	< 0.1	0	-	-	-	-	-	-	-	-	-
	Heptachlor epoxide	mg/kg	0.1	< 0.5	< 0.5	0	< 0.5	< 0.1	0	-	-	-	-	-	-	-	-	-
	Hexachlorobenzene (HCB)	mg/kg	0.1	< 0.5	< 0.5	0	< 0.5	-	0	-	-	-	-	-	-	-	-	-
	Methoxychlor	mg/kg	0.1	< 0.5	< 0.5	0	< 0.5	< 0.1	0	-	-	-	-	-	-	-	-	-
	Toxaphene	mg/kg	0.5	< 10	< 10	0	< 10	-	0	-	-	-	-	-	-	-	-	-

*RPDs have only been considered where a concentration is greater than 10 times the EQL.

**High RPDs are in bold (Acceptable RPD range is 30% (>10 x EQL))

	A	B	C	D	E	F	G	H	I	J	K	L
1	UCL Statistics for Uncensored Full Data Sets											
2												
3	User Selected Options											
4	Date/Time of Computation			ProUCL 5.2 31/10/2024 9:52:13 AM								
5	From File			WorkSheet.xls								
6	Full Precision			OFF								
7	Confidence Coefficient			95%								
8	Number of Bootstrap Operations			2000								
9												
10												
11	Zinc											
12												
13	General Statistics											
14	Total Number of Observations				11		Number of Distinct Observations				9	
15							Number of Missing Observations				0	
16	Minimum				34		Mean				176.3	
17	Maximum				700		Median				110	
18	SD				193.3		Std. Error of Mean				58.28	
19	Coefficient of Variation				1.097		Skewness				2.322	
20												
21	Normal GOF Test											
22	Shapiro Wilk Test Statistic				0.717		Shapiro Wilk GOF Test					
23	1% Shapiro Wilk Critical Value				0.792		Data Not Normal at 1% Significance Level					
24	Lilliefors Test Statistic				0.281		Lilliefors GOF Test					
25	1% Lilliefors Critical Value				0.291		Data appear Normal at 1% Significance Level					
26	Data appear Approximate Normal at 1% Significance Level											
27												
28	Assuming Normal Distribution											
29	95% Normal UCL						95% UCLs (Adjusted for Skewness)					
30	95% Student's-t UCL				281.9		95% Adjusted-CLT UCL (Chen-1995)				315.7	
31							95% Modified-t UCL (Johnson-1978)				288.7	
32												
33	Gamma GOF Test											
34	A-D Test Statistic				0.384		Anderson-Darling Gamma GOF Test					
35	5% A-D Critical Value				0.745		Detected data appear Gamma Distributed at 5% Significance Level					
36	K-S Test Statistic				0.183		Kolmogorov-Smirnov Gamma GOF Test					
37	5% K-S Critical Value				0.26		Detected data appear Gamma Distributed at 5% Significance Level					
38	Detected data appear Gamma Distributed at 5% Significance Level											
39												
40	Gamma Statistics											
41	k hat (MLE)				1.354		k star (bias corrected MLE)				1.045	
42	Theta hat (MLE)				130.2		Theta star (bias corrected MLE)				168.7	
43	nu hat (MLE)				29.78		nu star (bias corrected)				22.99	
44	MLE Mean (bias corrected)				176.3		MLE Sd (bias corrected)				172.4	
45							Approximate Chi Square Value (0.05)				13.09	
46	Adjusted Level of Significance				0.0278		Adjusted Chi Square Value				11.88	
47												
48	Assuming Gamma Distribution											
49	95% Approximate Gamma UCL				309.7		95% Adjusted Gamma UCL				341.1	
50												
51	Lognormal GOF Test											
52	Shapiro Wilk Test Statistic				0.961		Shapiro Wilk Lognormal GOF Test					
53	10% Shapiro Wilk Critical Value				0.876		Data appear Lognormal at 10% Significance Level					

	A	B	C	D	E	F	G	H	I	J	K	L	
54	Lilliefors Test Statistic					0.12	Lilliefors Lognormal GOF Test						
55	10% Lilliefors Critical Value					0.231	Data appear Lognormal at 10% Significance Level						
56	Data appear Lognormal at 10% Significance Level												
57													
58	Lognormal Statistics												
59	Minimum of Logged Data					3.526	Mean of logged Data					4.759	
60	Maximum of Logged Data					6.551	SD of logged Data					0.926	
61													
62	Assuming Lognormal Distribution												
63	95% H-UCL					413.6	90% Chebyshev (MVUE) UCL					320.6	
64	95% Chebyshev (MVUE) UCL					388.7	97.5% Chebyshev (MVUE) UCL					483.3	
65	99% Chebyshev (MVUE) UCL					669							
66													
67	Nonparametric Distribution Free UCL Statistics												
68	Data appear to follow a Discernible Distribution												
69													
70	Nonparametric Distribution Free UCLs												
71	95% CLT UCL					272.1	95% BCA Bootstrap UCL					319.9	
72	95% Standard Bootstrap UCL					268.4	95% Bootstrap-t UCL					441.6	
73	95% Hall's Bootstrap UCL					701.7	95% Percentile Bootstrap UCL					275.7	
74	90% Chebyshev(Mean, Sd) UCL					351.1	95% Chebyshev(Mean, Sd) UCL					430.3	
75	97.5% Chebyshev(Mean, Sd) UCL					540.2	99% Chebyshev(Mean, Sd) UCL					756.1	
76													
77	Suggested UCL to Use												
78	95% Student's-t UCL					281.9							
79													
80	The calculated UCLs are based on assumptions that the data were collected in a random and unbiased manner.												
81	Please verify the data were collected from random locations.												
82	If the data were collected using judgmental or other non-random methods,												
83	then contact a statistician to correctly calculate UCLs.												
84													
85	When a data set follows an approximate distribution passing only one of the GOF tests,												
86	it is suggested to use a UCL based upon a distribution passing both GOF tests in ProUCL												
87													
88	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.												
89	Recommendations are based upon data size, data distribution, and skewness using results from simulation studies.												
90	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.												
91													

APPENDIX C:

Test Pit Logs

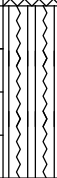
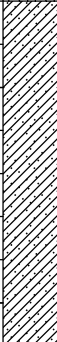
ENGINEERING LOG - TEST PIT

CLIENT: CENTRAL COAST INDUSTRY CONNECT LTD
PROJECT: PROPOSED RESIDENTIAL DEVELOPMENT
LOCATION: 2-4 BROWNEE ROAD, OURIMBAH

TEST PIT NO: TP01
PAGE: 1 OF 1
JOB NO: NEW23P-0208
LOGGED BY: BB
DATE: 1/11/23

EQUIPMENT TYPE: 2.7 TONNE EXCAVATOR
TEST PIT LENGTH: 2.0 m **WIDTH:** 0.5 m

SURFACE RL:
DATUM:

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations	
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result		
E	Slow Inflow (<1L/min)	E 0.20m				SC	FILL-TOPSOIL: Gravelly Clayey SAND - fine to coarse grained (mostly fine to medium grained), brown, fine to medium grained, sub-angular to angular gravel, fines of low plasticity, root affected.	D - M				FILL - TOPSOIL	
		GP	FILL: GRAVEL - fine to coarse grained (mostly medium to coarse grained), angular to sub-angular, brown to dark brown and red-brown with some black, with some fine to coarse grained sand, with some fines of low plasticity.	FILL									
		0.40m				CL	TOPSOIL: Sandy CLAY - low to medium plasticity, dark grey-brown, fine to medium grained (mostly fine grained) sand.	M > w _p		HP	110	BURIED TOPSOIL / POSSIBLE COLLUVIUM	
		E 0.50m											
		0.90m				CI	Sandy CLAY - medium plasticity, grey-brown to pale brown, fine grained sand.	M ~ w _p	St	HP	130	COLLUVIUM / POSSIBLE ALLUVIUM	
		E 1.00m											
		1.10m											
		CBR & U50											
		1.40m							M > w _p	F / Fb	HP	70	ALLUVIUM
		ASS 1.50m											
2.00m						Sandy CLAY / Clayey SAND - low to medium plasticity, grey, fine to medium grained sand.			HP	80			
ASS 2.10m													
2.50m									VSt	HP		230	
ASS 2.60m													
						CH	CLAY - high plasticity, grey with some orange-brown.						
							Hole Terminated at 2.80 m Due to limit of reach of excavation						

LEGEND:		Notes, Samples and Tests		Consistency		UCS (kPa)		Moisture Condition	
Water		U ₃₀ 50mm Diameter tube sample		VS Very Soft		<25		D Dry	
Water Level (Date and time shown)		CBR Bulk sample for CBR testing		S Soft		25 - 50		M Moist	
Water Inflow		E Environmental sample (Glass jar, sealed and chilled on site)		F Firm		50 - 100		W Wet	
Water Outflow		ASS Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)		St Stiff		100 - 200		W _p Plastic Limit	
Strata Changes		B Bulk Sample		VSt Very Stiff		200 - 400		W _L Liquid Limit	
Gradational or transitional strata		Field Tests		H Hard		>400			
Definitive or distinct strata change		PID Photoionisation detector reading (ppm)		Fb Friable					
		DCP(x-y) Dynamic penetrometer test (test depth interval shown)		Density		V Very Loose		Density Index <15%	
		HP Hand Penetrometer test (UCS kPa)		L Loose		MD Medium Dense		Density Index 15 - 35%	
				D Dense		VD Very Dense		Density Index 35 - 65%	
								Density Index 65 - 85%	
								Density Index 85 - 100%	

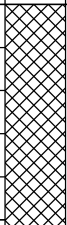
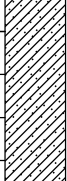
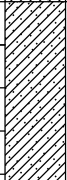
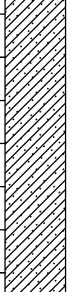
ENGINEERING LOG - TEST PIT

CLIENT: CENTRAL COAST INDUSTRY CONNECT LTD
PROJECT: PROPOSED RESIDENTIAL DEVELOPMENT
LOCATION: 2-4 BROWNLEE ROAD, OURIMBAH

TEST PIT NO: TP02
PAGE: 1 OF 1
JOB NO: NEW23P-0208
LOGGED BY: BB
DATE: 1/11/23

EQUIPMENT TYPE: 2.7 TONNE EXCAVATOR
TEST PIT LENGTH: 2.0 m **WIDTH:** 0.5 m

SURFACE RL:
DATUM:

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations			
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result				
E	Not Encountered	U50 1.55m		0.5		GP	FILL: GRAVEL - medium to coarse grained, angular, blue-grey, trace fine to medium grained sand, trace fines of low plasticity, root affected.	D				FILL - STOCKPILE			
				0.60m		CL	TOPSOIL: Sandy CLAY - low plasticity, grey-brown, fine grained sand, weakly cemented.								
				0.90m										BURIED TOPSOIL	
				1.0		CL	Sandy CLAY - low plasticity, grey-brown, fine to coarse grained sand.	M < w _p		HP	>600		COLLUVIUM		
				1.40m										HP	>600
				1.5		CL	Sandy CLAY - medium plasticity, pale brown, fine grained sand.							H	HP
				2.0		CI		M ~ w _p	VSt	HP	>600				
				2.5											
				2.60m		CH	CLAY - high plasticity, grey with some orange-brown.							M > w _p	HP
								2.80m			Hole Terminated at 2.80 m Due to limit of reach of excavation				

LEGEND:		Notes, Samples and Tests		Consistency		UCS (kPa)	Moisture Condition	
Water		U ₅₀ 50mm Diameter tube sample		VS	Very Soft	<25	D	Dry
 Water Level (Date and time shown)		CBR Bulk sample for CBR testing		S	Soft	25 - 50	M	Moist
 Water Inflow		E Environmental sample (Glass jar, sealed and chilled on site)		F	Firm	50 - 100	W	Wet
 Water Outflow		ASS Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)		St	Stiff	100 - 200	w _p	Plastic Limit
Strata Changes		B Bulk Sample		VSt	Very Stiff	200 - 400	w _L	Liquid Limit
--- Gradational or transitional strata		Field Tests		H	Hard	>400		
— Definitive or distinct strata change		PID Photoionisation detector reading (ppm)		Fb	Friable			
		DCP(x-y) Dynamic penetrometer test (test depth interval shown)		Density		V	Very Loose	Density Index <15%
		HP Hand Penetrometer test (UCS kPa)		L		L	Loose	Density Index 15 - 35%
				MD		MD	Medium Dense	Density Index 35 - 65%
				D		D	Dense	Density Index 65 - 85%
				VD		VD	Very Dense	Density Index 85 - 100%



ENGINEERING LOG - TEST PIT

CLIENT: CENTRAL COAST INDUSTRY CONNECT LTD

PROJECT: PROPOSED RESIDENTIAL DEVELOPMENT

LOCATION: 2-4 BROWNLEE ROAD, OURIMBAH

TEST PIT NO:

TP03

PAGE:

1 OF 1

JOB NO:

NEW23P-0208

LOGGED BY:

BB

DATE:

1/11/23

EQUIPMENT TYPE: 2.7 TONNE EXCAVATOR

SURFACE RL:

TEST PIT LENGTH: 2.0 m **WIDTH:** 0.5 m

DATUM:

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations				
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result					
E	Not Encountered	0.70m			SM		FILL-TOPSOIL: Gravelly Silty SAND / Sandy Silty GRAVEL - fine to coarse grained, dark grey to black, fine to coarse grained angular gravel, fines of low plasticity, root affected.	D				FILL - TOPSOIL				
					CL		Sandy CLAY - low to medium plasticity, pale grey, fine grained sand, weakly cemented.			HP	>600	COLLUVIUM				
						Earthenware pipe located at 0.5m BEGL.			HP	>600						
						Sandy CLAY - medium plasticity, pale brown, fine grained sand.			HP	>600						
								HP	>600							

LEGEND:

Water

-  Water Level
 (Date and time shown)
 Water Inflow
 Water Outflow

Strata Changes

- Strata Changes**
- — Gradational or transitional strata
 - Definitive or distinct strata change

[illegible]

- | | |
|-----------------|--|
| U ₅₀ | 50mm Diameter tube sample |
| CBR | Bulk sample for CBR testing |
| E | Environmental sample
(Glass jar, sealed and chilled on site) |
| ASS | Acid Sulfate Soil Sample
(Plastic bag, air expelled, chilled) |
| B | Bulk Sample |

Field Tests

- | | |
|----------|---|
| PID | Photoionisation detector reading (ppm) |
| DCP(x-y) | Dynamic penetrometer test (test depth interval shown) |
| HP | Hand Penetrometer test (UCS kPa) |

[illegible]

- | | |
|-----|------------|
| VS | Very Soft |
| S | Soft |
| F | Firm |
| St | Stiff |
| VSt | Very Stiff |
| H | Hard |
| Fb | Friable |

UCS (kPa)		

- <25
25 - 50
50 - 100
100 - 200
200 - 400
>400

Moisture Condition

- | | |
|-------|---------------|
| D | Dry |
| M | Moist |
| W | Wet |
| W_p | Plastic Limit |
| W_l | Liquid Limit |

- | <u>Density</u> | | | |
|----------------|--------------|---------------|-----------|
| V | Very Loose | Density Index | <15% |
| L | Loose | Density Index | 15 - 35% |
| MD | Medium Dense | Density Index | 35 - 65% |
| D | Dense | Density Index | 65 - 85% |
| VD | Very Dense | Density Index | 85 - 100% |

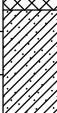
ENGINEERING LOG - TEST PIT

CLIENT: CENTRAL COAST INDUSTRY CONNECT LTD
PROJECT: PROPOSED RESIDENTIAL DEVELOPMENT
LOCATION: 2-4 BROWNEE ROAD, OURIMBAH

TEST PIT NO: TP04
PAGE: 1 OF 1
JOB NO: NEW23P-0208
LOGGED BY: BB
DATE: 1/11/23

EQUIPMENT TYPE: 2.7 TONNE EXCAVATOR
TEST PIT LENGTH: 2.0 m **WIDTH:** 0.5 m

SURFACE RL:
DATUM:

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations		
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result			
E	Not Encountered	E 0.20m				SC	FILL-TOPSOIL: Clayey SAND - fine to medium grained, dark grey-brown, fines of low plasticity, with some glass, steel, brick, tile, and sticks, root affected.	D - M				FILL - TOPSOIL		
						CL	Sandy CLAY - low to medium plasticity, grey, fine to medium grained sand, weakly cemented.			HP	>600	COLLUVIUM		
		0.40m												
		E & U50 0.65m		0.5			Sandy CLAY - medium plasticity, pale brown to pale orange-brown, fine grained sand.			HP	>600			
										HP	>600			
		0.90m												
		E 1.00m		1.0		CI				HP	>600			
						1.5			Brown to pale orange-brown.			HP	>600	
		2.00m		2.0										
		ASS 2.10m				CH	CLAY - medium to high plasticity, grey with some orange-brown, trace fine grained sand.			HP	410	ALLUVIUM / POSSIBLE RESIDUAL SOIL		
		2.50m		2.5										
		ASS 2.60m								HP	280			
					</									

LEGEND:		Notes, Samples and Tests		Consistency		UCS (kPa)	Moisture Condition	
Water		U ₅₀ 50mm Diameter tube sample		VS	Very Soft	<25	D	Dry
Water Level (Date and time shown)		CBR Bulk sample for CBR testing		S	Soft	25 - 50	M	Moist
Water Inflow		E Environmental sample (Glass jar, sealed and chilled on site)		F	Firm	50 - 100	W	Wet
Water Outflow		ASS Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)		St	Stiff	100 - 200	W _p	Plastic Limit
Strata Changes		B Bulk Sample		VSt	Very Stiff	200 - 400	W _L	Liquid Limit
Gradational or transitional strata		Field Tests		H	Hard	>400		
Definitive or distinct strata change		PID Photoionisation detector reading (ppm)		Fb	Friable			
		DCP(x-y) Dynamic penetrometer test (test depth interval shown)		Density		V	Very Loose	Density Index <15%
		HP Hand Penetrometer test (UCS kPa)		L		L	Loose	Density Index 15 - 35%
				MD		MD	Medium Dense	Density Index 35 - 65%
				D		D	Dense	Density Index 65 - 85%
				VD		VD	Very Dense	Density Index 85 - 100%



ENGINEERING LOG - TEST PIT

CLIENT: CENTRAL COAST INDUSTRY CONNECT LTD

PROJECT: PROPOSED RESIDENTIAL DEVELOPMENT

LOCATION: 2-4 BROWNLEE ROAD, OURIMBAH

TEST PIT NO:

TP05

PAGE:

1 OF 1

JOB NO:

NEW23P-0208

LOGGED BY:

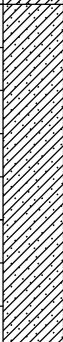
BB

DATE:

1/11/23

EQUIPMENT TYPE: 2.7 TONNE EXCAVATOR
TEST PIT LENGTH: 2.0 m **WIDTH:** 0.5 m

SURFACE RL:
DATUM:

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	
E	 Very Slow Inflow (<1L/min)	E 0.20m				SC	FILL-TOPSOIL: Gravelly Clayey SAND / Clayey Sandy GRAVEL - fine to coarse grained, brown with some orange-brown, fine to medium grained angular to sub-angular gravel, fines of low plasticity, root affected in top 0.2m.	M				FILL - TOPSOIL
		0.40m				CL	TOPSOIL: Sandy CLAY - low to medium plasticity, dark grey-brown, fine grained sand.		VSt	HP	280	BURIED TOPSOIL
		E 0.50m										
		0.90m				CL	Sandy CLAY - low to medium plasticity, pale grey brown with some pale orange brown, fine to medium grained (mostly fine grained) sand.	M ~ w _p	St	HP	340	COLLUVIUM
		E & CBR 1.10m										
		1.40m										
		E 1.50m										
		2.00m				CH	Sandy CLAY - medium to high plasticity, orange-brown to pale orange-brown with some pale grey to white, fine grained sand, trace fine to coarse grained angular to sub-angular gravel.	M > w _p	VSt	HP	310	COLLUVIUM / POSSIBLE RESIDUAL SOIL
										St	HP	170
							Hole Terminated at 2.80 m Due to limit of reach of excavation					

LEGEND:

Water

-  Water Level
 (Date and time shown)
 Water Inflow
 Water Outflow

Strata Changes

- Strata Changes**
- — Gradational or transitional strata
 - Definitive or distinct strata change

Notes, Samples and Tests

- | | |
|-----------------|--|
| U ₅₀ | 50mm Diameter tube sample |
| CBR | Bulk sample for CBR testing |
| E | Environmental sample
(Glass jar, sealed and chilled on site) |
| ASS | Acid Sulfate Soil Sample
(Plastic bag, air expelled, chilled) |
| B | Bulk Sample |

Field Tests

- | | |
|----------|---|
| PID | Photoionisation detector reading (ppm) |
| DCP(x-y) | Dynamic penetrometer test (test depth interval shown) |
| HP | Hand Penetrometer test (UCS kPa) |

Consistency

- | | | |
|-----|------------|-----------|
| VS | Very Soft | <25 |
| S | Soft | 25 - 50 |
| F | Firm | 50 - 100 |
| St | Stiff | 100 - 200 |
| VSt | Very Stiff | 200 - 400 |
| H | Hard | >400 |
| Fb | Friable | |

UCS (kPa)

- <25
25 - 50
50 - 100
100 - 200
200 - 400
>400

Moisture Condition

- | | |
|-------|---------------|
| D | Dry |
| M | Moist |
| W | Wet |
| W_p | Plastic Limit |
| W_l | Liquid Limit |

- | <u>Density</u> | | | |
|----------------|--------------|---------------|-----------|
| V | Very Loose | Density Index | <15% |
| L | Loose | Density Index | 15 - 35% |
| MD | Medium Dense | Density Index | 35 - 65% |
| D | Dense | Density Index | 65 - 85% |
| VD | Very Dense | Density Index | 85 - 100% |



ENGINEERING LOG - TEST PIT

CLIENT: CENTRAL COAST INDUSTRY CONNECT LTD

PROJECT: PROPOSED RESIDENTIAL DEVELOPMENT

LOCATION: 2-4 BROWNLEE ROAD, OURIMBAH

TEST PIT NO:

TP06

PAGE:

1 OF 1

JOB NO:

NEW23P-0208

LOGGED BY:

BB

DATE:

1/11/23

EQUIPMENT TYPE: 2.7 TONNE EXCAVATOR
TEST PIT LENGTH: 2.0 m **WIDTH:** 0.5 m

SURFACE RL:
DATUM:

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	
E	Not Encountered					CI	FILL: MIXTURE OF SOIL (70%) AND COBBLES/BOULDERS (~30%): Gravelly Sandy CLAY - medium plasticity, pale brown and grey brown, fine to coarse grained (mostly fine to medium grained) sand, fine to coarse grained (mostly medium to coarse grained) angular to sub-angular gravel, boulder size <300mm, root affected	M < w _p		HP	>600	FILL
		0.5		0.70m	Sandy CLAY - low to medium plasticity, grey-brown, fine grained sand, weakly cemented.	H						
		1.00m		1.0		CL	Sandy CLAY - medium plasticity, pale orange-brown, fine to medium grained (mostly fine grained) sand.	M ~ w _p	St / Fb	HP	190	COLLUVIUM
		U50 1.15m		1.5		CI	SAND - fine to medium grained, pale brown to pale grey-brown.					
		1.70m		2.0		SP	Clayey SAND - fine to medium grained, pale brown to pale grey-brown, fines of low plasticity.	M	HP	230	ALLUVIUM	
		ASS 1.80m		2.5		SC	CLAY - medium to high plasticity, grey with some orange-brown, with some fine to medium grained sand.	M > w _p				VSt
		2.40m							HP	240		
		ASS 2.50m										
							Hole Terminated at 2.80 m Due to limit of reach of excavation					

LEGEND:

Water

-  Water Level
 (Date and time shown)
 Water Inflow
 Water Outflow

Strata Changes

- Strata Changes**
- — Gradational or transitional strata
 - Definitive or distinct strata change

Notes, Samples and Tests

- | | |
|-----------------|--|
| U ₅₀ | 50mm Diameter tube sample |
| CBR | Bulk sample for CBR testing |
| E | Environmental sample
(Glass jar, sealed and chilled on site) |
| ASS | Acid Sulfate Soil Sample
(Plastic bag, air expelled, chilled) |
| B | Bulk Sample |

Field Tests

- | | |
|----------|---|
| PID | Photoionisation detector reading (ppm) |
| DCP(x-y) | Dynamic penetrometer test (test depth interval shown) |
| HP | Hand Penetrometer test (UCS kPa) |

[illegible]

- | | | |
|-----|------------|-----------|
| VS | Very Soft | <25 |
| S | Soft | 25 - 50 |
| F | Firm | 50 - 100 |
| St | Stiff | 100 - 200 |
| VSt | Very Stiff | 200 - 400 |
| H | Hard | >400 |
| Fb | Friable | |

Density

- | | | |
|----|--------------|-------------------------|
| L | Loose | Density Index 15 - 35% |
| MD | Medium Dense | Density Index 35 - 65% |
| D | Dense | Density Index 65 - 85% |
| VD | Very Dense | Density Index 85 - 100% |

UCS (kPa)

- | | | |
|-----------|-------|---------------|
| <25 | D | Dry |
| 25 - 50 | M | Moist |
| 50 - 100 | W | Wet |
| 100 - 200 | W_p | Plastic Limit |
| 200 - 400 | W_l | Liquid Limit |

Moisture Condition

- | | |
|-------|---------------|
| D | Dry |
| M | Moist |
| W | Wet |
| W_p | Plastic Limit |
| W_L | Liquid Limit |
-
- | |
|-------------------------|
| Density Index <15% |
| Density Index 15 - 35% |
| Density Index 35 - 65% |
| Density Index 65 - 85% |
| Density Index 85 - 100% |

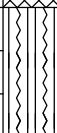
ENGINEERING LOG - TEST PIT

CLIENT: CENTRAL COAST INDUSTRY CONNECT LTD
PROJECT: PROPOSED RESIDENTIAL DEVELOPMENT
LOCATION: 2-4 BROWNEE ROAD, OURIMBAH

TEST PIT NO: TP08
PAGE: 1 OF 1
JOB NO: NEW23P-0208
LOGGED BY: BB
DATE: 1/11/23

EQUIPMENT TYPE: 2.7 TONNE EXCAVATOR
TEST PIT LENGTH: 2.0 m **WIDTH:** 0.5 m

SURFACE RL:
DATUM:

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations	
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result		
E	Slow Inflow (<1L/min)	E 0.20m				CL	FILL-TOPSOIL: Gravelly Sandy CLAY - low to medium plasticity, dark brown, fine to coarse grained (mostly fine to medium grained) sand, fine to coarse grained angular to sub-angular gravel, root affected.	M < w _p	VSt	HP	390	FILL - TOPSOIL	
		0.40m				CL	Sandy CLAY - low to medium plasticity, dark grey brown, fine grained sand, weakly cemented.					BURIED TOPSOIL	
		E 0.50m		0.5		CL	Sandy CLAY - low to medium plasticity, dark grey-brown to grey-brown, fine grained sand, weakly cemented.					VSt - H	HP
		0.80m						Sandy CLAY - medium plasticity, pale brown to pale orange-brown, fine to medium grained sand (mostly fine grained) sand.	M > w _p	St	HP	160	ALLUVIUM
		ASS & U50 1.10m		1.0		CI							
		1.50m		1.5									
		ASS 1.60m						Sandy CLAY - medium to high plasticity, grey with some pale orange-brown, fine grained sand.					
		2.00m		2.0			CH						
		ASS 2.10m											
												</	

LEGEND:		Notes, Samples and Tests		Consistency		UCS (kPa)	Moisture Condition	
Water		U ₅₀ 50mm Diameter tube sample		VS	Very Soft	<25	D	Dry
Water Level (Date and time shown)		CBR Bulk sample for CBR testing		S	Soft	25 - 50	M	Moist
Water Inflow		E Environmental sample (Glass jar, sealed and chilled on site)		F	Firm	50 - 100	W	Wet
Water Outflow		ASS Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)		St	Stiff	100 - 200	W _p	Plastic Limit
Strata Changes		B Bulk Sample		VSt	Very Stiff	200 - 400	W _L	Liquid Limit
Gradational or transitional strata		Field Tests		H	Hard	>400		
Definitive or distinct strata change		PID Photoionisation detector reading (ppm)		Fb	Friable			
		DCP(x-y) Dynamic penetrometer test (test depth interval shown)		Density		V	Very Loose	Density Index <15%
		HP Hand Penetrometer test (UCS kPa)		L		L	Loose	Density Index 15 - 35%
				MD		MD	Medium Dense	Density Index 35 - 65%
				D		D	Dense	Density Index 65 - 85%
				VD		VD	Very Dense	Density Index 85 - 100%

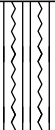
ENGINEERING LOG - TEST PIT

CLIENT: CENTRAL COAST INDUSTRY CONNECT LTD
PROJECT: PROPOSED RESIDENTIAL DEVELOPMENT
LOCATION: 2-4 BROWNEE ROAD, OURIMBAH

TEST PIT NO: TP09
PAGE: 1 OF 1
JOB NO: NEW23P-0208
LOGGED BY: BB
DATE: 1/11/23

EQUIPMENT TYPE: 2.7 TONNE EXCAVATOR
TEST PIT LENGTH: 2.0 m **WIDTH:** 0.5 m

SURFACE RL:
DATUM:

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations	
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result		
E	Very Slow Inflow (<1L/min)	E 0.20m				CL	TOPSOIL: Sandy CLAY - low to medium plasticity, dark grey brown, fine grained sand, root affected.	M < w _p				TOPSOIL	
		0.40m					Sandy CLAY - low to medium plasticity, dark grey-brown to grey-brown, fine grained sand.					COLLUVIUM / POSSIBLE TOPSOIL	
		E 0.50m				CL							
		0.80m					Sandy CLAY - medium to high plasticity, pale brown to pale orange-brown, fine to medium grained (mostly fine grained) sand.	M > w _p	VSt	HP	290	COLLUVIUM	
		CBR & E & U50 1.00m				CH				HP	390		
										HP	260		
		2.10m					SP	SAND / Clayey SAND - fine to medium grained, brown, some fines of low plasticity.	M - W				ALLUVIUM
		ASS 2.20m					CLAY - high plasticity, grey to red-brown.						
							CH	Grey to dark grey.	M > w _p	St	HP	110	
											HP	190	
							Hole Terminated at 2.80 m Due to limit of reach of excavation						

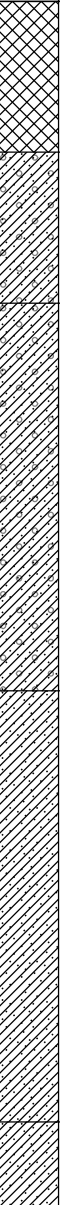
LEGEND:		Notes, Samples and Tests		Consistency		UCS (kPa)	Moisture Condition	
Water		U ₅₀	50mm Diameter tube sample	VS	Very Soft	<25	D	Dry
Water Level (Date and time shown)		CBR	Bulk sample for CBR testing	S	Soft	25 - 50	M	Moist
Water Inflow		E	Environmental sample (Glass jar, sealed and chilled on site)	F	Firm	50 - 100	W	Wet
Water Outflow		ASS	Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)	St	Stiff	100 - 200	W _p	Plastic Limit
Strata Changes		B	Bulk Sample	VSt	Very Stiff	200 - 400	W _L	Liquid Limit
Gradational or transitional strata				H	Hard	>400		
Definitive or distinct strata change				Fb	Friable			
		Field Tests		Density				
		PID	Photoionisation detector reading (ppm)	V	Very Loose		Density Index <15%	
		DCP(x-y)	Dynamic penetrometer test (test depth interval shown)	L	Loose		Density Index 15 - 35%	
		HP	Hand Penetrometer test (UCS kPa)	MD	Medium Dense		Density Index 35 - 65%	
				D	Dense		Density Index 65 - 85%	
				VD	Very Dense		Density Index 85 - 100%	

ENGINEERING LOG - TEST PIT

CLIENT: CENTRAL COAST INDUSTRY CONNECT LTD
PROJECT: PROPOSED RESIDENTIAL DEVELOPMENT
LOCATION: 2-4 BROWNEE ROAD, OURIMBAH

TEST PIT NO: TP10
PAGE: 1 OF 1
JOB NO: NEW23P-0208
LOGGED BY: BB
DATE: 1/11/23

EQUIPMENT TYPE: 2.7 TONNE EXCAVATOR
TEST PIT LENGTH: 2.0 m **WIDTH:** 0.5 m
SURFACE RL:
DATUM:

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations		
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result			
E	Not Encountered	E 0.20m				SC	FILL-TOPSOIL: Clayey SAND - fine to medium grained, dark grey-brown, fines of low plasticity, trace fine to medium grained angular gravel, trace brick, glass, and concrete.	D - M				FILL - TOPSOIL		
		0.40m												
		E 0.50m		0.5		CI	Gravelly Sandy CLAY - medium plasticity, brown, fine to coarse grained (mostly fine to medium grained) sand, fine to coarse grained angular gravel.	M ~ w _p	VSt / Fb					
		0.80m												
		ASS & U50 1.05m		1.0		CI	Gravelly Sandy CLAY - medium plasticity, orange-brown to pale orange-brown, fine to medium grained sand, fine to coarse grained sub-angular to sub-rounded gravel.	M < w _p	VSt - H	HP	500			
		1.70m		1.5			Sandy CLAY / Clayey SAND - low to medium plasticity, pale grey to white with some pale orange-brown, fine to medium grained sand, trace fine grained angular gravel.			HP	380			
		ASS 1.80m		2.0		CL		M ~ w _p	VSt / Fb	HP	280			

LEGEND:		Notes, Samples and Tests		Consistency		UCS (kPa)		Moisture Condition	
Water		U ₅₀ 50mm Diameter tube sample		VS Very Soft		<25		D Dry	
Water Level (Date and time shown)		CBR Bulk sample for CBR testing		S Soft		25 - 50		M Moist	
Water Inflow		E Environmental sample (Glass jar, sealed and chilled on site)		F Firm		50 - 100		W Wet	
Water Outflow		ASS Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)		St Stiff		100 - 200		W _p Plastic Limit	
Strata Changes		B Bulk Sample		VSt Very Stiff		200 - 400		W _L Liquid Limit	
Gradational or transitional strata		Field Tests		H Hard		>400			
Definitive or distinct strata change		PID Photoionisation detector reading (ppm)		Fb Friable					
		DCP(x-y) Dynamic penetrometer test (test depth interval shown)		Density		V Very Loose		Density Index <15%	
		HP Hand Penetrometer test (UCS kPa)		L Loose		MD Medium Dense		Density Index 15 - 35%	
				D Dense		VD Very Dense		Density Index 35 - 65%	
								Density Index 65 - 85%	
								Density Index 85 - 100%	



ENGINEERING LOG - TEST PIT

CLIENT: CENTRAL COAST INDUSTRY CONNECT LTD

PROJECT: PROPOSED RESIDENTIAL DEVELOPMENT

LOCATION: 2-4 BROWNLEE ROAD, OURIMBAH

TEST PIT NO:

TP11

PAGE:

1 OF 1

JOB NO:

NEW23P-0208

LOGGED BY:

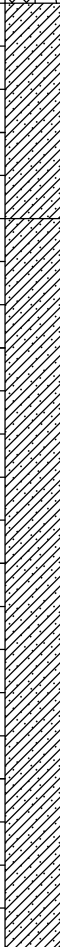
BB

DATE:

1/11/23

EQUIPMENT TYPE: 2.7 TONNE EXCAVATOR
TEST PIT LENGTH: 2.0 m **WIDTH:** 0.5 m

SURFACE RL:
DATUM:

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations	
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result		
E	Not Encountered	E 0.20m				GM	0.05m 0.08m FILL-TOPSOIL: Silty Sandy GRAVEL - fine to medium grained, angular to sub angular, pale grey to pale grey brown, fine to coarse grained sand, fines of low plasticity, root affected. ASPHALTIC CONCRETE (~30mm thick)	D				FILL - TOPSOIL ASPHALT FILL	
		0.40m				SC	FILL: MIXTURE OF SOIL (~70%) AND COBBLES/BOULDERS (~30%): Clayey Gravelly SAND - fine to coarse grained (mostly fine to medium grained), pale brown, fines of low to medium plasticity, fine to coarse grained angular gravel.	M	D - VD	HP	500	COLLUVIUM / POSSIBLE TOPSOIL	
		E 0.50m											
		0.70m											
		E & CBR 1.00m					CL	0.70m Sandy CLAY - low plasticity, dark grey brown to black, fine grained sand, weakly cemented. Earthenware pipe at 1.0m BEGL.	M ~ w _p	H / Fb			
		1.40m				CH	1.20m Sandy CLAY - medium to high plasticity, pale orange-brown to orange-brown, fine to medium grained sand.	M > w _p	VSt	HP	310 270 210 260	COLLUVIUM / POSSIBLE RESIDUAL SOIL	
		E 1.50m											
								2.90m Hole Terminated at 2.90 m Due to limit of reach of excavation					

LEGEND:

Water

-  Water Level
 (Date and time shown)
 Water Inflow
 Water Outflow

Strata Changes

- Strata Changes**
- — Gradational or transitional strata
 - Definitive or distinct strata change

Notes, Samples and Tests

- | | |
|-----------------|--|
| U ₅₀ | 50mm Diameter tube sample |
| CBR | Bulk sample for CBR testing |
| E | Environmental sample
(Glass jar, sealed and chilled on site) |
| ASS | Acid Sulfate Soil Sample
(Plastic bag, air expelled, chilled) |
| B | Bulk Sample |

Field Tests

- | | |
|----------|---|
| PID | Photoionisation detector reading (ppm) |
| DCP(x-y) | Dynamic penetrometer test (test depth interval shown) |
| HP | Hand Penetrometer test (UCS kPa) |

[illegible]

- | | |
|-----|------------|
| VS | Very Soft |
| S | Soft |
| F | Firm |
| St | Stiff |
| VSt | Very Stiff |
| H | Hard |
| Fb | Friable |

UCS (kPa)

- <25
25 - 50
50 - 100
100 - 200
200 - 400
>400

Moisture Condition

- | | |
|-------|---------------|
| D | Dry |
| M | Moist |
| W | Wet |
| W_p | Plastic Limit |
| W_l | Liquid Limit |

Density

- | <u>Density</u> | | | |
|----------------|--------------|---------------|-----------|
| V | Very Loose | Density Index | <15% |
| L | Loose | Density Index | 15 - 35% |
| MD | Medium Dense | Density Index | 35 - 65% |
| D | Dense | Density Index | 65 - 85% |
| VD | Very Dense | Density Index | 85 - 100% |

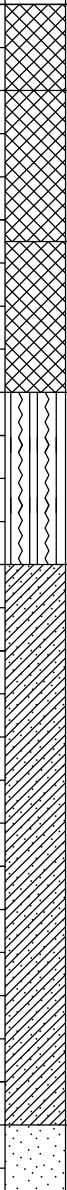
ENGINEERING LOG - TEST PIT

CLIENT: CENTRAL COAST INDUSTRY CONNECT LTD
PROJECT: PROPOSED RESIDENTIAL DEVELOPMENT
LOCATION: 2-4 BROWNEE ROAD, OURIMBAH

TEST PIT NO: TP12
PAGE: 1 OF 1
JOB NO: NEW23P-0208
LOGGED BY: BB
DATE: 1/11/23

EQUIPMENT TYPE: 2.7 TONNE EXCAVATOR
TEST PIT LENGTH: 2.0 m **WIDTH:** 0.5 m

SURFACE RL:
DATUM:

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations			
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result				
E	Not Encountered	E 0.20m				SC	FILL-TOPSOIL: Gravelly Clayey SAND - fine to coarse grained (mostly fine to medium grained), dark grey-brown, fine to medium grained sub-angular to sub-rounded gravel, fines of low plasticity, root affected.	D - M		HP	>600	FILL - TOPSOIL			
		0.40m E 0.50m	0.5	CH		FILL: Gravelly CLAY - medium to high plasticity, red-brown, fine to coarse grained (mostly medium to coarse grained) angular gravel, trace fine to coarse grained sand. Layer of bricks.	M < w _p	H	FILL						
		0.90m	1.0	CI		FILL: Gravelly Sandy CLAY - medium plasticity, pale grey to pale grey-brown, and trace pale orange-brown, fine to coarse grained (mostly fine to medium grained) sand, fine to coarse grained (mostly medium grained) angular to sub-angular gravel, trace cobbles (generally less than or equal to 200mm in diameter).	M ~ w _p	VSt	HP	230	HP	200	BURIED TOPSOIL		
		E 1.00m		SC		TOPSOIL: Clayey SAND / Sandy CLAY - fine to medium grained (mostly fine grained), dark grey-brown, fines of low plasticity, weakly cemented.	M	D							
		1.40m E & ASS 1.50m	1.5	CH		Sandy CLAY - medium to high plasticity, pale brown, fine to medium grained (mostly fine grained) sand.	M > w _p	St - VSt	HP	210	HP	190	160	200	COLLUVIUM
		1.90m ASS 2.00m	2.0												
			2.5												
		2.70m ASS 2.80m	2.60m												
				SP		SAND - fine to medium grained, brown, trace fines of low plasticity.									ALLUVIUM
				2.80m			Hole Terminated at 2.80 m Due to limit of reach of excavation								

LEGEND:		Notes, Samples and Tests		Consistency		UCS (kPa)		Moisture Condition	
Water		U ₃₀ 50mm Diameter tube sample		VS Very Soft		<25		D Dry	
 Water Level (Date and time shown)		CBR Bulk sample for CBR testing		S Soft		25 - 50		M Moist	
 Water Inflow		E Environmental sample (Glass jar, sealed and chilled on site)		F Firm		50 - 100		W Wet	
 Water Outflow		ASS Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)		St Stiff		100 - 200		w _p Plastic Limit	
Strata Changes		B Bulk Sample		VSt Very Stiff		200 - 400		w _L Liquid Limit	
--- Gradational or transitional strata		Field Tests		H Hard		>400			
— Definitive or distinct strata change		PID Photoionisation detector reading (ppm)		Fb Friable					
		DCP(x-y) Dynamic penetrometer test (test depth interval shown)		Density		V Very Loose		Density Index <15%	
		HP Hand Penetrometer test (UCS kPa)		L Loose		MD Medium Dense		Density Index 15 - 35%	
				D Dense		VD Very Dense		Density Index 35 - 65%	
								Density Index 65 - 85%	
								Density Index 85 - 100%	



ENGINEERING LOG - TEST PIT

CLIENT: CENTRAL COAST INDUSTRY CONNECT PTY LTD

PROJECT: DETAILED SITE INVESTIGATION

LOCATION: 2-4 BROWNEE STREET, OURIMBAH

TEST PIT NO:

TP101

PAGE:

1 OF 1

JOB NO:

NEW23P-0208

LOGGED BY:

TH

DATE:

24/10/24

EQUIPMENT TYPE: 5.5 Tonne Excavator with 450mm Bucket

SURFACE RL:

TEST PIT LENGTH: 2.0 m **WIDTH:** 0.5 m

DATUM:

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics,colour,minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	
E	Not Encountered	E 0.10m				CL	FILL-TOPSOIL: Sandy CLAY - low plasticity, dark brown, fine to coarse grained sand, trace glass, plastic, cemented asbestos containing materials (ACM), pvc, timber.	M > w _p				FILL - TOPSOIL
		0.20m					0.20m					Silty CLAY - low to medium plasticity, dark grey to dark brown, trace fine grained sand.
		E 0.30m		0.5		CI						
				1.0			0.70m	Hole Terminated at 0.70 m				

LEGEND:

Water

-  Water Level
 (Date and time shown)
 Water Inflow
 Water Outflow

Strata Changes

- Strata Changes**
- — Gradational or transitional strata
 - Definitive or distinct strata change

Notes, Samples and Tests

- | | |
|-----------------|--|
| U ₅₀ | 50mm Diameter tube sample |
| CBR | Bulk sample for CBR testing |
| E | Environmental sample
(Glass jar, sealed and chilled on site) |
| ASS | Acid Sulfate Soil Sample
(Plastic bag, air expelled, chilled) |
| B | Bulk Sample |

Field Tests

- | | |
|----------|---|
| PID | Photoionisation detector reading (ppm) |
| DCP(x-y) | Dynamic penetrometer test (test depth interval shown) |
| HP | Hand Penetrometer test (UCS kPa) |

[illegible]

- | | | |
|-----|------------|-----------|
| VS | Very Soft | <25 |
| S | Soft | 25 - 50 |
| F | Firm | 50 - 100 |
| St | Stiff | 100 - 200 |
| VSt | Very Stiff | 200 - 400 |
| H | Hard | >400 |
| Fb | Friable | |

UCS (kPa)

- <25
25 - 50
50 - 100
100 - 200
200 - 400
>400

Moisture Condition

- | | |
|-------|---------------|
| D | Dry |
| M | Moist |
| W | Wet |
| W_p | Plastic Limit |
| W_l | Liquid Limit |

Density

- | <u>Density</u> | | | |
|----------------|--------------|---------------|-----------|
| V | Very Loose | Density Index | <15% |
| L | Loose | Density Index | 15 - 35% |
| MD | Medium Dense | Density Index | 35 - 65% |
| D | Dense | Density Index | 65 - 85% |
| VD | Very Dense | Density Index | 85 - 100% |



ENGINEERING LOG - TEST PIT

CLIENT: CENTRAL COAST INDUSTRY CONNECT PTY LTD

PROJECT: DETAILED SITE INVESTIGATION

LOCATION: 2-4 BROWNEE STREET, OURIMBAH

TEST PIT NO:

TP102

PAGE:

1 OF 1

JOB NO:

NEW23P-0208

LOGGED BY:

TH

DATE:

24/10/24

EQUIPMENT TYPE: 5.5 Tonne Excavator with 450mm Bucket

SURFACE RL:

TEST PIT LENGTH: 2.0 m **WIDTH:** 0.5 m

DATUM:

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics,colour,minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	
E	Not Encountered	E 0.10m				CI	FILL: Gravelly CLAY - low to medium plasticity, red-brown with some orange-brown, fine to coarse grained sub-rounded gravel, trace fine to coarse grained sand.	M > w _p				FILL / ROAD BASE
		0.20m					Silty CLAY - low to medium plasticity, pale grey to pale brown.					ALLUVIUM / POSSIBLE COLLUVIUM
		E 0.30m		0.5		CI						
				1.0			Hole Terminated at 0.70 m					

LEGEND:

Water

-  Water Level
 (Date and time shown)
 Water Inflow
 Water Outflow

Strata Changes

- Strata Changes**
- — Gradational or transitional strata
 - Definitive or distinct strata change

Notes, Samples and Tests

- | | |
|-----------------|--|
| U ₅₀ | 50mm Diameter tube sample |
| CBR | Bulk sample for CBR testing |
| E | Environmental sample
(Glass jar, sealed and chilled on site) |
| ASS | Acid Sulfate Soil Sample
(Plastic bag, air expelled, chilled) |
| B | Bulk Sample |

Field Tests

- | | |
|----------|---|
| PID | Photoionisation detector reading (ppm) |
| DCP(x-y) | Dynamic penetrometer test (test depth interval shown) |
| HP | Hand Penetrometer test (UCS kPa) |

[illegible]

- | | | |
|-----|------------|-----------|
| VS | Very Soft | <25 |
| S | Soft | 25 - 50 |
| F | Firm | 50 - 100 |
| St | Stiff | 100 - 200 |
| VSt | Very Stiff | 200 - 400 |
| H | Hard | >400 |
| Fb | Friable | |

UCS (kPa)

- <25
25 - 50
50 - 100
100 - 200
200 - 400
>400

Moisture Condition

- | | |
|-------|---------------|
| D | Dry |
| M | Moist |
| W | Wet |
| W_p | Plastic Limit |
| W_l | Liquid Limit |

Density

- | <u>Density</u> | | | |
|----------------|--------------|---------------|-----------|
| V | Very Loose | Density Index | <15% |
| L | Loose | Density Index | 15 - 35% |
| MD | Medium Dense | Density Index | 35 - 65% |
| D | Dense | Density Index | 65 - 85% |
| VD | Very Dense | Density Index | 85 - 100% |



ENGINEERING LOG - TEST PIT

CLIENT: CENTRAL COAST INDUSTRY CONNECT PTY LTD

PROJECT: DETAILED SITE INVESTIGATION

LOCATION: 2-4 BROWNEE STREET, OURIMBAH

TEST PIT NO:

TP103

PAGE:

1 OF 1

JOB NO:

NEW23P-0208

LOGGED BY:

TH

DATE:

24/10/24

EQUIPMENT TYPE: 5.5 Tonne Excavator with 450mm Bucket

SURFACE RL:

TEST PIT LENGTH: 2.0 m **WIDTH:** 0.5 m

DATUM:

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics,colour,minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	
E	Not Encountered	E 0.10m				CI	FILL-TOPSOIL: Sandy CLAY - low to medium plasticity, dark brown, fine to medium grained sand, with some fine to coarse grained sub-rounded gravel, trace timber, plastic, brick.	M > w _p				FILL - TOPSOIL
		0.30m					0.30m					Silty CLAY - low to medium plasticity, pale grey to pale orange-brown, trace fine grained sand.
		E 0.40m		0.5		CI						
				1.0			Hole Terminated at 0.70 m					

LEGEND:

Water

-  Water Level
 (Date and time shown)
 Water Inflow
 Water Outflow

Strata Changes

- Strata changes
- — Gradational or transitional strata
 - Definitive or distinct strata change

Notes, Samples and Tests

- | | |
|-----------------|--|
| U ₅₀ | 50mm Diameter tube sample |
| CBR | Bulk sample for CBR testing |
| E | Environmental sample
(Glass jar, sealed and chilled on site) |
| ASS | Acid Sulfate Soil Sample
(Plastic bag, air expelled, chilled) |
| B | Bulk Sample |

Field Tests

- | | |
|----------|---|
| PID | Photoionisation detector reading (ppm) |
| DCP(x-y) | Dynamic penetrometer test (test depth interval shown) |
| HP | Hand Penetrometer test (UCS kPa) |

Consistency

- | | | |
|-----|------------|-----------|
| VS | Very Soft | <25 |
| S | Soft | 25 - 50 |
| F | Firm | 50 - 100 |
| St | Stiff | 100 - 200 |
| VSt | Very Stiff | 200 - 400 |
| H | Hard | >400 |
| Fb | Friable | |

UCS (kPa)

- <25
25 - 50
50 - 100
100 - 200
200 - 400
>400

Moisture Condition

- | | |
|-------|---------------|
| D | Dry |
| M | Moist |
| W | Wet |
| W_p | Plastic Limit |
| W_l | Liquid Limit |

Density

- | | | |
|----|--------------|-------------------------|
| L | Loose | Density Index 15 - 35% |
| MD | Medium Dense | Density Index 35 - 65% |
| D | Dense | Density Index 65 - 85% |
| VD | Very Dense | Density Index 85 - 100% |



ENGINEERING LOG - TEST PIT

CLIENT: CENTRAL COAST INDUSTRY CONNECT PTY LTD

PROJECT: DETAILED SITE INVESTIGATION

LOCATION: 2-4 BROWNEE STREET, OURIMBAH

TEST PIT NO:

TP104

PAGE:

1 OF 1

JOB NO:

NEW23P-0208

LOGGED BY:

TH

DATE:

24/10/24

EQUIPMENT TYPE: 5.5 Tonne Excavator with 450mm Bucket

SURFACE RL:

TEST PIT LENGTH: 2.0 m **WIDTH:** 0.5 m

DATUM:

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics,colour,minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	
E	Not Encountered	E 0.10m				CI	FILL-TOPSOIL: Sandy CLAY - low to medium plasticity, dark brown, fine to medium grained sand, with some fine to coarse grained sub-rounded gravel, trace timber, plastic, brick.	M > w _p				FILL - TOPSOIL
		0.30m					0.30m					Silty CLAY - low to medium plasticity, pale grey to dark grey, trace fine grained sand.
		E 0.40m		0.5		CI						
				1.0			Hole Terminated at 0.70 m					

LEGEND:

Water

-  Water Level
 (Date and time shown)
 Water Inflow
 Water Outflow

Strata Changes

- Strata Changes**
- — Gradational or transitional strata
 - Definitive or distinct strata change

Notes, Samples and Tests

- | | |
|-----------------|--|
| U ₅₀ | 50mm Diameter tube sample |
| CBR | Bulk sample for CBR testing |
| E | Environmental sample
(Glass jar, sealed and chilled on site) |
| ASS | Acid Sulfate Soil Sample
(Plastic bag, air expelled, chilled) |
| B | Bulk Sample |

Field Tests

- | | |
|----------|---|
| PID | Photoionisation detector reading (ppm) |
| DCP(x-y) | Dynamic penetrometer test (test depth interval shown) |
| HP | Hand Penetrometer test (UCS kPa) |

Consistency

- | | | |
|-----|------------|-----------|
| VS | Very Soft | <25 |
| S | Soft | 25 - 50 |
| F | Firm | 50 - 100 |
| St | Stiff | 100 - 200 |
| VSt | Very Stiff | 200 - 400 |
| H | Hard | >400 |
| Fb | Friable | |

UCS (kPa)

- <25
25 - 50
50 - 100
100 - 200
200 - 400
>400

Moisture Condition

- | | |
|-------|---------------|
| D | Dry |
| M | Moist |
| W | Wet |
| W_p | Plastic Limit |
| W_l | Liquid Limit |

Density

- | | | |
|----|--------------|-------------------------|
| L | Loose | Density Index 15 - 35% |
| MD | Medium Dense | Density Index 35 - 65% |
| D | Dense | Density Index 65 - 85% |
| VD | Very Dense | Density Index 85 - 100% |

ENGINEERING LOG - TEST PIT

CLIENT: CENTRAL COAST INDUSTRY CONNECT PTY LTD
PROJECT: DETAILED SITE INVESTIGATION
LOCATION: 2-4 BROWNLEE STREET, OURIMBAH

TEST PIT NO: TP105
PAGE: 1 OF 1
JOB NO: NEW23P-0208
LOGGED BY: TH
DATE: 24/10/24

EQUIPMENT TYPE: 5.5 Tonne Excavator with 450mm Bucket
TEST PIT LENGTH: 2.0 m **WIDTH:** 0.5 m
SURFACE RL:
DATUM:

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	
E	Not Encountered	E				SM	FILL: Silty SAND - fine to coarse grained, brown to pale brown with some pale grey-white, fines of low plasticity, root affected top 100mm.	M				FILL
		0.10m										
		0.40m				Silty Sandy CLAY - low to medium plasticity, pale brown to pale orange with some pale grey, fine grained sand.	M > w _p	ALLUVIUM / POSSIBLE COLLUVIUM				
		E										0.50m
							Hole Terminated at 0.70 m					
				</								

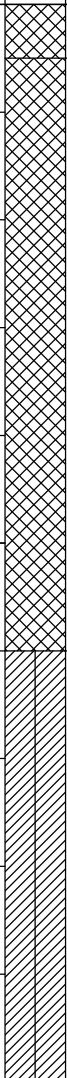
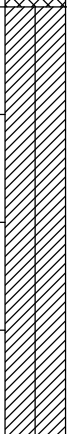
LEGEND:		Notes, Samples and Tests		Consistency		UCS (kPa)	Moisture Condition	
Water		U ₃₀ 50mm Diameter tube sample		VS	Very Soft	<25	D	Dry
 Water Level (Date and time shown)		CBR Bulk sample for CBR testing		S	Soft	25 - 50	M	Moist
 Water Inflow		E Environmental sample (Glass jar, sealed and chilled on site)		F	Firm	50 - 100	W	Wet
 Water Outflow		ASS Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)		St	Stiff	100 - 200	W _p	Plastic Limit
Strata Changes		B Bulk Sample		VSt	Very Stiff	200 - 400	W _L	Liquid Limit
 Gradational or transitional strata		Field Tests		H	Hard	>400		
 Definitive or distinct strata change		PID Photoionisation detector reading (ppm)		Fb	Friable			
		DCP(x-y) Dynamic penetrometer test (test depth interval shown)		Density	V	Very Loose	Density Index <15%	
		HP Hand Penetrometer test (UCS kPa)			L	Loose	Density Index 15 - 35%	
					MD	Medium Dense	Density Index 35 - 65%	
					D	Dense	Density Index 65 - 85%	
					VD	Very Dense	Density Index 85 - 100%	

ENGINEERING LOG - TEST PIT

CLIENT: CENTRAL COAST INDUSTRY CONNECT PTY LTD
PROJECT: DETAILED SITE INVESTIGATION
LOCATION: 2-4 BROWNEE STREET, OURIMBAH

TEST PIT NO: TP106
PAGE: 1 OF 1
JOB NO: NEW23P-0208
LOGGED BY: TH
DATE: 24/10/24

EQUIPMENT TYPE: 5.5 Tonne Excavator with 450mm Bucket
TEST PIT LENGTH: 2.0 m **WIDTH:** 0.5 m
SURFACE RL:
DATUM:

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations	
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result		
E	Not Encountered	E				SC	FILL-TOPSOIL: Clayey SAND - fine to coarse grained, dark brown, fines of low plasticity, with some ballast, root affected top 100mm.	D - M				FILL - TOPSOIL	
		0.10m					FILL: Gravelly Sandy CLAY - low to medium plasticity, orange-brown and pale grey-white with pale red, fine to coarse grained angular gravel, fine to coarse grained sand, with some weathered silty sandstone cobble >200mm, trace coal, charcoal, brick, timber.					FILL	
		0.40m				CI							
		E		0.5									
		0.50m											
		0.60m					0.60m						ALLUVIUM
		E					Silty CLAY - low to medium plasticity, pale grey to grey-brown, trace fine grained sand.	M < w _p					
		0.70m				CI							
				1.0			1.00m						
							Hole Terminated at 1.00 m						

LEGEND:		Notes, Samples and Tests		Consistency		UCS (kPa)	Moisture Condition
Water		U ₃₀ 50mm Diameter tube sample		VS	Very Soft	<25	D Dry
Water Level (Date and time shown)		CBR Bulk sample for CBR testing		S	Soft	25 - 50	M Moist
Water Inflow		E Environmental sample (Glass jar, sealed and chilled on site)		F	Firm	50 - 100	W Wet
Water Outflow		ASS Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)		St	Stiff	100 - 200	W _p Plastic Limit
Strata Changes		B Bulk Sample		VSt	Very Stiff	200 - 400	W _L Liquid Limit
Gradational or transitional strata		Field Tests		H	Hard	>400	
Definitive or distinct strata change		PID Photoionisation detector reading (ppm)		Fb	Friable		
		DCP(x-y) Dynamic penetrometer test (test depth interval shown)		Density		V Very Loose	Density Index <15%
		HP Hand Penetrometer test (UCS kPa)		L Loose		MD Medium Dense	Density Index 15 - 35%
				D Dense		D	Density Index 35 - 65%
				VD Very Dense		VD	Density Index 65 - 85%
							Density Index 85 - 100%



ENGINEERING LOG - TEST PIT

CLIENT: CENTRAL COAST INDUSTRY CONNECT PTY LTD

PROJECT: DETAILED SITE INVESTIGATION

LOCATION: 2-4 BROWNEE STREET, OURIMBAH

TEST PIT NO:

TP107

PAGE:

1 OF 1

JOB NO:

NEW23P-0208

LOGGED BY:

TH

DATE:

24/10/24

EQUIPMENT TYPE: 5.5 Tonne Excavator with 450mm Bucket

SURFACE RL:

TEST PIT LENGTH: 2.0 m **WIDTH:** 0.5 m

DATUM:

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	
E	Not Encountered	E		0.5		SC	FILL-TOPSOIL: Clayey SAND - fine to coarse grained, dark brown, fines of low plasticity, with some ballast, root affected top 100mm.	M				FILL - TOPSOIL
		0.10m				0.10m	FILL: Gravelly Sandy CLAY - low to medium plasticity, orange-brown and pale grey-white with pale red, fine to coarse grained angular gravel, fine to coarse grained sand, with some weathered silty sandstone cobble >200mm, trace coal, charcoal, brick, timber.					FILL
		0.40m										
		E										
		0.80m				0.80m	CI					Silty CLAY - low to medium plasticity, pale grey to grey-brown, trace fine grained sand.
E	0.90m											
				1.0		CI	Hole Terminated at 1.00 m					

LEGEND:

Water

-  Water Level
 (Date and time shown)
 Water Inflow
 Water Outflow

Strata Changes

- Strata Changes**
- — Gradational or transitional strata
 - Definitive or distinct strata change

Notes, Samples and Tests

- | | |
|-----------------|--|
| U ₅₀ | 50mm Diameter tube sample |
| CBR | Bulk sample for CBR testing |
| E | Environmental sample
(Glass jar, sealed and chilled on site) |
| ASS | Acid Sulfate Soil Sample
(Plastic bag, air expelled, chilled) |
| B | Bulk Sample |

Field Tests

- | | |
|----------|---|
| PID | Photoionisation detector reading (ppm) |
| DCP(x-y) | Dynamic penetrometer test (test depth interval shown) |
| HP | Hand Penetrometer test (UCS kPa) |

[illegible]

- | | |
|-----|------------|
| VS | Very Soft |
| S | Soft |
| F | Firm |
| St | Stiff |
| VSt | Very Stiff |
| H | Hard |
| Fb | Friable |

UCS (kPa)

- <25
25 - 50
50 - 100
100 - 200
200 - 400
>400

Moisture Condition

- | | |
|-------|---------------|
| D | Dry |
| M | Moist |
| W | Wet |
| W_p | Plastic Limit |
| W_l | Liquid Limit |

Density

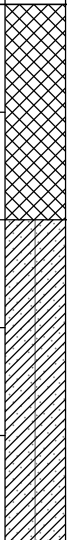
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|----------------|----|--------------|-------------------------|
| Density | V | Very Loose | Density Index <15% |
| | L | Loose | Density Index 15 - 35% |
| | MD | Medium Dense | Density Index 35 - 65% |
| | D | Dense | Density Index 65 - 85% |
| | VD | Very Dense | Density Index 85 - 100% |

ENGINEERING LOG - TEST PIT

CLIENT: CENTRAL COAST INDUSTRY CONNECT PTY LTD
PROJECT: DETAILED SITE INVESTIGATION
LOCATION: 2-4 BROWNEE STREET, OURIMBAH

TEST PIT NO: TP108
PAGE: 1 OF 1
JOB NO: NEW23P-0208
LOGGED BY: TH
DATE: 24/10/24

EQUIPMENT TYPE: 5.5 Tonne Excavator with 450mm Bucket
TEST PIT LENGTH: 2.0 m **WIDTH:** 0.5 m
SURFACE RL:
DATUM:

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations	
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result		
E	Not Encountered	E				SC	FILL-TOPSOIL: Clayey SAND / Sandy CLAY - fine to medium grained, dark brown, fines of low plasticity, trace glass, brick, root affected.	D - M				FILL - TOPSOIL	
		0.10m											
		0.20m					CL	Silty Sandy CLAY - low plasticity, pale brown to brown, fine grained sand.				M < w _p	COLLUVIUM / POSSIBLE ALLUVIUM
		E				0.30m							
				0.5			Hole Terminated at 0.50 m						
				1.0									

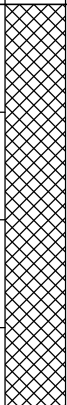
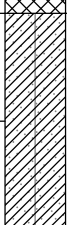
LEGEND:		Notes, Samples and Tests		Consistency		UCS (kPa)	Moisture Condition
Water		U ₅₀	50mm Diameter tube sample	VS	Very Soft	<25	D Dry
 Water Level (Date and time shown)		CBR	Bulk sample for CBR testing	S	Soft	25 - 50	M Moist
 Water Inflow		E	Environmental sample (Glass jar, sealed and chilled on site)	F	Firm	50 - 100	W Wet
 Water Outflow		ASS	Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)	St	Stiff	100 - 200	W _p Plastic Limit
Strata Changes		B	Bulk Sample	VSt	Very Stiff	200 - 400	W _L Liquid Limit
 Gradational or transitional strata		Field Tests		H	Hard	>400	
 Definitive or distinct strata change		PID	Photoionisation detector reading (ppm)	Fb	Friable		
		DCP(x-y)	Dynamic penetrometer test (test depth interval shown)	V	Very Loose	Density Index <15%	
		HP	Hand Penetrometer test (UCS kPa)	L	Loose	Density Index 15 - 35%	
				MD	Medium Dense	Density Index 35 - 65%	
				D	Dense	Density Index 65 - 85%	
				VD	Very Dense	Density Index 85 - 100%	

ENGINEERING LOG - TEST PIT

CLIENT: CENTRAL COAST INDUSTRY CONNECT PTY LTD
PROJECT: DETAILED SITE INVESTIGATION
LOCATION: 2-4 BROWNLEE STREET, OURIMBAH

TEST PIT NO: TP109
PAGE: 1 OF 1
JOB NO: NEW23P-0208
LOGGED BY: TH
DATE: 24/10/24

EQUIPMENT TYPE: 5.5 Tonne Excavator with 450mm Bucket
TEST PIT LENGTH: 2.0 m **WIDTH:** 0.5 m
SURFACE RL:
DATUM:

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	
E	Not Encountered	E				SC	FILL-TOPSOIL: Clayey SAND / Sandy CLAY - fine to medium grained, dark brown to brown, fines of low plasticity, root affected, with some fine to coarse grained gravel, trace timber, metal, charcoal, glass, sandstone cobble >200mm.	D - M				FILL
		0.10m										
		0.40m										
		E										
		0.50m	0.5									
		0.80m					0.80m					
		E				CL	OLD TOPSOIL: Silty Sandy CLAY - low plasticity, pale brown to brown, fine grained sand.	M < w _p				BURIED TOPSOIL
	0.90m											
				1.0			1.00m					
							Hole Terminated at 1.00 m					

LEGEND:		Notes, Samples and Tests		Consistency		UCS (kPa)		Moisture Condition	
Water		U ₃₀ 50mm Diameter tube sample		VS	Very Soft	<25		D	Dry
 Water Level (Date and time shown)		CBR Bulk sample for CBR testing		S	Soft	25 - 50		M	Moist
 Water Inflow		E Environmental sample (Glass jar, sealed and chilled on site)		F	Firm	50 - 100		W	Wet
 Water Outflow		ASS Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)		St	Stiff	100 - 200		W _p	Plastic Limit
Strata Changes		B Bulk Sample		VSt	Very Stiff	200 - 400		W _L	Liquid Limit
--- Gradational or transitional strata		Field Tests		H	Hard	>400			
— Definitive or distinct strata change		PID Photoionisation detector reading (ppm)		Fb	Friable				
		DCP(x-y) Dynamic penetrometer test (test depth interval shown)		V	Very Loose				Density Index <15%
		HP Hand Penetrometer test (UCS kPa)		L	Loose				Density Index 15 - 35%
				MD	Medium Dense				Density Index 35 - 65%
				D	Dense				Density Index 65 - 85%
				VD	Very Dense				Density Index 85 - 100%

ENGINEERING LOG - TEST PIT

CLIENT: CENTRAL COAST INDUSTRY CONNECT PTY LTD
PROJECT: DETAILED SITE INVESTIGATION
LOCATION: 2-4 BROWNEE STREET, OURIMBAH

TEST PIT NO: TP110
PAGE: 1 OF 1
JOB NO: NEW23P-0208
LOGGED BY: TH
DATE: 24/10/24

EQUIPMENT TYPE: 5.5 Tonne Excavator with 450mm Bucket
TEST PIT LENGTH: 2.0 m **WIDTH:** 0.5 m
SURFACE RL:
DATUM:

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	
E	Not Encountered	E				SC-SM	TOPSOIL: Silty Clayey SAND / Silty Sandy CLAY - fine to medium grained, dark brown, fines of low plasticity, root affected.	M				TOPSOIL
		0.10m										
		0.20m				CL	Silty Sandy CLAY - low plasticity, pale brown to pale grey, fine grained sand.	M > w _p				COLLUVIUM / POSSIBLE ALLUVIUM
		E					0.30m					Becoming pale orange to pale brown.
			0.5			0.50m	Hole Terminated at 0.50 m					
				1.0								

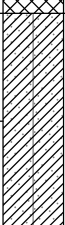
LEGEND:		Notes, Samples and Tests		Consistency		UCS (kPa)	Moisture Condition
Water		U ₅₀	50mm Diameter tube sample	VS	Very Soft	<25	D Dry
Water Level (Date and time shown)		CBR	Bulk sample for CBR testing	S	Soft	25 - 50	M Moist
Water Inflow		E	Environmental sample (Glass jar, sealed and chilled on site)	F	Firm	50 - 100	W Wet
Water Outflow		ASS	Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)	St	Stiff	100 - 200	W _p Plastic Limit
Strata Changes		B	Bulk Sample	VSt	Very Stiff	200 - 400	W _L Liquid Limit
Gradational or transitional strata		Field Tests		H	Hard	>400	
Definitive or distinct strata change		PID	Photoionisation detector reading (ppm)	Fb	Friable		
		DCP(x-y)	Dynamic penetrometer test (test depth interval shown)	Density	V	Very Loose	Density Index <15%
		HP	Hand Penetrometer test (UCS kPa)	L	Loose		Density Index 15 - 35%
				MD	Medium Dense		Density Index 35 - 65%
				D	Dense		Density Index 65 - 85%
				VD	Very Dense		Density Index 85 - 100%

ENGINEERING LOG - TEST PIT

CLIENT: CENTRAL COAST INDUSTRY CONNECT PTY LTD
PROJECT: DETAILED SITE INVESTIGATION
LOCATION: 2-4 BROWNLEE STREET, OURIMBAH

TEST PIT NO: TP111
PAGE: 1 OF 1
JOB NO: NEW23P-0208
LOGGED BY: TH
DATE: 24/10/24

EQUIPMENT TYPE: 5.5 Tonne Excavator with 450mm Bucket
TEST PIT LENGTH: 2.0 m **WIDTH:** 0.5 m
SURFACE RL:
DATUM:

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	
E	Not Encountered	E 0.10m		0.5		SC	FILL: Clayey SAND / Sandy CLAY - fine to medium grained, dark brown to brown, fines of low plasticity, root affected, with some fine to coarse grained angular gravel, trace timber, metal, glass, charcoal, coal, sandstone cobble >200mm.	D - M				FILL
		0.40m										
		E 0.50m										
		0.80m										
		E 0.90m		1.0		CL	Silty Sandy CLAY - low plasticity, brown to dark brown, fine grained sand.	M < w _p				BURIED TOPSOIL
							Hole Terminated at 1.00 m					

LEGEND:		Notes, Samples and Tests		Consistency		UCS (kPa)		Moisture Condition	
Water		U ₃₀ 50mm Diameter tube sample		VS	Very Soft	<25		D	Dry
 Water Level (Date and time shown)		CBR Bulk sample for CBR testing		S	Soft	25 - 50		M	Moist
 Water Inflow		E Environmental sample (Glass jar, sealed and chilled on site)		F	Firm	50 - 100		W	Wet
 Water Outflow		ASS Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)		St	Stiff	100 - 200		w _p	Plastic Limit
Strata Changes		B Bulk Sample		VSt	Very Stiff	200 - 400		w _L	Liquid Limit
--- Gradational or transitional strata		Field Tests		H	Hard	>400			
— Definitive or distinct strata change		PID Photoionisation detector reading (ppm)		Fb	Friable				
		DCP(x-y) Dynamic penetrometer test (test depth interval shown)		Density		V	Very Loose	Density Index <15%	
		HP Hand Penetrometer test (UCS kPa)		L		L	Loose	Density Index 15 - 35%	
				MD		MD	Medium Dense	Density Index 35 - 65%	
				D		D	Dense	Density Index 65 - 85%	
				VD		VD	Very Dense	Density Index 85 - 100%	

ENGINEERING LOG - TEST PIT

CLIENT: CENTRAL COAST INDUSTRY CONNECT PTY LTD
PROJECT: DETAILED SITE INVESTIGATION
LOCATION: 2-4 BROWNLEE STREET, OURIMBAH

TEST PIT NO: TP112
PAGE: 1 OF 1
JOB NO: NEW23P-0208
LOGGED BY: TH
DATE: 24/10/24

EQUIPMENT TYPE: 5.5 Tonne Excavator with 450mm Bucket
TEST PIT LENGTH: 2.0 m **WIDTH:** 0.5 m
SURFACE RL:
DATUM:

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	
E	Not Encountered	E				SC	FILL-TOPSOIL: Clayey SAND - fine to medium grained, pale brown to pale grey, fines of low plasticity, trace coarse grained angular gravel, root affected top 100mm.	D - M				FILL - TOPSOIL
		0.10m										
		0.40m					Silty Sandy CLAY - low plasticity, pale orange to pale brown, fine grained sand.	M < w _p				COLLUVIUM / POSSIBLE ALLUVIUM
		E										
				0.5		CL						
							Hole Terminated at 0.70 m					
				1.0								

LEGEND:		Notes, Samples and Tests		Consistency		UCS (kPa)	Moisture Condition
Water		U ₃₀	50mm Diameter tube sample	VS	Very Soft	<25	D Dry
Water Level (Date and time shown)		CBR	Bulk sample for CBR testing	S	Soft	25 - 50	M Moist
Water Inflow		E	Environmental sample (Glass jar, sealed and chilled on site)	F	Firm	50 - 100	W Wet
Water Outflow		ASS	Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)	St	Stiff	100 - 200	W _p Plastic Limit
Strata Changes		B	Bulk Sample	VSt	Very Stiff	200 - 400	W _L Liquid Limit
Gradational or transitional strata				H	Hard	>400	
Definitive or distinct strata change				Fb	Friable		
		Field Tests		Density			
		PID	Photoionisation detector reading (ppm)	V	Very Loose	Density Index <15%	
		DCP(x-y)	Dynamic penetrometer test (test depth interval shown)	L	Loose	Density Index 15 - 35%	
		HP	Hand Penetrometer test (UCS kPa)	MD	Medium Dense	Density Index 35 - 65%	
				D	Dense	Density Index 65 - 85%	
				VD	Very Dense	Density Index 85 - 100%	



ENGINEERING LOG - TEST PIT

CLIENT: CENTRAL COAST INDUSTRY CONNECT PTY LTD

PROJECT: DETAILED SITE INVESTIGATION

LOCATION: 2-4 BROWNEE STREET, OURIMBAH

TEST PIT NO:

TP113

PAGE:

1 OF 1

JOB NO:

NEW23P-0208

LOGGED BY:

TH

DATE:

24/10/24

EQUIPMENT TYPE: 5.5 Tonne Excavator with 450mm Bucket

SURFACE RL:

TEST PIT LENGTH: 2.0 m **WIDTH:** 0.5 m

DATUM:

Drilling and Sampling					Material description and profile information						Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics,colour,minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result		
E	Not Encountered	E 0.10m				SC	TOPSOIL: Silty Clayey SAND / Silty Sandy CLAY - fine to medium grained, dark brown, fines of low plasticity.	D - M				TOPSOIL	
		CL				Silty Sandy CLAY - low plasticity, pale orange-brown to pale brown, fine grained sand.	M > w _p	COLLUVIUM / POSSIBLE ALLUVIUM					
				0.5			Hole Terminated at 0.60 m						
				1.0									

LEGEND:

Water

-  Water Level
 (Date and time shown)
 Water Inflow
 Water Outflow

Strata Changes

- Strata Changes**
- — Gradational or transitional strata
 - — Definitive or distinct strata change

Notes, Samples and Tests

- | | |
|-----------------|--|
| U ₅₀ | 50mm Diameter tube sample |
| CBR | Bulk sample for CBR testing |
| E | Environmental sample
(Glass jar, sealed and chilled on site) |
| ASS | Acid Sulfate Soil Sample
(Plastic bag, air expelled, chilled) |
| B | Bulk Sample |

Field Tests

- | | |
|----------|---|
| PID | Photoionisation detector reading (ppm) |
| DCP(x-y) | Dynamic penetrometer test (test depth interval shown) |
| HP | Hand Penetrometer test (UCS kPa) |

Consistency	

- | | |
|-----|------------|
| VS | Very Soft |
| S | Soft |
| F | Firm |
| St | Stiff |
| VSt | Very Stiff |
| H | Hard |
| Fb | Friable |

UCS (kPa)

- <25
25 - 50
50 - 100
100 - 200
200 - 400
>400

Moisture Condition

- | | |
|-------|---------------|
| D | Dry |
| M | Moist |
| W | Wet |
| W_p | Plastic Limit |
| W_l | Liquid Limit |

Density

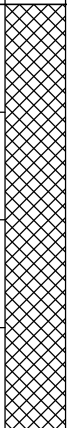
- | Density | | | |
|----------------|--------------|---------------|-----------|
| V | Very Loose | Density Index | <15% |
| L | Loose | Density Index | 15 - 35% |
| MD | Medium Dense | Density Index | 35 - 65% |
| D | Dense | Density Index | 65 - 85% |
| VD | Very Dense | Density Index | 85 - 100% |

ENGINEERING LOG - TEST PIT

CLIENT: CENTRAL COAST INDUSTRY CONNECT PTY LTD
PROJECT: DETAILED SITE INVESTIGATION
LOCATION: 2-4 BROWNLEE STREET, OURIMBAH

TEST PIT NO: TP114
PAGE: 1 OF 1
JOB NO: NEW23P-0208
LOGGED BY: TH
DATE: 24/10/24

EQUIPMENT TYPE: 5.5 Tonne Excavator with 450mm Bucket
TEST PIT LENGTH: 2.0 m **WIDTH:** 0.5 m
SURFACE RL:
DATUM:

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	
E	Not Encountered	E 0.10m				SP	FILL-TOPSOIL: Gravelly SAND - fine to coarse grained, brown to pale brown with some dark brown and dark grey, fine to coarse grained angular gravel, trace fines of low plasticity, root affected top 200mm, with some ballast, sandstone cobble >200mm, timber, metal.	D - M				FILL - TOPSOIL
		0.40m E 0.50m		0.5			Silty Sandy CLAY - low to medium plasticity, pale orange-brown, fine grained sand.					COLLUVIUM / POSSIBLE ALLUVIUM
							Hole Terminated at 0.80 m					
				1.0								

LEGEND:		Notes, Samples and Tests		Consistency		UCS (kPa)	Moisture Condition	
Water		U ₅₀	50mm Diameter tube sample	VS	Very Soft	<25	D	Dry
 Water Level (Date and time shown)		CBR	Bulk sample for CBR testing	S	Soft	25 - 50	M	Moist
 Water Inflow		E	Environmental sample (Glass jar, sealed and chilled on site)	F	Firm	50 - 100	W	Wet
 Water Outflow		ASS	Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)	St	Stiff	100 - 200	W _p	Plastic Limit
Strata Changes		B	Bulk Sample	VSt	Very Stiff	200 - 400	W _L	Liquid Limit
 Gradational or transitional strata		Field Tests		H	Hard	>400		
 Definitive or distinct strata change		PID	Photoionisation detector reading (ppm)	Fb	Friable			
		DCP(x-y)	Dynamic penetrometer test (test depth interval shown)	Density	V	Very Loose	Density Index <15%	
		HP	Hand Penetrometer test (UCS kPa)		L	Loose	Density Index 15 - 35%	
					MD	Medium Dense	Density Index 35 - 65%	
					D	Dense	Density Index 65 - 85%	
					VD	Very Dense	Density Index 85 - 100%	

ENGINEERING LOG - TEST PIT

CLIENT: CENTRAL COAST INDUSTRY CONNECT PTY LTD
PROJECT: DETAILED SITE INVESTIGATION
LOCATION: 2-4 BROWNEE STREET, OURIMBAH

TEST PIT NO: TP115
PAGE: 1 OF 1
JOB NO: NEW23P-0208
LOGGED BY: TH
DATE: 24/10/24

EQUIPMENT TYPE: 5.5 Tonne Excavator with 450mm Bucket
TEST PIT LENGTH: 2.0 m **WIDTH:** 0.5 m
SURFACE RL:
DATUM:

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics,colour,minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	
E	Not Encountered	E				CI	TOPSOIL: Silty Sandy CLAY - low to medium plasticity, dark brown, fine to coarse grained sand, root affected top 100mm.	M > w _p				TOPSOIL
		0.10m					0.20m					Silty CLAY - fines of low plasticity, pale brown to pale grey, trace fine grained sand.
		0.20m				CL						
		E					0.30m					
				0.5			Hole Terminated at 0.50 m					
				1.0								

LEGEND:		Notes, Samples and Tests		Consistency		UCS (kPa)	Moisture Condition
Water		U ₃₀	50mm Diameter tube sample	VS	Very Soft	<25	D Dry
Water Level (Date and time shown)		CBR	Bulk sample for CBR testing	S	Soft	25 - 50	M Moist
Water Inflow		E	Environmental sample (Glass jar, sealed and chilled on site)	F	Firm	50 - 100	W Wet
Water Outflow		ASS	Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)	St	Stiff	100 - 200	W _p Plastic Limit
Strata Changes		B	Bulk Sample	VSt	Very Stiff	200 - 400	W _L Liquid Limit
Gradational or transitional strata				H	Hard	>400	
Definitive or distinct strata change				Fb	Friable		
Field Tests		PID	Photoionisation detector reading (ppm)	Density	V	Very Loose	Density Index <15%
DCP(x-y)					L	Loose	Density Index 15 - 35%
HP					MD	Medium Dense	Density Index 35 - 65%
					D	Dense	Density Index 65 - 85%
					VD	Very Dense	Density Index 85 - 100%

ENGINEERING LOG - TEST PIT

CLIENT: CENTRAL COAST INDUSTRY CONNECT PTY LTD
PROJECT: DETAILED SITE INVESTIGATION
LOCATION: 2-4 BROWNEE STREET, OURIMBAH

TEST PIT NO: TP116
PAGE: 1 OF 1
JOB NO: NEW23P-0208
LOGGED BY: TH
DATE: 24/10/24

EQUIPMENT TYPE: 5.5 Tonne Excavator with 450mm Bucket
TEST PIT LENGTH: 2.0 m **WIDTH:** 0.5 m
SURFACE RL:
DATUM:

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	
E	Not Encountered	E				CI	TOPSOIL: Silty Sandy CLAY - low to medium plasticity, dark brown, fine to coarse grained sand, root affected top 100mm.	M > w _p				TOPSOIL
		0.10m					Silty CLAY - fines of low plasticity, pale brown to pale grey, trace fine grained sand.					ALLUVIUM
		0.20m										
		E										
	0.30m	CL										
				0.5			Hole Terminated at 0.50 m					
				1.0								

LEGEND:		Notes, Samples and Tests		Consistency		UCS (kPa)	Moisture Condition
Water		U ₃₀ 50mm Diameter tube sample		VS	Very Soft	<25	D Dry
Water Level (Date and time shown)		CBR Bulk sample for CBR testing		S	Soft	25 - 50	M Moist
Water Inflow		E Environmental sample (Glass jar, sealed and chilled on site)		F	Firm	50 - 100	W Wet
Water Outflow		ASS Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)		St	Stiff	100 - 200	W _p Plastic Limit
Strata Changes		B Bulk Sample		VSt	Very Stiff	200 - 400	W _L Liquid Limit
Gradational or transitional strata		Field Tests		H	Hard	>400	
Definitive or distinct strata change		PID Photoionisation detector reading (ppm)		Fb	Friable		
		DCP(x-y) Dynamic penetrometer test (test depth interval shown)		Density	V Very Loose		Density Index <15%
		HP Hand Penetrometer test (UCS kPa)			L Loose		Density Index 15 - 35%
					MD Medium Dense		Density Index 35 - 65%
					D Dense		Density Index 65 - 85%
					VD Very Dense		Density Index 85 - 100%

APPENDIX D:

Data Validation Report

QA/QC DATA VALIDATION REPORT**Job No: NEW23P-0208-ABv2****Eurofins report: 1040841-S, 1040841-AID, 1153637-S, 1153637-W, 1153637-AID****SGS reports: SE256312****1. SAMPLE HANDLING**

Item	Yes/No	Comments
Were the sample holding times met?	Yes	
Were the samples in proper custody between collection in the field and reaching the laboratory?	Yes	
Were the samples properly and adequately preserved?	Yes	
Were the samples received by the laboratory in good condition?	Yes	

Sampling Handling was:

Satisfactory :	✓	Partially Satisfactory:	Unsatisfactory:
-----------------------	---	--------------------------------	------------------------

2. PRECISION AND ACCURACY ASSESSMENT

Item	Yes/No	Comment
Was a NATA registered laboratory used?	Yes	-
Did the laboratory perform the requested tests?	Yes	-
Were the laboratory methods adopted NATA endorsed?	Yes	-
Were the appropriate test procedures followed?	Yes	-
Were the reporting limits satisfactory?	Yes	-
Was the NATA seal on the reports?	Yes	-
Were the reports signed by an authorised person?	Yes	-

Laboratory Precision and Accuracy was:

Satisfactory :	✓	Partially Satisfactory:	Unsatisfactory:
-----------------------	---	--------------------------------	------------------------

3. FIELD QA/QC**Soil and Water Samples**

	Soil
No. Samples Analysed	50
No. of Duplicates	3
No. of Triplicates	1
No. of Wash Blanks	0
No. of Trip Blanks	1
No. of Trip Spikes	0

No. Days Sampling

Item	Soil
Number of Days Sampling	2
Number of Sampling Events	2

Field Duplicates

Item	Yes/No	Comments
Were an adequate number of field duplicates collected?	Yes	
Were RPDs within control limits? No Limit for 5-10 x EQL and 30% for >10 x EQL	No	RPDs were within the acceptable range with the exception of: • Duplicate pair TP10_0.0-0.2/D1.11.23 for lead (53%) and zinc (58%); • Triplicate pair TP10_0.0-0.2/T.1.11.23 for lead (70%) and zinc (76%); and, • Duplicate pair TP101_0.0-0.1/D2.25.10.24 for lead (64%) and zinc (42%). This RPD is considered to be due to the heterogeneous distribution of metal contaminants in surface soils adjacent to buildings, and is not considered to affect the data representativeness and usability. It is noted that low concentrations can exaggerate the percentage differences with respect to small total concentrations, therefore where results for primary and duplicate sample were less than 10 times the LOR, the RPDs have been disregarded.

Trip Blanks/Trip Spikes

Item	Yes/No	Comments
Were an adequate number of trip blanks and trip spikes collected?	Yes	Trip blanks and trip spikes were not deemed necessary based on field observations, and primary contaminants of concern for the site. No odours or staining was observed. One trip blank was collected with the sampling event on the 25 October 2024.
Were the trip blanks free of contaminants? (If no, comment whether the contaminants present are also detected in the samples and whether they are common laboratory chemicals).	Yes	
Were the trip spikes within recovery limits (between 80% and 120%)	NA	

Rinsate Samples

Item	Yes/No	Comments
Were an adequate number of rinsate samples used? (1 per day of using reusable sampling equipment – trowel, hand auger etc)	Yes	Surface samples were collected with the aid of the excavator, with the exception of SS117 which was collected by hand (no tools were used). Therefore, no reusable equipment requiring rinsate samples were used.
Were the rinsate samples free of contaminants? (If no, comment whether the contaminants present are also detected in the samples and whether they are common laboratory chemicals).	NA	

4. LABORATORY INTERNAL QUALITY CONTROL PROCEDURES

A) Type of QA/QC Sample	Yes/No	Comments
Laboratory Blanks/Reagent Blanks (at least 1 per batch)	Yes	-
Laboratory Duplicates (at least 1 per batch or 1 per 10 samples)	Yes	-
Matrix Spikes, Matrix Spike Duplicates (1 for each soil type)	Yes	-
Laboratory Control Spike	Yes	-
Surrogate (where appropriate)	Yes	-

Item	Yes/No	Comments
B) Were the laboratory blanks and/or reagent blanks free of contamination?	Yes	-
C) Were the spike recoveries within control limits? I: Organics/inorganics/metals (50% to 150%) II: Phenols (20% to 130%)	Yes	Matrix spike recoveries were within the control limits with the exception of a variety of OCPS and zinc in Batch SE256312. For OCPS, the lab quoted code 9 which states "Recovery failed acceptance criteria due to sample heterogeneity". For zinc, the lab quoted code 5 which states "Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level)". Based on this, the recoveries are unlikely to affect the data usability. The matrix spike recoveries could mean that concentrations are theoretically higher or lower than that reported, however as OCPs were reported <LOR, and zinc concentrations were well below the adopted criteria, this does not affect the outcome of the assessment.
D) Were the RPDs of the laboratory duplicates within control limits?	Yes	For copper the lab quoted code Q15 which states: "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." Based on this, the RPD is acceptable.
E) Were the surrogate recoveries within control limits?	Yes	-

Laboratory Internal QA/QC was:

Satisfactory :	✓	Partially Satisfactory:	Unsatisfactory:
-----------------------	---	--------------------------------	------------------------

5. DATA USABILITY

Item	Yes/No	Comments
Was the data directly usable?	Yes	
Was the data usable with the following corrections/modifications? (see comments)	NA	
Was the data not usable?	NA	

APPENDIX E:

Laboratory Documents



CHAIN OF CUSTODY RECORD

Eurofins | Environment Testing | ABN 50 005 085 521

☐ Sydney Laboratory
Unit F3 Bid F 16 Mars Road Lane Cove West NSW 2306
02 9900 8400 EnviroSampleNSW@eurofins.com

☐ Brisbane Laboratory
Unit 1 21 Smallwood Place Murarie QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

☐ Perth Laboratory
Unit 2 91 Leach Highway Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

☐ Melbourne Laboratory
6 Monterey Road Dandenong South VIC 3175
03 8564 5000 EnviroSampleVic@eurofins.com

1/8

Company	Qualtest	Project No	NEW23P-0208				Project Manager	Emma Coleman				Sampler(s)	Tom Hall				
Address	2 Murray Dwyer Circuit, Mayfield West NSW 2304	Project Name	Detailed Site Investigation - Ourimbah				EDD Format	Excel				Handed over by					
		Analyses When metals are requested, please specify "Total" or "Filterable". SUITE code must be used to attract SUITE pricing.	Suite B7 (TRH, BTEX, PAHs, Metals)	Asbestos (%w/w)	Suite B13 (OCPs, PCBs)					Email for Invoice	accounts@qualtest.com.au						
						Email for Results	libbybetz@qualtest.com.au emmacoleman@qualtest.com.au tomhall@qualtest.com.au billysnow@qualtest.com.au										
						Containers Change container type & size if necessary.		Required Turnaround Time (TAT) Default will be 5 days if not stated.									
						500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	Microbiological	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	Surcharge will apply ☐ Overnight (reporting by 9am) ♦ ☐ Same day ♦ ☐ 1 day ♦ ☐ 2 days ♦ ☐ 3 days ♦ ☒ 5 days (Standard) ☐ Other()			
Contact Name	Emma Coleman																
Phone No	0429 359 411																
Special Directions																	
Purchase Order																	
Quote ID No	180622QUAN-3																
No	Client Sample ID	Sampled Date/Time dd/mm/yyyy hh:mm	Matrix Solid (S) Water (W)														
1	TP01 0.0-0.2	1/11/23	Soil	X	X									1	1		
2	TP01 0.4-0.5	1/11/23	Soil	X										1	1		
3	TP01 0.9-1.0	1/11/23	Soil											1			
4	TP04 0.0-0.2	1/11/23	Soil	X										1	1		
5	TP04 0.4-0.5	1/11/23	Soil											1	1		
6	TP04 0.9-1.0	1/11/23	Soil											1			
7	TP05 0.0-0.2	1/11/23	Soil	X	X	X								1	1		
8	TP05 0.4-0.5	1/11/23	Soil											1	1		
9	TP05 0.9-1.0	1/11/23	Soil											1	1		
10	TP05 1.4-1.5	1/11/23	Soil											1			
				4	2	1								10	7		
met hod	☐ Courier (#) ☐ Hand Delivered ☐ Postal		Name		Signature		Date		Time		Temperature		Report No				
Lab	Received By	J.Randall	PER ADL NTL DRW		Signature		Date		2-11		Time		3:13				
	Received By		PER ADL NTL DRW		Signature		Date				Time						

Eurofins

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | Environment Testing Standard Terms and Conditions unless agreed otherwise. A copy is available on request.

CHAIN OF CUSTODY RECORD

Eurofins | Environment Testing ABN 50 005 085 521

☐ **Sydney Laboratory**
Unit F3 Bld.F 16 Mars Road Lane Cove West NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

☐ **Brisbane Laboratory**
Unit 1 21 Smallwood Place Murarrie QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

☐ **Perth Laboratory**
Unit 2 91 Leach Highway Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

☐ **Melbourne Laboratory**
6 Monterey Road Dandenong South VIC 3175
03 8564 5000 EnviroSampleVic@eurofins.com

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Eurofins Environment Testing ABN 50 005 085 521						02 9900 8400 EnviroSamp@eurofins.com.au						07 5502 4000 EnviroComp@eurofins.com.au									
Company		Qualitest				Project No		NEW23P-0208				Project Manager		Emma Coleman				Sampler(s)		Tom Hall	
Address		2 Murray Dwyer Circuit, Mayfield West NSW 2304				Project Name		Detailed Site Investigation - Ourimbah				EDD Format ESoils, EQuIS etc.		Excel				Handed over by			
Contact Name		Emma Coleman				Analyses Where metals are requested, please specify "Total" or "Filtered". SUITE code must be used to attract SUITE pricing. Suite B7 (TRH, BTEX, PAHs, Metals) Asbestos (%w/w) Suite B13 (OCPS, PCBs)										Email for Invoice		accounts@qualitest.com.au			
Phone No																Email for Results		libbybetz@qualitest.com.au emmacoleman@qualitest.com.au tomhall@qualitest.com.au billyenow@qualitest.com.au			
Special Directions																Containers Change container type & size if necessary		Required Turnaround Time (TAT) Default will be 5 days if not ticked			
Purchase Order																500mL Plastic		♦ Surcharge will apply			
Quote ID No		180622QUAN-3										250mL Plastic		☐ Overnight (reporting by 9am) ♦							
No	Client Sample ID	Sampled Date/Time dd/mm/yyyy hh:mm		Matrix Soil (S) Water (W)							125mL Plastic		☐ Same day ♦ ☐ 1 day ♦								
1	TP08 0.0-0.2	1/11/23		Soil	X	X					200mL Amber Glass		☐ 2 days ♦ ☐ 3 days ♦								
2	TP08 0.4-0.5	1/11/23		Soil							40mL VOA vial		☒ 5 days (Standard)								
3	TP08 0.9-1.0	1/11/23		Soil							Microbiological		☐ Other()								
4	TP09 0.0-0.2	1/11/23		Soil	X	X					Jar (Glass or HDPE)		Sample Comments / Dangerous Goods Hazard Warning								
5	TP09 0.4-0.5	1/11/23		Soil							Other (Asbestos AS4984, WA Guidelines)										
6	TP09 0.9-1.0	1/11/23		Soil																	
7	TP10 0.0-0.2	1/11/23		Soil	X	X	X					1		1							
8	TP10 0.4-0.5	1/11/23		Soil							1		1								
9	TP10 0.8-0.9	1/11/23		Soil							1										
10	TP11 0.0-0.2	1/11/23		Soil	X	X	X					1									
					4	4	2					10		6							
							Name		Signature		Date		Time								
					☐ Courier (#) ☐ Hand Delivered ☐ Postal																
Lab		Received By		J Brandau		PER ADL NTL DRW		Signature		Date		Time		Temperature							
		Received By				PER ADL NTL DRW		Signature		Date		Time		Report No							

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | Environment Testing Standard Terms and Conditions unless agreed otherwise. A copy is available on request.

CHAIN OF CUSTODY RECORD

Eurplus | Environment Testing ABN 50 005 085 521

☐ **Sydney Laboratory**
Unit F3 Bld.F 16 Mars Road Lane Cove West NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

☐ **Brisbane Laboratory**
Unit 1 21 Smallwood Place Murarie QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

☐ **Perth Laboratory**
Unit 2 91 Leach Highway Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

☐ **Melbourne Laboratory**
6 Monterey Road Dandenong South VIC 3175
03 8564 5000 www.melbourne.vicmetlab.com

3175 3/8

Company		Qualtest		Project No		NEW23P-0208		Project Manager		Emma Coleman		Sampler(s)		Tom Hall				
Address		2 Murray Dwyer Circuit, Mayfield West NSW 2304		Project Name		Detailed Site Investigation - Ourimbah		EDD Format		Excel		Handed over by						
Contact Name		Emma Coleman		Analyses Where matrix is required, please specify 'Total' or 'Filterable'. SUITE code must be used to attract SUITE pricing.		Suite B7 (TRH, BTEX, PAHs, Metals)		Asbestos (%w/w)		Suite B13 (OCs, PCBs)		Suite B4 (TRH, BTEX, PAH)		Email for Invoice		accounts@qualtest.com.au		
Phone No														Email for Results		libbybetz@qualtest.com.au emmacoleman@qualtest.com.au tomhall@qualtest.com.au billysnow@qualtest.com.au		
Special Directions														Containers		Required Turnaround Time (TAT)		
Purchase Order														Change container type & size if necessary		Default will be 5 days if not ticked.		
Quote ID No		180622QUAN-3																
No	Client Sample ID		Sampled Date/Time dd/mm/yyyy hh:mm		Matrix Solid (S) Water (W)													
1	TP11 0.4-0.5		1/11/23		Soil		X X											
2	TP11 0.9-1.0		1/11/23		Soil		X											
3	TP11 1.4-1.5		1/11/23		Soil													
4	TP12 0.0-0.2		1/11/23		Soil				X									
5	TP12 0.4-0.5		1/11/23		Soil		X X											
6	TP12 0.9-1.0		1/11/23		Soil													
7	TP12 1.4-1.5		1/11/23		Soil													
8	SS1		1/11/23		Soil				X									
9	SS2		1/11/23		Soil				X									
10	SS3		1/11/23		Soil				X									
								3		2		1		3				
Lab		Received By		Signature		PER ADL NTL DRW		Signature		Date		Time		Temperature		Report No		
		Received By		Signature		PER ADL NTL DRW		Signature		Date		Time		Report No				

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CHAIN OF CUSTODY RECORD

Eurofins | Environment Testing ABN 50 005 085 521

☐ Sydney Laboratory
Unit F3 Bld F 16 Mars Road Lane Cove West NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

☐ Brisbane Laboratory
Unit 1 21 Smallwood Place Murarrie QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

☐ Perth Laboratory
Unit 2 91 Leach Highway Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

☐ Melbourne Laboratory
6 Monterey Road Dandenong South VIC 3175
03 8564 5000 EnviroSampleVic@eurofins.com

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Company	Qualtest	Project No	NEW23P-0208										Project Manager	Emma Coleman										Sampler(s)	Tom Hall											
Address	2 Murray Dwyer Circuit, Mayfield West NSW 2304		Project Name		Detailed Site Investigation - Ourimbah										EDB Format ESolat, EQSolS etc		Excel										Handed over by									
Contact Name	Emma Coleman		Analysed Where metals are requested, please specify "Total" or "Filtered" SUTTE code must be used to amend SUTTE pricing.	Suite B7 (TRH, BTEX, PAHs, Metals)	Asbestos (%w/w)	Suite B13 (OCs, PCBs)	Metals M8											Email for Invoice		accounts@qualtest.com.au																
Phone No																		Email for Results		libbybetz@qualtest.com.au emmacoleman@qualtest.com.au tomhall@qualtest.com.au billysnow@qualtest.com.au																
Special Directions																		Containers Change container type & size if necessary.		Required Turnaround Time (TAT) Default will be 5 days if not ticked.																
Purchase Order																		500mL Plastic		250mL Plastic		125mL Plastic		200mL Amber Glass		40mL VOA vial		Microbiological		Jar (Glass or HDPE)		Other (Asbestos AS4984, WA Guidelines)		◆ Surcharge will apply ☐ Overnight (reporting by 9am)◆ ☐ Same day◆ ☐ 1 day◆ ☐ 2 days◆ ☐ 3 days◆ ☒ 5 days (Standard) ☐ Other()		
Quote ID No	180622QUAN-3																																			
No	Client Sample ID		Sampled Date/Time dd/mm/yyyy hh:mm		Matrix Solid (S) Water (W)																															
1	SS4		1/11/23		Soil		X		X																											
2	SS5		1/11/23		Soil		X																													
3	SS6		1/11/23		Soil		X		X																											
4	SS7		1/11/23		Soil				X																											
5	SS8		1/11/23		Soil																															
6	SS9		1/11/23		Soil				X																											
7	SS10		1/11/23		Soil				X																											
8	SS11		1/11/23		Soil				X																											
9	SS12		1/11/23		Soil				X																											
10	SS13		1/11/23		Soil				X																											
							3		8																											
hod																																				
			☐ Courier (#)		☐ Hand Delivered		☐ Postal		Name												Signature		Date		Time											
Lab			Received By		Jlondall		{ PER ADL NTL DRW		Signature												Date		2-11		Time		310		Temperature		5.6					
			Received By				{ PER ADL NTL DRW		Signature												Date				Time				Report No							
Eurofins																																				

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CHAIN OF CUSTODY RECORD

Eurofins | Environment Testing ABN 50 005 085 521

☐ Sydney Laboratory
Unit F3 Bld.F 16 Mars Road Lane Cove West NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

☐ Brisbane Laboratory
Unit 1 21 Smallwood Place Murarie QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

☐ Perth Laboratory
Unit 2 91 Leach Highway Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

☐ Melbourne Laboratory
6 Monterey Road Dandenong South VIC 3175
03 8564 5000 EnviroSampleVic@eurofins.com

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Company		Qualitest		Project No		NEW23P-0208		Project Manager		Emma Coleman		Sampler(s)		Tom Hall	
Address		2 Murray Dwyer Circuit, Mayfield West NSW 2304		Project Name		Detailed Site Investigation - Ourimbah		EDD Format		Excel		Handed over by			
Contact Name		Emma Coleman		Analyses Where matrix are requested, please specify "Total" or "Filtered". SUITE code must be used to attach SUITE pricing. Suite B7 (TRH, BTEX, PAHs, Metals) Asbestos (%w/w) Suite B13 (OCPs, PCBs) Chromium Reducible Sulfur Suite Metals M8								Email for Invoice		accounts@qualitest.com.au	
Phone No												Email for Results		libbybetz@qualitest.com.au emmacoleman@qualitest.com.au tomhall@qualitest.com.au billysnow@qualitest.com.au	
Special Directions															
Purchase Order															
Quote ID No		180622QUAN-3													
No		Client Sample ID		Sampled Date/Time		Matrix									
				dd/mm/yyyy hh:mm		Solid (S) Water (W)									
1		SS14		1/11/23		Soil		X		X		X			
2		SS15		1/11/23		Soil						X		X	
3		SS16		1/11/23		Soil		X		X					
4		SS17		1/11/23		Soil		X				X			
5		SS18		1/11/23		Soil		X		X					
6		TP01 1.4-1.5		1/11/23		Soil						X			
7		TP04 2.0-2.1		1/11/23		Soil						X			
8		TP04 2.5-2.6		1/11/23		Soil						X			
9		TP06 2.4-2.5		1/11/23		Soil						X			
10		TP10 0.8-0.9		1/11/23		Soil						X			
								4		3		3		5	
								1							
Lab		hod		☐ Courier (#) ☐ Hand Delivered ☐ Postal		Name		Signature		Date		Time		Time	
Received By		J. Randau		PER ADL NTL DRW		Signature		[Signature]		Date		2-11		Time	
Received By				PER ADL NTL DRW		Signature				Date		3-10		Time	
Report No															



☐ Sydney Laboratory

Brisbane Laboratory

☐ Perth Laboratory☐ Melbourne Laboratory

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Qualtest
2 Murray Dwyer Circuit
Mayfield West
NSW 2304



NATA Accredited
Accreditation Number 1261
Site Number 18217

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: **Emma Coleman**

Report **1040841-S**
 Project name **Detailed Site Investigation - Ourimbah**
 Project ID **NEW23P-0208**
 Received Date **Nov 02, 2023**

Client Sample ID			TP01 0.0-0.2	TP01 0.4-0.5	TP04 0.0-0.2	G01-TP05 0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23- No0006851	N23- No0006852	N23- No0006853	N23- No0006854
Date Sampled			Nov 01, 2023	Nov 01, 2023	Nov 01, 2023	Nov 01, 2023
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	43	< 20	26	< 20
TRH C15-C28	50	mg/kg	2100	70	440	< 50
TRH C29-C36	50	mg/kg	2500	72	740	71
TRH C10-C36 (Total)	50	mg/kg	4643	142	1206	71
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	94	95	111	97
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	69	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			TP01 0.0-0.2	TP01 0.4-0.5	TP04 0.0-0.2	G01-TP05 0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23-No0006851	N23-No0006852	N23-No0006853	N23-No0006854
Date Sampled			Nov 01, 2023	Nov 01, 2023	Nov 01, 2023	Nov 01, 2023
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	97	103	98	93
p-Terphenyl-d14 (surr.)	1	%	86	92	97	83
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	69	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	3900	120	950	< 100
TRH >C34-C40	100	mg/kg	1200	< 100	500	< 100
TRH >C10-C40 (total)*	100	mg/kg	5169	120	1450	< 100
Heavy Metals						
Arsenic	2	mg/kg	14	< 2	5.8	4.2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	1.4	< 0.4
Chromium	5	mg/kg	51	10	19	17
Copper	5	mg/kg	17	6.6	100	23
Lead	5	mg/kg	57	15	90	25
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5	16	13
Zinc	5	mg/kg	120	24	1300	110
Sample Properties						
% Moisture	1	%	12	16	15	15
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	-	-	< 1
4,4'-DDD	0.05	mg/kg	-	-	-	< 0.5
4,4'-DDE	0.05	mg/kg	-	-	-	< 0.5
4,4'-DDT	0.05	mg/kg	-	-	-	< 0.5
a-HCH	0.05	mg/kg	-	-	-	< 0.5
Aldrin	0.05	mg/kg	-	-	-	< 0.5
b-HCH	0.05	mg/kg	-	-	-	< 0.5
d-HCH	0.05	mg/kg	-	-	-	< 0.5
Dieldrin	0.05	mg/kg	-	-	-	< 0.5
Endosulfan I	0.05	mg/kg	-	-	-	< 0.5
Endosulfan II	0.05	mg/kg	-	-	-	< 0.5
Endosulfan sulphate	0.05	mg/kg	-	-	-	< 0.5
Endrin	0.05	mg/kg	-	-	-	< 0.5
Endrin aldehyde	0.05	mg/kg	-	-	-	< 0.5
Endrin ketone	0.05	mg/kg	-	-	-	< 0.5
g-HCH (Lindane)	0.05	mg/kg	-	-	-	< 0.5
Heptachlor	0.05	mg/kg	-	-	-	< 0.5
Heptachlor epoxide	0.05	mg/kg	-	-	-	< 0.5
Hexachlorobenzene	0.05	mg/kg	-	-	-	< 0.5
Methoxychlor	0.05	mg/kg	-	-	-	< 0.5
Toxaphene	0.5	mg/kg	-	-	-	< 10
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	-	-	< 0.5
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	-	-	< 0.5
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	-	-	< 1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	-	-	< 1

Client Sample ID			TP01 0.0-0.2	TP01 0.4-0.5	TP04 0.0-0.2	G01-TP05 0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23- No0006851	N23- No0006852	N23- No0006853	N23- No0006854
Date Sampled			Nov 01, 2023	Nov 01, 2023	Nov 01, 2023	Nov 01, 2023
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Dibutylchlorendate (surr.)	1	%	-	-	-	76
Tetrachloro-m-xylene (surr.)	1	%	-	-	-	111
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	-	-	-	< 1
Aroclor-1221	0.1	mg/kg	-	-	-	< 1
Aroclor-1232	0.1	mg/kg	-	-	-	< 1
Aroclor-1242	0.1	mg/kg	-	-	-	< 1
Aroclor-1248	0.1	mg/kg	-	-	-	< 1
Aroclor-1254	0.1	mg/kg	-	-	-	< 1
Aroclor-1260	0.1	mg/kg	-	-	-	< 1
Total PCB*	0.1	mg/kg	-	-	-	< 1
Dibutylchlorendate (surr.)	1	%	-	-	-	76
Tetrachloro-m-xylene (surr.)	1	%	-	-	-	111

Client Sample ID			TP08 0.0-0.2	TP09 0.0-0.2	G01-TP10 0.0-0.2	G01-TP11 0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23- No0006855	N23- No0006856	N23- No0006857	N23- No0006858
Date Sampled			Nov 01, 2023	Nov 01, 2023	Nov 01, 2023	Nov 01, 2023
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	140	98	< 50	82
TRH C29-C36	50	mg/kg	260	160	92	160
TRH C10-C36 (Total)	50	mg/kg	400	258	92	242
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	101	101	74	67
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			TP08 0.0-0.2	TP09 0.0-0.2	G01TP10 0.0-0.2	G01TP11 0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23- No0006855	N23- No0006856	N23- No0006857	N23- No0006858
Date Sampled			Nov 01, 2023	Nov 01, 2023	Nov 01, 2023	Nov 01, 2023
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	100	90	80	84
p-Terphenyl-d14 (surr.)	1	%	105	108	86	85
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	310	210	< 100	180
TRH >C34-C40	100	mg/kg	220	< 100	110	180
TRH >C10-C40 (total)*	100	mg/kg	530	210	110	360
Heavy Metals						
Arsenic	2	mg/kg	4.0	7.5	2.7	2.8
Cadmium	0.4	mg/kg	< 0.4	0.4	< 0.4	< 0.4
Chromium	5	mg/kg	21	16	28	14
Copper	5	mg/kg	44	55	32	37
Lead	5	mg/kg	48	68	170	70
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	15	11	33	21
Zinc	5	mg/kg	320	800	290	100
Sample Properties						
% Moisture	1	%	12	20	6.8	5.4
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	-	< 1	< 1
4,4'-DDD	0.05	mg/kg	-	-	< 0.5	< 0.5
4,4'-DDE	0.05	mg/kg	-	-	< 0.5	< 0.5
4,4'-DDT	0.05	mg/kg	-	-	< 0.5	< 0.5
a-HCH	0.05	mg/kg	-	-	< 0.5	< 0.5
Aldrin	0.05	mg/kg	-	-	< 0.5	< 0.5
b-HCH	0.05	mg/kg	-	-	< 0.5	< 0.5
d-HCH	0.05	mg/kg	-	-	< 0.5	< 0.5
Dieldrin	0.05	mg/kg	-	-	< 0.5	< 0.5
Endosulfan I	0.05	mg/kg	-	-	< 0.5	< 0.5
Endosulfan II	0.05	mg/kg	-	-	< 0.5	< 0.5
Endosulfan sulphate	0.05	mg/kg	-	-	< 0.5	< 0.5
Endrin	0.05	mg/kg	-	-	< 0.5	< 0.5
Endrin aldehyde	0.05	mg/kg	-	-	< 0.5	< 0.5
Endrin ketone	0.05	mg/kg	-	-	< 0.5	< 0.5
g-HCH (Lindane)	0.05	mg/kg	-	-	< 0.5	< 0.5
Heptachlor	0.05	mg/kg	-	-	< 0.5	< 0.5

Client Sample ID			TP08 0.0-0.2	TP09 0.0-0.2	G01TP10 0.0-0.2	G01TP11 0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23-No0006855	N23-No0006856	N23-No0006857	N23-No0006858
Date Sampled			Nov 01, 2023	Nov 01, 2023	Nov 01, 2023	Nov 01, 2023
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Heptachlor epoxide	0.05	mg/kg	-	-	< 0.5	< 0.5
Hexachlorobenzene	0.05	mg/kg	-	-	< 0.5	< 0.5
Methoxychlor	0.05	mg/kg	-	-	< 0.5	< 0.5
Toxaphene	0.5	mg/kg	-	-	< 10	< 10
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	-	< 0.5	< 0.5
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	-	< 0.5	< 0.5
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	-	< 1	< 1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	-	< 1	< 1
Dibutylchlorendate (surr.)	1	%	-	-	63	87
Tetrachloro-m-xylene (surr.)	1	%	-	-	92	103
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	-	-	< 1	< 1
Aroclor-1221	0.1	mg/kg	-	-	< 1	< 1
Aroclor-1232	0.1	mg/kg	-	-	< 1	< 1
Aroclor-1242	0.1	mg/kg	-	-	< 1	< 1
Aroclor-1248	0.1	mg/kg	-	-	< 1	< 1
Aroclor-1254	0.1	mg/kg	-	-	< 1	< 1
Aroclor-1260	0.1	mg/kg	-	-	< 1	< 1
Total PCB*	0.1	mg/kg	-	-	< 1	< 1
Dibutylchlorendate (surr.)	1	%	-	-	63	87
Tetrachloro-m-xylene (surr.)	1	%	-	-	92	103

Client Sample ID			TP11 0.4-0.5	TP11 0.9-1.0	G01TP12 0.0-0.2	TP12 0.4-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23-No0006859	N23-No0006860	N23-No0006861	N23-No0006862
Date Sampled			Nov 01, 2023	Nov 01, 2023	Nov 01, 2023	Nov 01, 2023
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	-	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	-	< 20
TRH C15-C28	50	mg/kg	56	< 50	-	< 50
TRH C29-C36	50	mg/kg	140	< 50	-	56
TRH C10-C36 (Total)	50	mg/kg	196	< 50	-	56
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	106	61	-	103
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	-	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	-	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	-	< 20

Client Sample ID			TP11 0.4-0.5	TP11 0.9-1.0	G01 TP12 0.0-0.2	TP12 0.4-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23- No0006859	N23- No0006860	N23- No0006861	N23- No0006862
Date Sampled			Nov 01, 2023	Nov 01, 2023	Nov 01, 2023	Nov 01, 2023
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	-	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	-	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
2-Fluorobiphenyl (surr.)	1	%	99	94	-	99
p-Terphenyl-d14 (surr.)	1	%	106	95	-	108
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	< 50	-	< 50
TRH >C16-C34	100	mg/kg	140	< 100	-	< 100
TRH >C34-C40	100	mg/kg	150	< 100	-	< 100
TRH >C10-C40 (total)*	100	mg/kg	290	< 100	-	< 100
Heavy Metals						
Arsenic	2	mg/kg	3.7	5.1	-	2.8
Cadmium	0.4	mg/kg	< 0.4	< 0.4	-	< 0.4
Chromium	5	mg/kg	15	12	-	16
Copper	5	mg/kg	35	18	-	13
Lead	5	mg/kg	120	45	-	18
Mercury	0.1	mg/kg	0.2	< 0.1	-	< 0.1
Nickel	5	mg/kg	8.8	7.7	-	< 5
Zinc	5	mg/kg	160	81	-	27
Sample Properties						
% Moisture	1	%	17	20	10	12
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	-	< 1	-
4,4'-DDD	0.05	mg/kg	-	-	< 0.5	-
4,4'-DDE	0.05	mg/kg	-	-	< 0.5	-
4,4'-DDT	0.05	mg/kg	-	-	< 0.5	-
a-HCH	0.05	mg/kg	-	-	< 0.5	-
Aldrin	0.05	mg/kg	-	-	< 0.5	-
b-HCH	0.05	mg/kg	-	-	< 0.5	-
d-HCH	0.05	mg/kg	-	-	< 0.5	-
Dieldrin	0.05	mg/kg	-	-	< 0.5	-

Client Sample ID			TP11 0.4-0.5	TP11 0.9-1.0	G01 TP12 0.0-0.2	TP12 0.4-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23- No0006859	N23- No0006860	N23- No0006861	N23- No0006862
Date Sampled			Nov 01, 2023	Nov 01, 2023	Nov 01, 2023	Nov 01, 2023
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Endosulfan I	0.05	mg/kg	-	-	< 0.5	-
Endosulfan II	0.05	mg/kg	-	-	< 0.5	-
Endosulfan sulphate	0.05	mg/kg	-	-	< 0.5	-
Endrin	0.05	mg/kg	-	-	< 0.5	-
Endrin aldehyde	0.05	mg/kg	-	-	< 0.5	-
Endrin ketone	0.05	mg/kg	-	-	< 0.5	-
g-HCH (Lindane)	0.05	mg/kg	-	-	< 0.5	-
Heptachlor	0.05	mg/kg	-	-	< 0.5	-
Heptachlor epoxide	0.05	mg/kg	-	-	< 0.5	-
Hexachlorobenzene	0.05	mg/kg	-	-	< 0.5	-
Methoxychlor	0.05	mg/kg	-	-	< 0.5	-
Toxaphene	0.5	mg/kg	-	-	< 10	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	-	< 0.5	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	-	< 0.5	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	-	< 1	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	-	< 1	-
Dibutylchloredate (surr.)	1	%	-	-	72	-
Tetrachloro-m-xylene (surr.)	1	%	-	-	95	-
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	-	-	< 1	-
Aroclor-1221	0.1	mg/kg	-	-	< 1	-
Aroclor-1232	0.1	mg/kg	-	-	< 1	-
Aroclor-1242	0.1	mg/kg	-	-	< 1	-
Aroclor-1248	0.1	mg/kg	-	-	< 1	-
Aroclor-1254	0.1	mg/kg	-	-	< 1	-
Aroclor-1260	0.1	mg/kg	-	-	< 1	-
Total PCB*	0.1	mg/kg	-	-	< 1	-
Dibutylchloredate (surr.)	1	%	-	-	72	-
Tetrachloro-m-xylene (surr.)	1	%	-	-	95	-

Client Sample ID			SS1	SS2	SS3	SS4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23- No0006863	N23- No0006864	N23- No0006865	N23- No0006866
Date Sampled			Nov 01, 2023	Nov 01, 2023	Nov 01, 2023	Nov 01, 2023
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	21	21	< 20
TRH C15-C28	50	mg/kg	94	120	110	110
TRH C29-C36	50	mg/kg	170	190	160	150
TRH C10-C36 (Total)	50	mg/kg	264	331	291	260
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID Sample Matrix Eurofins Sample No. Date Sampled Test/Reference	LOR	Unit	SS1 Soil N23- No0006863 Nov 01, 2023	SS2 Soil N23- No0006864 Nov 01, 2023	SS3 Soil N23- No0006865 Nov 01, 2023	SS4 Soil N23- No0006866 Nov 01, 2023
BTEX						
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	89	108	103	56
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	105	98	93	96
p-Terphenyl-d14 (surr.)	1	%	86	98	101	109
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	200	250	200	210
TRH >C34-C40	100	mg/kg	150	120	150	< 100
TRH >C10-C40 (total)*	100	mg/kg	350	370	350	210
Heavy Metals						
Arsenic	2	mg/kg	-	-	-	23
Cadmium	0.4	mg/kg	-	-	-	1.0
Chromium	5	mg/kg	-	-	-	23
Copper	5	mg/kg	-	-	-	62
Lead	5	mg/kg	-	-	-	140
Mercury	0.1	mg/kg	-	-	-	< 0.1
Nickel	5	mg/kg	-	-	-	24
Zinc	5	mg/kg	-	-	-	1000
Sample Properties						
% Moisture	1	%	18	19	15	27

Client Sample ID Sample Matrix Eurofins Sample No. Date Sampled Test/Reference	LOR	Unit	SS5 Soil N23- No0006867 Nov 01, 2023	SS6 Soil N23- No0006868 Nov 01, 2023	SS7 Soil N23- No0006869 Nov 01, 2023	SS8 Soil N23- No0006870 Nov 01, 2023
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	-	-
TRH C10-C14	20	mg/kg	< 20	< 20	-	-
TRH C15-C28	50	mg/kg	85	< 50	-	-
TRH C29-C36	50	mg/kg	120	< 50	-	-
TRH C10-C36 (Total)	50	mg/kg	205	< 50	-	-
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	-	-
Toluene	0.1	mg/kg	< 0.1	< 0.1	-	-
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	-	-
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	-	-
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	-	-
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	-	-
4-Bromofluorobenzene (surr.)	1	%	57	INT	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	-	-
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	-	-
TRH C6-C10	20	mg/kg	< 20	< 20	-	-
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	-	-
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.7	0.6	-	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.3	1.2	-	-
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	-	-
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	-	-
Anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	0.8	< 0.5	-	-
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(k)fluoranthene	0.5	mg/kg	0.8	< 0.5	-	-
Chrysene	0.5	mg/kg	1.2	< 0.5	-	-
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Fluoranthene	0.5	mg/kg	1.0	< 0.5	-	-
Fluorene	0.5	mg/kg	< 0.5	< 0.5	-	-
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	-	-
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Pyrene	0.5	mg/kg	1.3	< 0.5	-	-
Total PAH*	0.5	mg/kg	5.1	< 0.5	-	-
2-Fluorobiphenyl (surr.)	1	%	81	94	-	-
p-Terphenyl-d14 (surr.)	1	%	95	95	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	< 50	-	-
TRH >C16-C34	100	mg/kg	170	< 100	-	-
TRH >C34-C40	100	mg/kg	< 100	< 100	-	-
TRH >C10-C40 (total)*	100	mg/kg	170	< 100	-	-

Client Sample ID			SS5	SS6	SS7	SS8
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23-No0006867	N23-No0006868	N23-No0006869	N23-No0006870
Date Sampled			Nov 01, 2023	Nov 01, 2023	Nov 01, 2023	Nov 01, 2023
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	10	3.0	6.7	9.2
Cadmium	0.4	mg/kg	1.2	0.6	< 0.4	< 0.4
Chromium	5	mg/kg	33	11	12	14
Copper	5	mg/kg	41	39	15	46
Lead	5	mg/kg	320	74	24	30
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	15	6.5	7.9	14
Zinc	5	mg/kg	2500	320	67	95
Sample Properties						
% Moisture	1	%	26	14	19	20

Client Sample ID			SS9	SS10	SS11	SS12
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23-No0006871	N23-No0006872	N23-No0006873	N23-No0006874
Date Sampled			Nov 01, 2023	Nov 01, 2023	Nov 01, 2023	Nov 01, 2023
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	4.8	3.8	2.9	4.0
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	12	13	13	11
Copper	5	mg/kg	19	15	24	< 5
Lead	5	mg/kg	19	75	80	30
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	7.5	< 5	7.2	< 5
Zinc	5	mg/kg	73	91	77	37
Sample Properties						
% Moisture	1	%	26	9.9	7.7	17

Client Sample ID			SS13	SS14	SS15	SS16
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23-No0006875	N23-No0006876	N23-No0006877	N23-No0006878
Date Sampled			Nov 01, 2023	Nov 01, 2023	Nov 01, 2023	Nov 01, 2023
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	< 20	-	< 20
TRH C10-C14	20	mg/kg	-	< 20	-	< 20
TRH C15-C28	50	mg/kg	-	170	-	< 50
TRH C29-C36	50	mg/kg	-	250	-	120
TRH C10-C36 (Total)	50	mg/kg	-	420	-	120
BTEX						
Benzene	0.1	mg/kg	-	< 0.1	-	< 0.1
Toluene	0.1	mg/kg	-	< 0.1	-	< 0.1
Ethylbenzene	0.1	mg/kg	-	< 0.1	-	< 0.1
m&p-Xylenes	0.2	mg/kg	-	< 0.2	-	< 0.2
o-Xylene	0.1	mg/kg	-	< 0.1	-	< 0.1

Client Sample ID			SS13	G01SS14	G01SS15	SS16
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23- No0006875	N23- No0006876	N23- No0006877	N23- No0006878
Date Sampled			Nov 01, 2023	Nov 01, 2023	Nov 01, 2023	Nov 01, 2023
Test/Reference	LOR	Unit				
BTEX						
Xylenes - Total*	0.3	mg/kg	-	< 0.3	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	98	-	62
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	-	< 0.5	-	< 0.5
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	-	< 50	-	< 50
TRH C6-C10	20	mg/kg	-	< 20	-	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	-	< 20	-	< 20
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	< 0.5	-	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	0.6	-	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	1.2	-	1.2
Acenaphthene	0.5	mg/kg	-	< 0.5	-	< 0.5
Acenaphthylene	0.5	mg/kg	-	< 0.5	-	< 0.5
Anthracene	0.5	mg/kg	-	< 0.5	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	-	< 0.5
Benzo(b,j)fluoranthene ^{N07}	0.5	mg/kg	-	< 0.5	-	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	-	< 0.5	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5	-	< 0.5
Chrysene	0.5	mg/kg	-	< 0.5	-	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	-	< 0.5	-	< 0.5
Fluoranthene	0.5	mg/kg	-	< 0.5	-	< 0.5
Fluorene	0.5	mg/kg	-	< 0.5	-	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	-	< 0.5	-	< 0.5
Naphthalene	0.5	mg/kg	-	< 0.5	-	< 0.5
Phenanthrene	0.5	mg/kg	-	< 0.5	-	< 0.5
Pyrene	0.5	mg/kg	-	< 0.5	-	< 0.5
Total PAH*	0.5	mg/kg	-	< 0.5	-	< 0.5
2-Fluorobiphenyl (surr.)	1	%	-	102	-	72
p-Terphenyl-d14 (surr.)	1	%	-	105	-	88
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	-	< 50	-	< 50
TRH >C16-C34	100	mg/kg	-	340	-	130
TRH >C34-C40	100	mg/kg	-	160	-	120
TRH >C10-C40 (total)*	100	mg/kg	-	500	-	250
Heavy Metals						
Arsenic	2	mg/kg	2.3	6.9	11	2.5
Cadmium	0.4	mg/kg	< 0.4	1.7	< 0.4	0.4
Chromium	5	mg/kg	13	25	69	11
Copper	5	mg/kg	10	150	19	31
Lead	5	mg/kg	57	200	31	82
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	21	9.0	10
Zinc	5	mg/kg	80	2300	340	160
Sample Properties						
% Moisture	1	%	20	21	16	5.8

Client Sample ID Sample Matrix Eurofins Sample No. Date Sampled Test/Reference	LOR	Unit	SS13 Soil N23- No0006875 Nov 01, 2023	G01SS14 Soil N23- No0006876 Nov 01, 2023	G01SS15 Soil N23- No0006877 Nov 01, 2023	SS16 Soil N23- No0006878 Nov 01, 2023
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	< 1	< 1	-
4,4'-DDD	0.05	mg/kg	-	< 0.5	< 0.5	-
4,4'-DDE	0.05	mg/kg	-	< 0.5	< 0.5	-
4,4'-DDT	0.05	mg/kg	-	< 0.5	< 0.5	-
a-HCH	0.05	mg/kg	-	< 0.5	< 0.5	-
Aldrin	0.05	mg/kg	-	< 0.5	< 0.5	-
b-HCH	0.05	mg/kg	-	< 0.5	< 0.5	-
d-HCH	0.05	mg/kg	-	< 0.5	< 0.5	-
Dieldrin	0.05	mg/kg	-	< 0.5	< 0.5	-
Endosulfan I	0.05	mg/kg	-	< 0.5	< 0.5	-
Endosulfan II	0.05	mg/kg	-	< 0.5	< 0.5	-
Endosulfan sulphate	0.05	mg/kg	-	< 0.5	< 0.5	-
Endrin	0.05	mg/kg	-	< 0.5	< 0.5	-
Endrin aldehyde	0.05	mg/kg	-	< 0.5	< 0.5	-
Endrin ketone	0.05	mg/kg	-	< 0.5	< 0.5	-
g-HCH (Lindane)	0.05	mg/kg	-	< 0.5	< 0.5	-
Heptachlor	0.05	mg/kg	-	< 0.5	< 0.5	-
Heptachlor epoxide	0.05	mg/kg	-	< 0.5	< 0.5	-
Hexachlorobenzene	0.05	mg/kg	-	< 0.5	< 0.5	-
Methoxychlor	0.05	mg/kg	-	< 0.5	< 0.5	-
Toxaphene	0.5	mg/kg	-	< 10	< 10	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	< 0.5	< 0.5	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	< 0.5	< 0.5	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	< 1	< 1	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	< 1	< 1	-
Dibutylchloredate (surr.)	1	%	-	62	96	-
Tetrachloro-m-xylene (surr.)	1	%	-	110	92	-
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	-	< 1	< 1	-
Aroclor-1221	0.1	mg/kg	-	< 1	< 1	-
Aroclor-1232	0.1	mg/kg	-	< 1	< 1	-
Aroclor-1242	0.1	mg/kg	-	< 1	< 1	-
Aroclor-1248	0.1	mg/kg	-	< 1	< 1	-
Aroclor-1254	0.1	mg/kg	-	< 1	< 1	-
Aroclor-1260	0.1	mg/kg	-	< 1	< 1	-
Total PCB*	0.1	mg/kg	-	< 1	< 1	-
Dibutylchloredate (surr.)	1	%	-	62	96	-
Tetrachloro-m-xylene (surr.)	1	%	-	110	92	-

Client Sample ID			G01-SS17	SS18	TP01 1.4-1.5	TP04 2.0-2.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23- No0006879	N23- No0006880	N23- No0006881	N23- No0006882
Date Sampled			Nov 01, 2023	Nov 01, 2023	Nov 01, 2023	Nov 01, 2023
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	-	-
TRH C10-C14	20	mg/kg	< 20	< 20	-	-
TRH C15-C28	50	mg/kg	220	< 50	-	-
TRH C29-C36	50	mg/kg	500	< 50	-	-
TRH C10-C36 (Total)	50	mg/kg	720	< 50	-	-
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	-	-
Toluene	0.1	mg/kg	< 0.1	< 0.1	-	-
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	-	-
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	-	-
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	-	-
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	-	-
4-Bromofluorobenzene (surr.)	1	%	107	60	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	-	-
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	-	-
TRH C6-C10	20	mg/kg	< 20	< 20	-	-
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	-	-
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	-	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	-	-
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	-	-
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	-	-
Anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	-	-
Benzo(g,h,i)perylene	0.5	mg/kg	0.6	< 0.5	-	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	-
Chrysene	0.5	mg/kg	< 0.5	< 0.5	-	-
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	-	-
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	-	-
Fluorene	0.5	mg/kg	< 0.5	< 0.5	-	-
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	-	-
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Pyrene	0.5	mg/kg	< 0.5	< 0.5	-	-
Total PAH*	0.5	mg/kg	0.6	< 0.5	-	-
2-Fluorobiphenyl (surr.)	1	%	112	68	-	-
p-Terphenyl-d14 (surr.)	1	%	107	65	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	< 50	-	-
TRH >C16-C34	100	mg/kg	520	< 100	-	-
TRH >C34-C40	100	mg/kg	550	< 100	-	-
TRH >C10-C40 (total)*	100	mg/kg	1070	< 100	-	-

Client Sample ID			G01-SS17	SS18	TP01 1.4-1.5	TP04 2.0-2.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23- No0006879	N23- No0006880	N23- No0006881	N23- No0006882
Date Sampled			Nov 01, 2023	Nov 01, 2023	Nov 01, 2023	Nov 01, 2023
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	2.6	5.3	-	-
Cadmium	0.4	mg/kg	0.4	< 0.4	-	-
Chromium	5	mg/kg	23	17	-	-
Copper	5	mg/kg	46	5.1	-	-
Lead	5	mg/kg	83	11	-	-
Mercury	0.1	mg/kg	< 0.1	< 0.1	-	-
Nickel	5	mg/kg	32	< 5	-	-
Zinc	5	mg/kg	160	34	-	-
Sample Properties						
% Moisture	1	%	3.7	13	16	24
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 1	-	-	-
4,4'-DDD	0.05	mg/kg	< 0.5	-	-	-
4,4'-DDE	0.05	mg/kg	< 0.5	-	-	-
4,4'-DDT	0.05	mg/kg	< 0.5	-	-	-
a-HCH	0.05	mg/kg	< 0.5	-	-	-
Aldrin	0.05	mg/kg	< 0.5	-	-	-
b-HCH	0.05	mg/kg	< 0.5	-	-	-
d-HCH	0.05	mg/kg	< 0.5	-	-	-
Dieldrin	0.05	mg/kg	< 0.5	-	-	-
Endosulfan I	0.05	mg/kg	< 0.5	-	-	-
Endosulfan II	0.05	mg/kg	< 0.5	-	-	-
Endosulfan sulphate	0.05	mg/kg	< 0.5	-	-	-
Endrin	0.05	mg/kg	< 0.5	-	-	-
Endrin aldehyde	0.05	mg/kg	< 0.5	-	-	-
Endrin ketone	0.05	mg/kg	< 0.5	-	-	-
g-HCH (Lindane)	0.05	mg/kg	< 0.5	-	-	-
Heptachlor	0.05	mg/kg	< 0.5	-	-	-
Heptachlor epoxide	0.05	mg/kg	< 0.5	-	-	-
Hexachlorobenzene	0.05	mg/kg	< 0.5	-	-	-
Methoxychlor	0.05	mg/kg	< 0.5	-	-	-
Toxaphene	0.5	mg/kg	< 10	-	-	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.5	-	-	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.5	-	-	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 1	-	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 1	-	-	-
Dibutylchloredate (surr.)	1	%	120	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	101	-	-	-
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 1	-	-	-
Aroclor-1221	0.1	mg/kg	< 1	-	-	-
Aroclor-1232	0.1	mg/kg	< 1	-	-	-
Aroclor-1242	0.1	mg/kg	< 1	-	-	-
Aroclor-1248	0.1	mg/kg	< 1	-	-	-
Aroclor-1254	0.1	mg/kg	< 1	-	-	-
Aroclor-1260	0.1	mg/kg	< 1	-	-	-
Total PCB*	0.1	mg/kg	< 1	-	-	-
Dibutylchloredate (surr.)	1	%	120	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	101	-	-	-

Client Sample ID			G01SS17	SS18	TP01 1.4-1.5	TP04 2.0-2.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23-No0006879	N23-No0006880	N23-No0006881	N23-No0006882
Date Sampled			Nov 01, 2023	Nov 01, 2023	Nov 01, 2023	Nov 01, 2023
Test/Reference	LOR	Unit				
Chromium Suite						
pH-KCL (NLM-3.1)	0.1	pH Units	-	-	6.4	4.4
Titrateable Actual Acidity (NLM-3.2)	2	mol H+/t	-	-	15	93
Titrateable Actual Acidity (NLM-3.2)	0.003	% pyrite S	-	-	0.024	0.15
Chromium Reducible Sulfur (s-SCr) (NLM-2.1) ^{S04}	0.005	% S	-	-	0.016	0.012
Chromium Reducible Sulfur (a-SCr) (NLM-2.1)	3	mol H+/t	-	-	10	7.4
Sulfur - KCl Extractable	0.005	% S	-	-	N/A	0.006
HCl Extractable Sulfur Correction Factor	1	factor	-	-	2.0	2.0
HCl Extractable Sulfur	0.005	% S	-	-	N/A	0.008
Net Acid soluble sulfur (SNAS) NLM-4.1	0.005	% S	-	-	N/A	< 0.005
Net Acid soluble sulfur (a-SNAS) NLM-4.1	2	mol H+/t	-	-	N/A	< 2
Net Acid soluble sulfur (s-SNAS) NLM-4.1 ^{S02}	0.005	% S	-	-	N/A	< 0.005
Acid Neutralising Capacity - (ANCbt) (NLM-5.2)	0.01	% CaCO3	-	-	N/A	N/A
Acid Neutralising Capacity - (a-ANCbt) (NLM-5.2)	2	mol H+/t	-	-	N/A	N/A
Acid Neutralising Capacity - (s-ANCbt) (NLM-5.2) ^{S03}	0.02	% S	-	-	N/A	N/A
ANC Fineness Factor		factor	-	-	1.5	1.5
CRS Suite - Net Acidity - NASSG (Including ANC)	0.02	% S	-	-	0.04	0.16
CRS Suite - Net Acidity - NASSG (Including ANC)	10	mol H+/t	-	-	26	100
CRS Suite - Liming Rate - NASSG (Including ANC) ^{S01}	1	kg CaCO3/t	-	-	1.9	7.5
Extraneous Material						
<2mm Fraction	0.005	g	-	-	180	130
>2mm Fraction	0.005	g	-	-	< 0.005	< 0.005
Analysed Material	0.1	%	-	-	100	100
Extraneous Material	0.1	%	-	-	< 0.1	< 0.1

Client Sample ID			TP04 2.5-2.6	TP06 2.4-2.5	TP10 0.8-0.9	G01D.1.11.23
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23-No0006883	N23-No0006884	N23-No0006885	N23-No0006886
Date Sampled			Nov 01, 2023	Nov 01, 2023	Nov 01, 2023	Nov 01, 2023
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	-	-	< 20
TRH C10-C14	20	mg/kg	-	-	-	< 20
TRH C15-C28	50	mg/kg	-	-	-	< 50
TRH C29-C36	50	mg/kg	-	-	-	< 50
TRH C10-C36 (Total)	50	mg/kg	-	-	-	< 50
BTEX						
Benzene	0.1	mg/kg	-	-	-	< 0.1
Toluene	0.1	mg/kg	-	-	-	< 0.1
Ethylbenzene	0.1	mg/kg	-	-	-	< 0.1
m&p-Xylenes	0.2	mg/kg	-	-	-	< 0.2
o-Xylene	0.1	mg/kg	-	-	-	< 0.1
Xylenes - Total*	0.3	mg/kg	-	-	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	-	-	56
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	-	-	-	< 0.5
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	-	-	-	< 50
TRH C6-C10	20	mg/kg	-	-	-	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	-	-	-	< 20

Client Sample ID			TP04 2.5-2.6	TP06 2.4-2.5	TP10 0.8-0.9	G01 D.1.11.23
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23- No0006883	N23- No0006884	N23- No0006885	N23- No0006886
Date Sampled			Nov 01, 2023	Nov 01, 2023	Nov 01, 2023	Nov 01, 2023
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	-	-	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	-	-	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	-	-	1.2
Acenaphthene	0.5	mg/kg	-	-	-	< 0.5
Acenaphthylene	0.5	mg/kg	-	-	-	< 0.5
Anthracene	0.5	mg/kg	-	-	-	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	-	-	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	-	-	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	-	-	-	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	-	-	-	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	-	-	< 0.5
Chrysene	0.5	mg/kg	-	-	-	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	-	-	-	< 0.5
Fluoranthene	0.5	mg/kg	-	-	-	< 0.5
Fluorene	0.5	mg/kg	-	-	-	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	-	-	< 0.5
Naphthalene	0.5	mg/kg	-	-	-	< 0.5
Phenanthrene	0.5	mg/kg	-	-	-	< 0.5
Pyrene	0.5	mg/kg	-	-	-	< 0.5
Total PAH*	0.5	mg/kg	-	-	-	< 0.5
2-Fluorobiphenyl (surr.)	1	%	-	-	-	77
p-Terphenyl-d14 (surr.)	1	%	-	-	-	69
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	-	-	-	< 50
TRH >C16-C34	100	mg/kg	-	-	-	< 100
TRH >C34-C40	100	mg/kg	-	-	-	< 100
TRH >C10-C40 (total)*	100	mg/kg	-	-	-	< 100
Heavy Metals						
Arsenic	2	mg/kg	-	-	-	2.1
Cadmium	0.4	mg/kg	-	-	-	< 0.4
Chromium	5	mg/kg	-	-	-	34
Copper	5	mg/kg	-	-	-	30
Lead	5	mg/kg	-	-	-	99
Mercury	0.1	mg/kg	-	-	-	< 0.1
Nickel	5	mg/kg	-	-	-	41
Zinc	5	mg/kg	-	-	-	160
Sample Properties						
% Moisture	1	%	27	24	11	8.2
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	-	-	< 1
4,4'-DDD	0.05	mg/kg	-	-	-	< 0.5
4,4'-DDE	0.05	mg/kg	-	-	-	< 0.5
4,4'-DDT	0.05	mg/kg	-	-	-	< 0.5
a-HCH	0.05	mg/kg	-	-	-	< 0.5
Aldrin	0.05	mg/kg	-	-	-	< 0.5
b-HCH	0.05	mg/kg	-	-	-	< 0.5
d-HCH	0.05	mg/kg	-	-	-	< 0.5
Dieldrin	0.05	mg/kg	-	-	-	< 0.5

Client Sample ID			TP04 2.5-2.6	TP06 2.4-2.5	TP10 0.8-0.9	G01 D.1.11.23
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23- No0006883	N23- No0006884	N23- No0006885	N23- No0006886
Date Sampled			Nov 01, 2023	Nov 01, 2023	Nov 01, 2023	Nov 01, 2023
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Endosulfan I	0.05	mg/kg	-	-	-	< 0.5
Endosulfan II	0.05	mg/kg	-	-	-	< 0.5
Endosulfan sulphate	0.05	mg/kg	-	-	-	< 0.5
Endrin	0.05	mg/kg	-	-	-	< 0.5
Endrin aldehyde	0.05	mg/kg	-	-	-	< 0.5
Endrin ketone	0.05	mg/kg	-	-	-	< 0.5
g-HCH (Lindane)	0.05	mg/kg	-	-	-	< 0.5
Heptachlor	0.05	mg/kg	-	-	-	< 0.5
Heptachlor epoxide	0.05	mg/kg	-	-	-	< 0.5
Hexachlorobenzene	0.05	mg/kg	-	-	-	< 0.5
Methoxychlor	0.05	mg/kg	-	-	-	< 0.5
Toxaphene	0.5	mg/kg	-	-	-	< 10
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	-	-	< 0.5
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	-	-	< 0.5
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	-	-	< 1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	-	-	< 1
Dibutylchlorendate (surr.)	1	%	-	-	-	INT
Tetrachloro-m-xylene (surr.)	1	%	-	-	-	96
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	-	-	-	< 1
Aroclor-1221	0.1	mg/kg	-	-	-	< 1
Aroclor-1232	0.1	mg/kg	-	-	-	< 1
Aroclor-1242	0.1	mg/kg	-	-	-	< 1
Aroclor-1248	0.1	mg/kg	-	-	-	< 1
Aroclor-1254	0.1	mg/kg	-	-	-	< 1
Aroclor-1260	0.1	mg/kg	-	-	-	< 1
Total PCB*	0.1	mg/kg	-	-	-	< 1
Dibutylchlorendate (surr.)	1	%	-	-	-	INT
Tetrachloro-m-xylene (surr.)	1	%	-	-	-	96
Chromium Suite						
pH-KCL (NLM-3.1)	0.1	pH Units	4.1	4.5	4.5	-
Titrateable Actual Acidity (NLM-3.2)	2	mol H+/t	130	56	29	-
Titrateable Actual Acidity (NLM-3.2)	0.003	% pyrite S	0.21	0.090	0.046	-
Chromium Reducible Sulfur (s-SCr) (NLM-2.1) ^{S04}	0.005	% S	0.009	0.016	0.009	-
Chromium Reducible Sulfur (a-SCr) (NLM-2.1)	3	mol H+/t	5.5	10	5.9	-
Sulfur - KCl Extractable	0.005	% S	0.016	< 0.005	N/A	-
HCl Extractable Sulfur Correction Factor	1	factor	2.0	2.0	2.0	-
HCl Extractable Sulfur	0.005	% S	0.017	0.008	N/A	-
Net Acid soluble sulfur (SNAS) NLM-4.1	0.005	% S	< 0.005	0.016	N/A	-
Net Acid soluble sulfur (a-SNAS) NLM-4.1	2	mol H+/t	< 2	7.6	N/A	-
Net Acid soluble sulfur (s-SNAS) NLM-4.1 ^{S02}	0.005	% S	< 0.005	0.012	N/A	-
Acid Neutralising Capacity - (ANCbt) (NLM-5.2)	0.01	% CaCO3	N/A	N/A	N/A	-
Acid Neutralising Capacity - (a-ANCbt) (NLM-5.2)	2	mol H+/t	N/A	N/A	N/A	-
Acid Neutralising Capacity - (s-ANCbt) (NLM-5.2) ^{S03}	0.02	% S	N/A	N/A	N/A	-
ANC Fineness Factor		factor	1.5	1.5	1.5	-
CRS Suite - Net Acidity - NASSG (Including ANC)	0.02	% S	0.22	0.12	0.06	-
CRS Suite - Net Acidity - NASSG (Including ANC)	10	mol H+/t	140	74	35	-
CRS Suite - Liming Rate - NASSG (Including ANC) ^{S01}	1	kg CaCO3/t	10	5.5	2.6	-

Client Sample ID			TP04 2.5-2.6	TP06 2.4-2.5	TP10 0.8-0.9	G01 D.1.11.23
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23- No0006883	N23- No0006884	N23- No0006885	N23- No0006886
Date Sampled			Nov 01, 2023	Nov 01, 2023	Nov 01, 2023	Nov 01, 2023
Test/Reference	LOR	Unit				
Extraneous Material						
<2mm Fraction	0.005	g	110	120	160	-
>2mm Fraction	0.005	g	< 0.005	6.6	9.7	-
Analysed Material	0.1	%	100	95	94	-
Extraneous Material	0.1	%	< 0.1	5.4	5.6	-

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 B4			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Nov 09, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Nov 09, 2023	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Nov 09, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Sydney	Nov 09, 2023	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Nov 09, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Metals M8	Sydney	Nov 09, 2023	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Sydney	Nov 03, 2023	14 Days
- Method: LTM-GEN-7080 Moisture			
Organochlorine Pesticides	Sydney	Nov 09, 2023	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Polychlorinated Biphenyls	Sydney	Nov 09, 2023	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Chromium Reducible Sulfur Suite			
Chromium Suite	Brisbane	Nov 07, 2023	6 Week
- Method: LTM-GEN-7070 Chromium Reducible Sulfur Suite			
Extraneous Material	Brisbane	Nov 07, 2023	6 Week
- Method: LTM-GEN-7050/7070			

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Company Name:

Qualtest

Address:

2 Murray Dwyer Circuit
Mayfield West
NSW 2304

Order No.:

Report #:

1040841

Phone:

02 4968 4468

Fax:

02 4960 9775

Received:

Nov 2, 2023 3:10 PM

Due:

Nov 9, 2023

Priority:

5 Day

Contact Name:

Emma Coleman

Project Name:

Detailed Site Investigation - Ourimbah

Project ID:

NEW23P-0208

Eurofins Analytical Services Manager : Andrew Black

Sample Detail

Sample Detail						Asbestos - W/A guidelines	HOLD	Metals M8	Suite B13: OCP/PCB	Chromium Reductible Sulfur Suite	Moisture Set	Moisture Set	Eurofins Suite B7	Eurofins Suite B4
Melbourne Laboratory - NATA # 1261 Site # 1254								X					X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X		X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794										X	X	X		
External Laboratory														
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID									
1	TP01 0.0-0.2	Nov 01, 2023		Soil	N23-No0006851	X						X	X	
2	TP01 0.4-0.5	Nov 01, 2023		Soil	N23-No0006852							X	X	
3	TP04 0.0-0.2	Nov 01, 2023		Soil	N23-No0006853							X	X	
4	TP05 0.0-0.2	Nov 01, 2023		Soil	N23-No0006854	X			X			X	X	
5	TP08 0.0-0.2	Nov 01, 2023		Soil	N23-No0006855	X						X	X	
6	TP09 0.0-0.2	Nov 01, 2023		Soil	N23-No0006856	X						X	X	
7	TP10 0.0-0.2	Nov 01, 2023		Soil	N23-No0006857	X			X			X	X	
8	TP11 0.0-0.2	Nov 01, 2023		Soil	N23-No0006858	X			X			X	X	
9	TP11 0.4-0.5	Nov 01, 2023		Soil	N23-No0006859	X						X	X	
10	TP11 0.9-1.0	Nov 01, 2023		Soil	N23-No0006860							X	X	
11	TP12 0.0-0.2	Nov 01, 2023		Soil	N23-No0006861				X			X		

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Company Name: Qualtest
Address: 2 Murray Dwyer Circuit
Mayfield West
NSW 2304

Project Name: Detailed Site Investigation - Ourimbah
Project ID: NEW23P-0208

Order No.:
Report #: 1040841
Phone: 02 4968 4468
Fax: 02 4960 9775

Received: Nov 2, 2023 3:10 PM
Due: Nov 9, 2023
Priority: 5 Day
Contact Name: Emma Coleman

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - W/A guidelines	HOLD	Metals M8	Suite B13: OCP/PCB	Chromium Reducible Sulfur Suite	Moisture Set	Moisture Set	Eurofins Suite B7	Eurofins Suite B4
Melbourne Laboratory - NATA # 1261 Site # 1254								X					X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X		X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794										X	X	X		
12	TP12 0.4-0.5	Nov 01, 2023		Soil	N23-No0006862	X						X	X	
13	SS1	Nov 01, 2023		Soil	N23-No0006863							X		X
14	SS2	Nov 01, 2023		Soil	N23-No0006864							X		X
15	SS3	Nov 01, 2023		Soil	N23-No0006865							X		X
16	SS4	Nov 01, 2023		Soil	N23-No0006866	X						X	X	
17	SS5	Nov 01, 2023		Soil	N23-No0006867							X	X	
18	SS6	Nov 01, 2023		Soil	N23-No0006868	X						X	X	
19	SS7	Nov 01, 2023		Soil	N23-No0006869	X		X				X		
20	SS8	Nov 01, 2023		Soil	N23-No0006870			X				X		
21	SS9	Nov 01, 2023		Soil	N23-No0006871	X		X				X		
22	SS10	Nov 01, 2023		Soil	N23-No0006872	X		X				X		
23	SS11	Nov 01, 2023		Soil	N23-No0006873	X		X				X		
24	SS12	Nov 01, 2023		Soil	N23-No0006874	X		X				X		
25	SS13	Nov 01, 2023		Soil	N23-No0006875	X		X				X		

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Company Name: Qualtest
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Mayfield West
NSW 2304

Project Name: Detailed Site Investigation - Ourimbah
Project ID: NEW23P-0208

Order No.:
Report #: 1040841
Phone: 02 4968 4468
Fax: 02 4960 9775

Received: Nov 2, 2023 3:10 PM
Due: Nov 9, 2023
Priority: 5 Day
Contact Name: Emma Coleman

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - W/A guidelines	HOLD	Metals M8	Suite B13: OCP/PCB	Chromium Reductible Sulfur Suite	Moisture Set	Moisture Set	Eurofins Suite B7	Eurofins Suite B4
Melbourne Laboratory - NATA # 1261 Site # 1254								X					X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X		X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794										X	X	X		
26	SS14	Nov 01, 2023		Soil	N23-No0006876	X			X			X	X	
27	SS15	Nov 01, 2023		Soil	N23-No0006877			X	X			X		
28	SS16	Nov 01, 2023		Soil	N23-No0006878	X						X	X	
29	SS17	Nov 01, 2023		Soil	N23-No0006879				X			X	X	
30	SS18	Nov 01, 2023		Soil	N23-No0006880	X						X	X	
31	TP01 1.4-1.5	Nov 01, 2023		Soil	N23-No0006881					X	X			
32	TP04 2.0-2.1	Nov 01, 2023		Soil	N23-No0006882					X	X			
33	TP04 2.5-2.6	Nov 01, 2023		Soil	N23-No0006883					X	X			
34	TP06 2.4-2.5	Nov 01, 2023		Soil	N23-No0006884					X	X			
35	TP10 0.8-0.9	Nov 01, 2023		Soil	N23-No0006885					X	X			
36	D.1.11.23	Nov 01, 2023		Soil	N23-No0006886				X			X	X	
37	TP01 0.9-1.0	Nov 01, 2023		Soil	N23-No0006887		X							
38	TP04 0.4-0.5	Nov 01, 2023		Soil	N23-No0006888		X							
39	TP04 0.9-1.0	Nov 01, 2023		Soil	N23-No0006889		X							

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Melbourne Laboratory - NATA # 1261 Site # 1254								X					X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X		X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794										X	X	X		
40	TP05 0.4-0.5	Nov 01, 2023		Soil	N23-No0006890		X							
41	TP05 0.9-1.0	Nov 01, 2023		Soil	N23-No0006891		X							
42	TP05 1.4-1.5	Nov 01, 2023		Soil	N23-No0006892		X							
43	TP08 0.4-0.5	Nov 01, 2023		Soil	N23-No0006893		X							
44	TP08 0.9-1.0	Nov 01, 2023		Soil	N23-No0006894		X							
45	TP09 0.4-0.5	Nov 01, 2023		Soil	N23-No0006895		X							
46	TP09 0.9-1.0	Nov 01, 2023		Soil	N23-No0006896		X							
47	TP10 0.4-0.5	Nov 01, 2023		Soil	N23-No0006897		X							
48	TP11 1.4-1.5	Nov 01, 2023		Soil	N23-No0006899		X							
49	TP12 0.9-1.0	Nov 01, 2023		Soil	N23-No0006900		X							
50	TP12 1.4-1.5	Nov 01, 2023		Soil	N23-No0006901		X							
51	TP01 0.2-0.3	Nov 01, 2023		Soil	N23-No0007299		X							
Test Counts						19	15	8	8	5	36	36	19	3

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.
- 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 unless otherwise stated.
- 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.
- 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 date of sampling; 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 7 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	µg/L: micrograms per litre
ppm: parts per million	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		

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 like compound to the analyte target and reported as percentage recovery.
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 5.4
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 be used as a guide only 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%

PFAS field samples that contain surrogate recoveries above the QC limit designated in QSM 5.4, where no positive PFAS results have been reported, have been 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							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g,h,i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a,h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
Method Blank							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4,4'-DDD	mg/kg	< 0.05			0.05	Pass	
4,4'-DDE	mg/kg	< 0.05			0.05	Pass	
4,4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-HCH	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-HCH	mg/kg	< 0.05			0.05	Pass	
d-HCH	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-HCH (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	121			70-130	Pass	
TRH C10-C14	%	109			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	114			70-130	Pass	
Toluene	%	126			70-130	Pass	
Ethylbenzene	%	104			70-130	Pass	
m&p-Xylenes	%	105			70-130	Pass	
o-Xylene	%	104			70-130	Pass	
Xylenes - Total*	%	105			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	94			70-130	Pass	
TRH C6-C10	%	98			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	102			70-130	Pass	
Acenaphthylene	%	107			70-130	Pass	
Anthracene	%	96			70-130	Pass	
Benz(a)anthracene	%	103			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(a)pyrene	%	113			70-130	Pass	
Benzo(b&j)fluoranthene	%	107			70-130	Pass	
Benzo(g,h,i)perylene	%	115			70-130	Pass	
Benzo(k)fluoranthene	%	106			70-130	Pass	
Chrysene	%	112			70-130	Pass	
Dibenz(a,h)anthracene	%	103			70-130	Pass	
Fluoranthene	%	92			70-130	Pass	
Fluorene	%	98			70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	103			70-130	Pass	
Naphthalene	%	100			70-130	Pass	
Phenanthrene	%	88			70-130	Pass	
Pyrene	%	99			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	104			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	99			80-120	Pass	
Cadmium	%	105			80-120	Pass	
Chromium	%	102			80-120	Pass	
Copper	%	104			80-120	Pass	
Lead	%	100			80-120	Pass	
Mercury	%	103			80-120	Pass	
Nickel	%	104			80-120	Pass	
Zinc	%	103			80-120	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	78			70-130	Pass	
4,4'-DDD	%	87			70-130	Pass	
4,4'-DDE	%	80			70-130	Pass	
4,4'-DDT	%	91			70-130	Pass	
α-HCH	%	91			70-130	Pass	
Aldrin	%	79			70-130	Pass	
β-HCH	%	83			70-130	Pass	
δ-HCH	%	82			70-130	Pass	
Dieldrin	%	84			70-130	Pass	
Endosulfan I	%	96			70-130	Pass	
Endosulfan II	%	97			70-130	Pass	
Endosulfan sulphate	%	91			70-130	Pass	
Endrin	%	91			70-130	Pass	
Endrin aldehyde	%	81			70-130	Pass	
Endrin ketone	%	93			70-130	Pass	
γ-HCH (Lindane)	%	84			70-130	Pass	
Heptachlor	%	81			70-130	Pass	
Heptachlor epoxide	%	78			70-130	Pass	
Hexachlorobenzene	%	84			70-130	Pass	
Methoxychlor	%	84			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1016	%	104			70-130	Pass	
Aroclor-1260	%	78			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S23-No0008338	NCP	%	100			75-125	Pass	
Cadmium	S23-No0008338	NCP	%	107			75-125	Pass	
Chromium	S23-No0008338	NCP	%	98			75-125	Pass	
Copper	S23-No0008338	NCP	%	102			75-125	Pass	
Lead	S23-No0008338	NCP	%	105			75-125	Pass	
Mercury	S23-No0008338	NCP	%	113			75-125	Pass	
Nickel	S23-No0008338	NCP	%	101			75-125	Pass	
Zinc	S23-No0008338	NCP	%	84			75-125	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	S23-No0014366	NCP	%	74			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S23-Oc0063824	NCP	%	92			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S23-No0014366	NCP	%	88			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	N23-No0006862	CP	%	89			70-130	Pass	
Toluene	N23-No0006862	CP	%	76			70-130	Pass	
Ethylbenzene	N23-No0006862	CP	%	91			70-130	Pass	
m&p-Xylenes	N23-No0006862	CP	%	92			70-130	Pass	
o-Xylene	N23-No0006862	CP	%	90			70-130	Pass	
Xylenes - Total*	N23-No0006862	CP	%	91			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	N23-No0006862	CP	%	80			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	N23-No0006880	CP	%	96			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	N23-No0006880	CP	%	108			70-130	Pass	
Toluene	N23-No0006880	CP	%	102			70-130	Pass	
Ethylbenzene	N23-No0006880	CP	%	95			70-130	Pass	
m&p-Xylenes	N23-No0006880	CP	%	101			70-130	Pass	
o-Xylene	N23-No0006880	CP	%	93			70-130	Pass	
Xylenes - Total*	N23-No0006880	CP	%	98			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH C6-C10	N23-No0006880	CP	%	95			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S23-Oc0071350	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S23-Oc0071223	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S23-Oc0071223	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S23-Oc0071223	NCP	mg/kg	72	75	3.2	30%	Pass	

Duplicate								
BTX				Result 1	Result 2	RPD		
Benzene	S23-Oc0071350	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Toluene	S23-Oc0071350	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Ethylbenzene	S23-Oc0071350	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
m&p-Xylenes	S23-Oc0071350	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
o-Xylene	S23-Oc0071350	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Xylenes - Total*	S23-Oc0071350	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	S23-Oc0071350	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	S23-Oc0071350	NCP	mg/kg	< 20	< 20	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
TRH >C10-C16	S23-Oc0071223	NCP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C16-C34	S23-Oc0071223	NCP	mg/kg	< 100	< 100	<1	30%	Pass
TRH >C34-C40	S23-Oc0071223	NCP	mg/kg	< 100	< 100	<1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	N23-No0006870	CP	mg/kg	9.2	9.9	7.3	30%	Pass
Cadmium	N23-No0006870	CP	mg/kg	< 0.4	0.4	4.8	30%	Pass
Chromium	N23-No0006870	CP	mg/kg	14	15	9.1	30%	Pass
Copper	N23-No0006870	CP	mg/kg	46	51	8.9	30%	Pass
Lead	N23-No0006870	CP	mg/kg	30	32	5.9	30%	Pass
Mercury	N23-No0006870	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	N23-No0006870	CP	mg/kg	14	16	10	30%	Pass
Zinc	N23-No0006870	CP	mg/kg	95	100	8.7	30%	Pass
Duplicate								
Sample Properties				Result 1	Result 2	RPD		
% Moisture	N23-No0006885	CP	%	11	11	<1	30%	Pass
Duplicate								
Chromium Suite				Result 1	Result 2	RPD		
pH-KCL (NLM-3.1)	N23-No0006885	CP	pH Units	4.5	4.5	<1	20%	Pass
Titrateable Actual Acidity (NLM-3.2)	N23-No0006885	CP	mol H+/t	29	29	<1	20%	Pass
Titrateable Actual Acidity (NLM-3.2)	N23-No0006885	CP	% pyrite S	0.046	0.046	<1	30%	Pass
Chromium Reducible Sulfur (s-SCr) (NLM-2.1)	N23-No0006885	CP	% S	0.009	0.009	2.2	20%	Pass
Chromium Reducible Sulfur (a-SCr) (NLM-2.1)	N23-No0006885	CP	mol H+/t	5.9	5.7	2.2	30%	Pass
Sulfur - KCl Extractable	N23-No0006885	CP	% S	N/A	N/A	N/A	30%	Pass
HCl Extractable Sulfur	N23-No0006885	CP	% S	N/A	N/A	N/A	20%	Pass
Net Acid soluble sulfur (SNAS) NLM-4.1	N23-No0006885	CP	% S	N/A	N/A	N/A	30%	Pass
Net Acid soluble sulfur (a-SNAS) NLM-4.1	N23-No0006885	CP	mol H+/t	N/A	N/A	N/A	30%	Pass
Net Acid soluble sulfur (s-SNAS) NLM-4.1	N23-No0006885	CP	% S	N/A	N/A	N/A	30%	Pass
Acid Neutralising Capacity - (ANCbt) (NLM-5.2)	N23-No0006885	CP	% CaCO3	N/A	N/A	N/A	20%	Pass
Acid Neutralising Capacity - (s-ANCbt) (NLM-5.2)	N23-No0006885	CP	% S	N/A	N/A	N/A	30%	Pass
ANC Fineness Factor	N23-No0006885	CP	factor	1.5	1.5	<1	30%	Pass
CRS Suite - Net Acidity - NASSG (Including ANC)	N23-No0006885	CP	% S	0.06	0.06	<1	30%	Pass
CRS Suite - Net Acidity - NASSG (Including ANC)	N23-No0006885	CP	mol H+/t	35	35	<1	30%	Pass
CRS Suite - Liming Rate - NASSG (Including ANC)	N23-No0006885	CP	kg CaCO3/t	2.6	2.6	<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
G01	The LORs have been raised due to matrix interference
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
S01	Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime (CaCO3) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from 'kg/t dry weight' to 'kg/m3 in-situ soil' multiply 'reported results' x 'wet bulk density of soil in t/m3'
S02	Retained Acidity is Reported when the pHKCl is less than pH 4.5
S03	Acid Neutralising Capacity is only required if the pHKCl is greater than or equal to pH 6.5
S04	Acid Sulfate Soil Samples have a 24 hour holding time unless frozen or dried within that period

Authorised by:

Adam Bateup	Analytical Services Manager
Mickael Ros	Senior Analyst-Metal
Sayed Abu	Senior Analyst-Asbestos
Roopesh Rangarajan	Senior Analyst-Volatile
Raymond Siu	Senior Analyst-Volatile
Roopesh Rangarajan	Senior Analyst-Organic
Jonathon Angell	Senior Analyst-SPOCAS
Fang Yee Tan	Senior Analyst-Metal



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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Sample Receipt Advice

Company name:	Qualtest
Contact name:	Emma Coleman
Project name:	Detailed Site Investigation - Ourimbah
Project ID:	NEW23P-0208
Turnaround time:	5 Day
Date/Time received	Nov 2, 2023 3:10 PM
Eurofins reference	1040841

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✓ 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

T.1.11.23 forwarded to SGS. Sample TP10 0.8-0.9 missing. Extra bag with small amount of soil (TP01 0.2-0.3) logged on hold.

Contact

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

Andrew Black on phone : (+61) 2 9900 8490 or by email: AndrewBlack@eurofins.com

Results will be delivered electronically via email to Emma Coleman - emmacoleman@qualtest.com.au.

Note: A copy of these results will also be delivered to the general Qualtest email address.

Qualtest
2 Murray Dwyer Circuit
Mayfield West
NSW 2304



NATA Accredited
Accreditation Number 1261
Site Number 18217

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: Emma Coleman
Report 1040841-AID
Project Name Detailed Site Investigation - Ourimbah
Project ID NEW23P-0208
Received Date Nov 02, 2023
Date Reported Nov 14, 2023

Methodology:

Asbestos Fibre
 Identification

Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques.

NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.

Unknown Mineral
 Fibres

Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity.

NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.

Subsampling Soil
 Samples

The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed.

NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.

Bonded asbestos-
 containing material
 (ACM)

The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination. The resultant material is then further examined in accordance with AS 4964 - 2004.

NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.

Limit of Reporting

The performance limitation of the AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w).

The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk).

NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos". This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.

Project Name Detailed Site Investigation - Ourimbah
Project ID NEW23P-0208
Date Sampled Nov 01, 2023
Report 1040841-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
TP01 0.0-0.2	23-No0006851	Nov 01, 2023	Approximate Sample 743g Sample consisted of: Brown coarse grained sandy clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP05 0.0-0.2	23-No0006854	Nov 01, 2023	Approximate Sample 731g Sample consisted of: Brown coarse grained sandy clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP08 0.0-0.2	23-No0006855	Nov 01, 2023	Approximate Sample 862g Sample consisted of: Brown coarse grained sandy clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP09 0.0-0.2	23-No0006856	Nov 01, 2023	Approximate Sample 538g Sample consisted of: Brown coarse grained sandy clayey soil, corroded metal and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP10 0.0-0.2	23-No0006857	Nov 01, 2023	Approximate Sample 989g Sample consisted of: Brown coarse grained sandy clayey soil, glass, plaster, brick, bitumen and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP11 0.0-0.2	23-No0006858	Nov 01, 2023	Approximate Sample 809g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP11 0.4-0.5	23-No0006859	Nov 01, 2023	Approximate Sample 762g Sample consisted of: Brown coarse grained sandy clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP12 0.4-0.5	23-No0006862	Nov 01, 2023	Approximate Sample 904g Sample consisted of: Brown coarse grained sandy clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
SS4	23-No0006866	Nov 01, 2023	Approximate Sample 788g Sample consisted of: Brown coarse grained sandy clayey soil, brick, corroded metal and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
SS6	23-No0006868	Nov 01, 2023	Approximate Sample 598g Sample consisted of: Brown coarse grained sandy clayey soil, glass, corroded metal and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
SS7	23-No0006869	Nov 01, 2023	Approximate Sample 533g Sample consisted of: Brown coarse grained sandy clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
SS9	23-No0006871	Nov 01, 2023	Approximate Sample 725g Sample consisted of: Brown coarse grained sandy clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
SS10	23-No0006872	Nov 01, 2023	Approximate Sample 833g Sample consisted of: Brown coarse grained sandy clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
SS11	23-No0006873	Nov 01, 2023	Approximate Sample 715g Sample consisted of: Brown coarse grained sandy clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
SS12	23-No0006874	Nov 01, 2023	Approximate Sample 678g Sample consisted of: Brown coarse grained sandy clayey soil, glass and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
SS13	23-No0006875	Nov 01, 2023	Approximate Sample 664g Sample consisted of: Brown coarse grained sandy clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
SS14	23-No0006876	Nov 01, 2023	Approximate Sample 891g Sample consisted of: Brown coarse grained sandy clayey soil, bitumen and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
SS16	23-No0006878	Nov 01, 2023	Approximate Sample 692g Sample consisted of: Brown coarse grained sandy clayey soil, bitumen and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
SS18	23-No0006880	Nov 01, 2023	Approximate Sample 629g Sample consisted of: Brown coarse grained sandy clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.

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
Asbestos - LTM-ASB-8020	Sydney	Nov 03, 2023	Indefinite

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road Dandenong South VIC 3175 Tel: +61 3 8564 5000 NATA# 1261 Site# 1254	19/8 Lewalan Street Grovedale VIC 3216 Tel: +61 3 8564 5000 NATA# 1261 Site# 25403	179 Magowar Road Girraween NSW 2145 Tel: +61 2 9900 8400 NATA# 1261 Site# 18217	Unit 1,2 Dacre Street Mitchell ACT 2911 Tel: +61 2 6113 8091 NATA# 1261 Site# 25466	1/21 Smallwood Place Murarrie QLD 4172 Tel: +61 7 3902 4600 NATA# 1261 Site# 20794	1/2 Frost Drive Mayfield West NSW 2304 Tel: +61 2 4968 8448 NATA# 1261 Site# 25079 & 25289

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

Auckland	Christchurch	Tauranga
35 O'Rorke Road Penrose, Auckland 1061 Tel: +64 9 526 4551 IANZ# 1327	43 Detroit Drive Rolleston, Christchurch 7675 Tel: +64 3 343 5201 IANZ# 1290	1277 Cameron Road, Gate Pa, Tauranga 3112 Tel: +64 9 525 0568 IANZ# 1402

Company Name: Qualtest
Address: 2 Murray Dwyer Circuit
Mayfield West
NSW 2304

Project Name: Detailed Site Investigation - Ourimbah
Project ID: NEW23P-0208

Order No.:
Report #: 1040841
Phone: 02 4968 4468
Fax: 02 4960 9775

Received: Nov 2, 2023 3:10 PM
Due: Nov 9, 2023
Priority: 5 Day
Contact Name: Emma Coleman

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - W/A guidelines	HOLD	Metals M8	Suite B13: OCP/PCB	Chromium Reductible Sulfur Suite	Moisture Set	Moisture Set	Eurofins Suite B7	Eurofins Suite B4
Melbourne Laboratory - NATA # 1261 Site # 1254								X					X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X		X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794										X	X	X		
External Laboratory														
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID									
1	TP01 0.0-0.2	Nov 01, 2023		Soil	N23-No0006851	X						X	X	
2	TP01 0.4-0.5	Nov 01, 2023		Soil	N23-No0006852							X	X	
3	TP04 0.0-0.2	Nov 01, 2023		Soil	N23-No0006853							X	X	
4	TP05 0.0-0.2	Nov 01, 2023		Soil	N23-No0006854	X			X			X	X	
5	TP08 0.0-0.2	Nov 01, 2023		Soil	N23-No0006855	X						X	X	
6	TP09 0.0-0.2	Nov 01, 2023		Soil	N23-No0006856	X						X	X	
7	TP10 0.0-0.2	Nov 01, 2023		Soil	N23-No0006857	X			X			X	X	
8	TP11 0.0-0.2	Nov 01, 2023		Soil	N23-No0006858	X			X			X	X	
9	TP11 0.4-0.5	Nov 01, 2023		Soil	N23-No0006859	X						X	X	
10	TP11 0.9-1.0	Nov 01, 2023		Soil	N23-No0006860							X	X	
11	TP12 0.0-0.2	Nov 01, 2023		Soil	N23-No0006861				X			X		

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road Dandenong South VIC 3175 Tel: +61 3 8564 5000 NATA# 1261 Site# 1254	19/8 Lewalan Street Grovedale VIC 3216 Tel: +61 3 8564 5000 NATA# 1261 Site# 25403	179 Magowar Road Girraween NSW 2145 Tel: +61 2 9900 8400 NATA# 1261 Site# 18217	Unit 1,2 Dacre Street Mitchell ACT 2911 Tel: +61 2 6113 8091 NATA# 1261 Site# 25466	1/21 Smallwood Place Murarrie QLD 4172 Tel: +61 7 3902 4600 NATA# 1261 Site# 20794	1/2 Frost Drive Mayfield West NSW 2304 Tel: +61 2 4968 8448 NATA# 1261 Site# 25079 & 25289

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

Auckland	Christchurch	Tauranga
35 O'Rorke Road Penrose, Auckland 1061 Tel: +64 9 526 4551 IANZ# 1327	43 Detroit Drive Rolleston, Christchurch 7675 Tel: +64 3 343 5201 IANZ# 1290	1277 Cameron Road, Gate Pa, Tauranga 3112 Tel: +64 9 525 0568 IANZ# 1402

Company Name: Qualtest
Address: 2 Murray Dwyer Circuit
Mayfield West
NSW 2304

Order No.:
Report #: 1040841
Phone: 02 4968 4468
Fax: 02 4960 9775

Received: Nov 2, 2023 3:10 PM
Due: Nov 9, 2023
Priority: 5 Day
Contact Name: Emma Coleman

Project Name: Detailed Site Investigation - Ourimbah
Project ID: NEW23P-0208

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - W/A guidelines	HOLD	Metals M8	Suite B13: OCP/PCB	Chromium Reducible Sulfur Suite	Moisture Set	Moisture Set	Eurofins Suite B7	Eurofins Suite B4
Melbourne Laboratory - NATA # 1261 Site # 1254								X					X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X		X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794										X	X	X		
12	TP12 0.4-0.5	Nov 01, 2023		Soil	N23-No0006862	X						X	X	
13	SS1	Nov 01, 2023		Soil	N23-No0006863							X		X
14	SS2	Nov 01, 2023		Soil	N23-No0006864							X		X
15	SS3	Nov 01, 2023		Soil	N23-No0006865							X		X
16	SS4	Nov 01, 2023		Soil	N23-No0006866	X						X	X	
17	SS5	Nov 01, 2023		Soil	N23-No0006867							X	X	
18	SS6	Nov 01, 2023		Soil	N23-No0006868	X						X	X	
19	SS7	Nov 01, 2023		Soil	N23-No0006869	X		X				X		
20	SS8	Nov 01, 2023		Soil	N23-No0006870			X				X		
21	SS9	Nov 01, 2023		Soil	N23-No0006871	X		X				X		
22	SS10	Nov 01, 2023		Soil	N23-No0006872	X		X				X		
23	SS11	Nov 01, 2023		Soil	N23-No0006873	X		X				X		
24	SS12	Nov 01, 2023		Soil	N23-No0006874	X		X				X		
25	SS13	Nov 01, 2023		Soil	N23-No0006875	X		X				X		

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
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46-48 Banksia Road Welshpool WA 6106 Tel: +61 8 6253 4444 NATA# 2377 Site# 2370

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Company Name:

Qualtest

Address:

2 Murray Dwyer Circuit
Mayfield West
NSW 2304

Order No.:

Report #:

1040841

Phone:

02 4968 4468

Fax:

02 4960 9775

Received:

Nov 2, 2023 3:10 PM

Due:

Nov 9, 2023

Priority:

5 Day

Contact Name:

Emma Coleman

Project Name:

Detailed Site Investigation - Ourimbah

Project ID:

NEW23P-0208

Eurofins Analytical Services Manager : Andrew Black

Sample Detail

Sample Detail						Asbestos - W/A guidelines	HOLD	Metals M8	Suite B13: OCP/PCB	Chromium Reductible Sulfur Suite	Moisture Set	Moisture Set	Eurofins Suite B7	Eurofins Suite B4
Melbourne Laboratory - NATA # 1261 Site # 1254								X					X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X		X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794										X	X	X		
26	SS14	Nov 01, 2023		Soil	N23-No0006876	X			X			X	X	
27	SS15	Nov 01, 2023		Soil	N23-No0006877			X	X			X		
28	SS16	Nov 01, 2023		Soil	N23-No0006878	X						X	X	
29	SS17	Nov 01, 2023		Soil	N23-No0006879				X			X	X	
30	SS18	Nov 01, 2023		Soil	N23-No0006880	X						X	X	
31	TP01 1.4-1.5	Nov 01, 2023		Soil	N23-No0006881					X	X			
32	TP04 2.0-2.1	Nov 01, 2023		Soil	N23-No0006882					X	X			
33	TP04 2.5-2.6	Nov 01, 2023		Soil	N23-No0006883					X	X			
34	TP06 2.4-2.5	Nov 01, 2023		Soil	N23-No0006884					X	X			
35	TP10 0.8-0.9	Nov 01, 2023		Soil	N23-No0006885					X	X			
36	D.1.11.23	Nov 01, 2023		Soil	N23-No0006886				X			X	X	
37	TP01 0.9-1.0	Nov 01, 2023		Soil	N23-No0006887		X							
38	TP04 0.4-0.5	Nov 01, 2023		Soil	N23-No0006888		X							
39	TP04 0.9-1.0	Nov 01, 2023		Soil	N23-No0006889		X							

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
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Company Name: Qualtest Address: 2 Murray Dwyer Circuit Mayfield West NSW 2304 Project Name: Detailed Site Investigation - Ourimbah Project ID: NEW23P-0208	Order No.: Report #: 1040841 Phone: 02 4968 4468 Fax: 02 4960 9775	Received: Nov 2, 2023 3:10 PM Due: Nov 9, 2023 Priority: 5 Day Contact Name: Emma Coleman
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Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - W/A guidelines	HOLD	Metals M8	Suite B13: OCP/PCB	Chromium Reducible Sulfur Suite	Moisture Set	Moisture Set	Eurofins Suite B7	Eurofins Suite B4
Melbourne Laboratory - NATA # 1261 Site # 1254								X					X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X		X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794										X	X	X		
40	TP05 0.4-0.5	Nov 01, 2023		Soil	N23-No0006890		X							
41	TP05 0.9-1.0	Nov 01, 2023		Soil	N23-No0006891		X							
42	TP05 1.4-1.5	Nov 01, 2023		Soil	N23-No0006892		X							
43	TP08 0.4-0.5	Nov 01, 2023		Soil	N23-No0006893		X							
44	TP08 0.9-1.0	Nov 01, 2023		Soil	N23-No0006894		X							
45	TP09 0.4-0.5	Nov 01, 2023		Soil	N23-No0006895		X							
46	TP09 0.9-1.0	Nov 01, 2023		Soil	N23-No0006896		X							
47	TP10 0.4-0.5	Nov 01, 2023		Soil	N23-No0006897		X							
48	TP11 1.4-1.5	Nov 01, 2023		Soil	N23-No0006899		X							
49	TP12 0.9-1.0	Nov 01, 2023		Soil	N23-No0006900		X							
50	TP12 1.4-1.5	Nov 01, 2023		Soil	N23-No0006901		X							
51	TP01 0.2-0.3	Nov 01, 2023		Soil	N23-No0007299		X							
Test Counts						19	15	8	8	5	36	36	19	3

Internal Quality Control Review and Glossary General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. Information identified on this report with the colour **blue** indicates data provided by customer that may have an impact on the results.
5. This report replaces any interim results previously issued.

Holding Times

Please refer to the most recent version of the 'Sample Preservation and Container Guide' for holding times (QS3001).

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported. Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

Units

% w/w:	Percentage weight-for-weight basis, e.g. of asbestos in asbestos-containing finds in soil samples (% w/w)
F/fld	Airborne fibre filter loading as Fibres (N) per Fields counted (n)
F/mL	Airborne fibre reported concentration as Fibres per millilitre of air drawn over the sampler membrane (C)
g, kg	Mass, e.g. of whole sample (M) or asbestos-containing find within the sample (m)
g/kg	Concentration in grams per kilogram
L, mL	Volume, e.g. of air as measured in AFM (V = r x t)
L/min	Airborne fibre sampling Flowrate as litres per minute of air drawn over the sampler membrane (r)
min	Time (t), e.g. of air sample collection period

Calculations

Airborne Fibre Concentration:
$$C = \left(\frac{A}{a}\right) \times \left(\frac{N}{n}\right) \times \left(\frac{1}{r}\right) \times \left(\frac{1}{t}\right) = K \times \left(\frac{N}{n}\right) \times \left(\frac{1}{r}\right)$$

Asbestos Content (as asbestos):
$$\% w/w = \frac{(m \times P_A)}{M}$$

Weighted Average (of asbestos):
$$\%_{WA} = \sum \frac{(m \times P_A) \times x}{x}$$

Terms

%asbestos	Estimated percentage of asbestos in a given matrix. May be derived from knowledge or experience of the material, informed by HSG264 <i>Appendix 2</i> , else assumed to be 15% in accordance with WA DOH <i>Appendix 2 (P_A)</i> .
ACM	Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded (non-friable) condition. For the purposes of the NEPM and WA DOH, ACM corresponds to material larger than 7 mm x 7 mm.
AF	Asbestos Fines. Asbestos contamination within a soil sample, as defined by WA DOH. Includes loose fibre bundles and small pieces of friable and non-friable material such as asbestos cement fragments mixed with soil. Considered under the NEPM as equivalent to "non-bonded / friable".
AFM	Airborne Fibre Monitoring, e.g. by the MFM.
Amosite	Amosite Asbestos Detected. Amosite may also refer to Fibrous Grunerite or Brown Asbestos. Identified in accordance with AS 4964-2004.
AS	Australian Standard.
Asbestos Content (as asbestos)	Total % w/w asbestos content in asbestos-containing finds in a soil sample (% w/w).
Chrysotile	Chrysotile Asbestos Detected. Chrysotile may also refer to Fibrous Serpentine or White Asbestos. Identified in accordance with AS 4964-2004.
COC	Chain of Custody.
Crocidolite	Crocidolite Asbestos Detected. Crocidolite may also refer to Fibrous Riebeckite or Blue Asbestos. Identified in accordance with AS 4964-2004.
Dry	Sample is dried by heating prior to analysis.
DS	Dispersion Staining. Technique required for Unequivocal Identification of asbestos fibres by PLM.
FA	Fibrous Asbestos. Asbestos containing material that is wholly or in part friable, including materials with higher asbestos content with a propensity to become friable with handling, and any material that was previously non-friable and in a severely degraded condition. For the purposes of the NEPM and WA DOH, FA generally corresponds to material larger than 7 mm x 7 mm, although FA may be more difficult to visibly distinguish and may be assessed as AF.
Fibre Count	Total of all fibres (whether asbestos or not) meeting the counting criteria set out in the NOHSC:3003
Fibre ID	Fibre Identification. Unequivocal identification of asbestos fibres according to AS 4964-2004. Includes Chrysotile, Amosite (Grunerite) or Crocidolite asbestos.
Friable	Asbestos-containing materials of any size that may be broken or crumbled by hand pressure. For the purposes of the NEPM, this includes both AF and FA. It is outside of the laboratory's remit to assess degree of friability.
HSG248	UK HSE HSG248, <i>Asbestos: The Analysts Guide</i> , 2nd Edition (2021).
HSG264	UK HSE HSG264, <i>Asbestos: The Survey Guide</i> (2012).
ISO (also ISO/IEC)	International Organization for Standardization / International Electrotechnical Commission.
K Factor	Microscope constant (K) as derived from the effective filter area of the given AFM membrane used for collecting the sample (A) and the projected eyepiece graticule area of the specific microscope used for the analysis (a).
LOR	Limit of Reporting.
MFM (also NOHSC:3003)	Membrane Filter Method. As described by the Australian Government National Occupational Health and Safety Commission, <i>Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres</i> , 2nd Edition [NOHSC:3003(2005)].
NEPM (also ASC NEPM)	National Environment Protection (Assessment of Site Contamination) Measure, (2013, as amended).
Organic	Organic Fibres Detected. Organic may refer to Natural or Man-Made Polymeric Fibres. Identified in accordance with AS 4964-2004.
PCM	Phase Contrast Microscopy. As used for Fibre Counting according to the MFM.
PLM	Polarised Light Microscopy. As used for Fibre Identification and Trace Analysis according to AS 4964-2004.
Sampling	Unless otherwise stated Eurofins are not responsible for sampling equipment or the sampling process.
SMF	Synthetic Mineral Fibre Detected. SMF may also refer to Man Made Vitreous Fibres. Identified in accordance with AS 4964-2004.
SRA	Sample Receipt Advice.
Trace Analysis	Analytical procedure used to detect the presence of respirable fibres (particularly asbestos) in a given sample matrix.
UK HSE HSG	United Kingdom, Health and Safety Executive, Health and Safety Guidance, publication.
UMF	Unidentified Mineral Fibre Detected. Fibrous minerals that are detected but have not been unequivocally identified by PLM with DS according the AS 4964-2004. May include (but not limited to) Actinolite, Anthophyllite or Tremolite asbestos.
WA DOH	Reference document for the NEPM. Government of Western Australia, <i>Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia</i> (updated 2021), including Appendix Four: <i>Laboratory analysis</i>
Weighted Average	Combined average % w/w asbestos content of all asbestos-containing finds in the given aliquot or total soil sample (%_{WA}).

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

Asbestos Counter/Identifier:

Laxman Dias Senior Analyst-Asbestos

Authorised by:

Sayeed Abu Senior Analyst-Asbestos



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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CLIENT DETAILS

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Email emmacoleman@qualtest.com.au
Project **NEW23P-0208 Detailed Site Investigation**
Order Number **NEW23P-0208**
Samples 1

LABORATORY DETAILS

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SGS Reference **SE256312 R0**
Date Received 7/11/2023
Date Reported 14/11/2023

COMMENTS

Accredited for compliance with ISO/IEC 17025 - Testing. NATA accredited laboratory 2562(4354).

SIGNATORIES



Akheeqar BENIAMEEN
Chemist



Bennet LO
Senior Chemist



Kamrul AHSAN
Senior Chemist



Ly Kim HA
Organic Section Head



Shane MCDERMOTT
Inorganic/Metals Chemist

VOC's in Soil [AN433] Tested: 9/11/2023

			T.1.11.23
			SOIL
			-
			1/11/2023
PARAMETER	UOM	LOR	SE256312.001
Benzene	mg/kg	0.1	<0.1
Toluene	mg/kg	0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2
o-xylene	mg/kg	0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1



ANALYTICAL RESULTS

SE256312 R0

Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 9/11/2023

			T.1.11.23
			SOIL
			-
			1/11/2023
PARAMETER	UOM	LOR	SE256312.001
TRH C6-C9	mg/kg	20	<20
Benzene (F0)	mg/kg	0.1	<0.1
TRH C6-C10	mg/kg	25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 9/11/2023

			T.1.11.23
			SOIL
			-
			1/11/2023
PARAMETER	UOM	LOR	SE256312.001
TRH C10-C14	mg/kg	20	<20
TRH C15-C28	mg/kg	45	<45
TRH C29-C36	mg/kg	45	<45
TRH C37-C40	mg/kg	100	<100
TRH >C10-C16	mg/kg	25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120
TRH C10-C36 Total	mg/kg	110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 9/11/2023

			T.1.11.23
			SOIL
			-
			1/11/2023
PARAMETER	UOM	LOR	SE256312.001
Naphthalene	mg/kg	0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1
Fluorene	mg/kg	0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1
Anthracene	mg/kg	0.1	<0.1
Fluoranthene	mg/kg	0.1	0.1
Pyrene	mg/kg	0.1	0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1
Chrysene	mg/kg	0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8

OC Pesticides in Soil [AN420] Tested: 9/11/2023

			T.1.11.23
			SOIL
			-
			1/11/2023
PARAMETER	UOM	LOR	SE256312.001
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1
Lindane (gamma BHC)	mg/kg	0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1
Aldrin	mg/kg	0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1
o,p'-DDE*	mg/kg	0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2
Endrin	mg/kg	0.2	<0.2
o,p'-DDD*	mg/kg	0.1	<0.1
o,p'-DDT*	mg/kg	0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1
Endrin aldehyde	mg/kg	0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1
Endrin ketone	mg/kg	0.1	<0.1
Isodrin	mg/kg	0.1	<0.1
Mirex	mg/kg	0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1
Total OC VIC EPA	mg/kg	1	<1

PCBs in Soil [AN420] Tested: 9/11/2023

			T.1.11.23
			SOIL
			-
			1/11/2023
PARAMETER	UOM	LOR	SE256312.001
Arochlor 1016	mg/kg	0.2	<0.2
Arochlor 1221	mg/kg	0.2	<0.2
Arochlor 1232	mg/kg	0.2	<0.2
Arochlor 1242	mg/kg	0.2	<0.2
Arochlor 1248	mg/kg	0.2	<0.2
Arochlor 1254	mg/kg	0.2	<0.2
Arochlor 1260	mg/kg	0.2	<0.2
Arochlor 1262	mg/kg	0.2	<0.2
Arochlor 1268	mg/kg	0.2	<0.2
Total PCBs (Arochlors)	mg/kg	1	<1



ANALYTICAL RESULTS

SE256312 R0

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 9/11/2023

			T.1.11.23
			SOIL
			-
			1/11/2023
PARAMETER	UOM	LOR	SE256312.001
Arsenic, As	mg/kg	1	2
Cadmium, Cd	mg/kg	0.3	<0.3
Chromium, Cr	mg/kg	0.5	15
Copper, Cu	mg/kg	0.5	22
Lead, Pb	mg/kg	1	82
Nickel, Ni	mg/kg	0.5	27
Zinc, Zn	mg/kg	2	130



ANALYTICAL RESULTS

SE256312 R0

Mercury in Soil [AN312] Tested: 9/11/2023

			T.1.11.23
			SOIL
			-
			1/11/2023
			SE256312.001
PARAMETER	UOM	LOR	
Mercury	mg/kg	0.05	<0.05



ANALYTICAL RESULTS

SE256312 R0

Moisture Content [AN002] Tested: 9/11/2023

			T.1.11.23
			SOIL
			-
			1/11/2023
			SE256312.001
PARAMETER	UOM	LOR	
% Moisture	%w/w	1	6.8

METHOD

METHODOLOGY SUMMARY

AN002	The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.
AN040/AN320	A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.
AN040	A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analysis by AAS or ICP as per USEPA Method 200.8.
AN312	Mercury by Cold Vapour AAS in Soils: After digestion with nitric acid, hydrogen peroxide and hydrochloric acid, mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500
AN403	Total Recoverable Hydrocarbons: Determination of Hydrocarbons by gas chromatography after a solvent extraction. Detection is by flame ionisation detector (FID) that produces an electronic signal in proportion to the combustible matter passing through it. Total Recoverable Hydrocarbons (TRH) are routinely reported as four alkane groupings based on the carbon chain length of the compounds: C6-C9, C10-C14, C15-C28 and C29-C36 and in recognition of the NEPM 1999 (2013), >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). F2 is reported directly and also corrected by subtracting Naphthalene (from VOC method AN433) where available.
AN403	Additionally, the volatile C6-C9 fraction may be determined by a purge and trap technique and GC/MS because of the potential for volatiles loss. Total Recoverable Hydrocarbons - Silica (TRH-Si) follows the same method of analysis after silica gel cleanup of the solvent extract. Aliphatic/Aromatic Speciation follows the same method of analysis after fractionation of the solvent extract over silica with differential polarity of the eluent solvents.
AN403	The GC/FID method is not well suited to the analysis of refined high boiling point materials (ie lubricating oils or greases) but is particularly suited for measuring diesel, kerosene and petrol if care to control volatility is taken. This method will detect naturally occurring hydrocarbons, lipids, animal fats, phenols and PAHs if they are present at sufficient levels, dependent on the use of specific cleanup/fractionation techniques. Reference USEPA 3510B, 8015B.
AN420	(SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols (etc) in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D). Total PAH calculated from individual analyte detections at or above the limit of reporting.
AN420	SVOC Compounds: Semi-Volatile Organic Compounds (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN433	VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC's are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.

FOOTNOTES

*	NATA accreditation does not cover the performance of this service.	-	Not analysed.	UOM	Unit of Measure.
**	Indicative data, theoretical holding time exceeded.	NVL	Not validated.	LOR	Limit of Reporting.
***	Indicates that both * and ** apply.	IS	Insufficient sample for analysis.	↑↓	Raised/lowered Limit of Reporting.
		LNR	Sample listed, but not received.		

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.
Solid samples expressed on a dry weight basis.

Where "Total" analyte groups are reported (for example, Total PAHs, Total OC Pesticides) the total will be calculated as the sum of the individual analytes, with those analytes that are reported as <LOR being assumed to be zero. The summed (Total) limit of reporting is calculated by summing the individual analyte LORs and dividing by two. For example, where 16 individual analytes are being summed and each has an LOR of 0.1 mg/kg, the "Totals" LOR will be 1.6 / 2 (0.8 mg/kg). Where only 2 analytes are being summed, the "Total" LOR will be the sum of those two LORs.

Some totals may not appear to add up because the total is rounded after adding up the raw values.

If reported, measurement uncertainty follow the ± sign after the analytical result and is expressed as the expanded uncertainty calculated using a coverage factor of 2, providing a level of confidence of approximately 95%, unless stated otherwise in the comments section of this report.

Results reported for samples tested under test methods with codes starting with ARS-SOP, radionuclide or gross radioactivity concentrations are expressed in becquerel (Bq) per unit of mass or volume or per wipe as stated on the report. Becquerel is the SI unit for activity and equals one nuclear transformation per second.

Note that in terms of units of radioactivity:

- 1 Bq is equivalent to 27 pCi
- 37 MBq is equivalent to 1 mCi

For results reported for samples tested under test methods with codes starting with ARS-SOP, less than (<) values indicate the detection limit for each radionuclide or parameter for the measurement system used. The respective detection limits have been calculated in accordance with ISO 11929.

The QC and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: www.sgs.com.au/en-gb/environment-health-and-safety.

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STATEMENT OF QA/QC PERFORMANCE

SE256312 R0

CLIENT DETAILS

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Project **NEW23P-0208 Detailed Site Investigation**
Order Number **NEW23P-0208**
Samples 1

LABORATORY DETAILS

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SGS Reference **SE256312 R0**
Date Received 07 Nov 2023
Date Reported 14 Nov 2023

COMMENTS

All the laboratory data for each environmental matrix was compared to SGS' stated Data Quality Objectives (DQO). Comments arising from the comparison were made and are reported below.

The data relating to sampling was taken from the Chain of Custody document.

This QA/QC Statement must be read in conjunction with the referenced Analytical Report.

The Statement and the Analytical Report must not be reproduced except in full.

All Data Quality Objectives were met with the exception of the following:

Matrix Spike	OC Pesticides in Soil	3 items
	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	1 item

SAMPLE SUMMARY

Sample counts by matrix	1 Soil	Type of documentation received	COC
Date documentation received	7/11/2023	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	14.3°C
Sample container provider	Other Lab	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T.1.11.23	SE256312.001	LB296091	01 Nov 2023	07 Nov 2023	29 Nov 2023	09 Nov 2023	29 Nov 2023	14 Nov 2023

Moisture Content

Method: ME-(AU)-[ENV]AN002

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T.1.11.23	SE256312.001	LB296086	01 Nov 2023	07 Nov 2023	15 Nov 2023	09 Nov 2023	14 Nov 2023	14 Nov 2023

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T.1.11.23	SE256312.001	LB296080	01 Nov 2023	07 Nov 2023	15 Nov 2023	09 Nov 2023	19 Dec 2023	14 Nov 2023

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T.1.11.23	SE256312.001	LB296080	01 Nov 2023	07 Nov 2023	15 Nov 2023	09 Nov 2023	19 Dec 2023	14 Nov 2023

PCBs in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T.1.11.23	SE256312.001	LB296080	01 Nov 2023	07 Nov 2023	15 Nov 2023	09 Nov 2023	19 Dec 2023	14 Nov 2023

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T.1.11.23	SE256312.001	LB296081	01 Nov 2023	07 Nov 2023	29 Apr 2024	09 Nov 2023	29 Apr 2024	14 Nov 2023

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T.1.11.23	SE256312.001	LB296080	01 Nov 2023	07 Nov 2023	15 Nov 2023	09 Nov 2023	19 Dec 2023	14 Nov 2023

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T.1.11.23	SE256312.001	LB296082	01 Nov 2023	07 Nov 2023	15 Nov 2023	09 Nov 2023	15 Nov 2023	14 Nov 2023

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T.1.11.23	SE256312.001	LB296082	01 Nov 2023	07 Nov 2023	15 Nov 2023	09 Nov 2023	15 Nov 2023	14 Nov 2023

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	T.1.11.23	SE256312.001	%	60 - 130%	97

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	T.1.11.23	SE256312.001	%	70 - 130%	94
d14-p-terphenyl (Surrogate)	T.1.11.23	SE256312.001	%	70 - 130%	99
d5-nitrobenzene (Surrogate)	T.1.11.23	SE256312.001	%	70 - 130%	106

PCBs in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
TCMX (Surrogate)	T.1.11.23	SE256312.001	%	60 - 130%	92

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	T.1.11.23	SE256312.001	%	60 - 130%	99
d4-1,2-dichloroethane (Surrogate)	T.1.11.23	SE256312.001	%	60 - 130%	78
d8-toluene (Surrogate)	T.1.11.23	SE256312.001	%	60 - 130%	90

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	T.1.11.23	SE256312.001	%	60 - 130%	99
d4-1,2-dichloroethane (Surrogate)	T.1.11.23	SE256312.001	%	60 - 130%	78
d8-toluene (Surrogate)	T.1.11.23	SE256312.001	%	60 - 130%	90

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Mercury in Soil

Method: ME-(AU)-ENVJAN312

Sample Number	Parameter	Units	LOR	Result
LB296091.001	Mercury	mg/kg	0.05	<0.05

OC Pesticides in Soil

Method: ME-(AU)-ENVJAN420

Sample Number	Parameter	Units	LOR	Result
LB296080.001	Alpha BHC	mg/kg	0.1	<0.1
	Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
	Beta BHC	mg/kg	0.1	<0.1
	Lindane (gamma BHC)	mg/kg	0.1	<0.1
	Delta BHC	mg/kg	0.1	<0.1
	Heptachlor	mg/kg	0.1	<0.1
	Aldrin	mg/kg	0.1	<0.1
	Isodrin	mg/kg	0.1	<0.1
	Heptachlor epoxide	mg/kg	0.1	<0.1
	Gamma Chlordane	mg/kg	0.1	<0.1
	Alpha Chlordane	mg/kg	0.1	<0.1
	Alpha Endosulfan	mg/kg	0.2	<0.2
	p,p'-DDE	mg/kg	0.1	<0.1
	Dieldrin	mg/kg	0.2	<0.2
	Endrin	mg/kg	0.2	<0.2
	Beta Endosulfan	mg/kg	0.2	<0.2
	p,p'-DDD	mg/kg	0.1	<0.1
	Endrin aldehyde	mg/kg	0.1	<0.1
	Endosulfan sulphate	mg/kg	0.1	<0.1
	p,p'-DDT	mg/kg	0.1	<0.1
	Endrin ketone	mg/kg	0.1	<0.1
	Methoxychlor	mg/kg	0.1	<0.1
	Mirex	mg/kg	0.1	<0.1
Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	87

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-ENVJAN420

Sample Number	Parameter	Units	LOR	Result
LB296080.001	Naphthalene	mg/kg	0.1	<0.1
	2-methylnaphthalene	mg/kg	0.1	<0.1
	1-methylnaphthalene	mg/kg	0.1	<0.1
	Acenaphthylene	mg/kg	0.1	<0.1
	Acenaphthene	mg/kg	0.1	<0.1
	Fluorene	mg/kg	0.1	<0.1
	Phenanthrene	mg/kg	0.1	<0.1
	Anthracene	mg/kg	0.1	<0.1
	Fluoranthene	mg/kg	0.1	<0.1
	Pyrene	mg/kg	0.1	<0.1
	Benzo(a)anthracene	mg/kg	0.1	<0.1
	Chrysene	mg/kg	0.1	<0.1
	Benzo(a)pyrene	mg/kg	0.1	<0.1
	Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
	Dibenzo(ah)anthracene	mg/kg	0.1	<0.1
	Benzo(ghi)perylene	mg/kg	0.1	<0.1
	Total PAH (18)	mg/kg	0.8	<0.8
Surrogates	d5-nitrobenzene (Surrogate)	%	-	109
	2-fluorobiphenyl (Surrogate)	%	-	97
	d14-p-terphenyl (Surrogate)	%	-	104

PCBs in Soil

Method: ME-(AU)-ENVJAN420

Sample Number	Parameter	Units	LOR	Result
LB296080.001	Arochlor 1016	mg/kg	0.2	<0.2
	Arochlor 1221	mg/kg	0.2	<0.2
	Arochlor 1232	mg/kg	0.2	<0.2
	Arochlor 1242	mg/kg	0.2	<0.2
	Arochlor 1248	mg/kg	0.2	<0.2
	Arochlor 1254	mg/kg	0.2	<0.2

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

PCBs in Soil (continued)

Method: ME-(AU)-[ENV]JAN420

Sample Number	Parameter	Units	LOR	Result
LB296080.001	Arochlor 1260	mg/kg	0.2	<0.2
	Arochlor 1262	mg/kg	0.2	<0.2
	Arochlor 1268	mg/kg	0.2	<0.2
	Total PCBs (Arochlors)	mg/kg	1	<1
	Surrogates	TCMX (Surrogate)	%	-
				81

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]JAN040/AN320

Sample Number	Parameter	Units	LOR	Result
LB296081.001	Arsenic, As	mg/kg	1	<1
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.5	<0.5
	Copper, Cu	mg/kg	0.5	<0.5
	Nickel, Ni	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1
	Zinc, Zn	mg/kg	2	<2.0

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]JAN403

Sample Number	Parameter	Units	LOR	Result
LB296080.001	TRH C10-C14	mg/kg	20	<20
	TRH C15-C28	mg/kg	45	<45
	TRH C29-C36	mg/kg	45	<45
	TRH C37-C40	mg/kg	100	<100
	TRH C10-C36 Total	mg/kg	110	<110

VOC's in Soil

Method: ME-(AU)-[ENV]JAN433

Sample Number	Parameter	Units	LOR	Result
LB296082.001	Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.1
		Toluene	mg/kg	0.1
		Ethylbenzene	mg/kg	0.1
		m/p-xylene	mg/kg	0.2
		o-xylene	mg/kg	0.1
	Polycyclic VOCs	Naphthalene (VOC)*	mg/kg	0.1
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-
		d8-toluene (Surrogate)	%	-
		Bromofluorobenzene (Surrogate)	%	-
	Totals	Total BTEX*	mg/kg	0.6

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]JAN433

Sample Number	Parameter	Units	LOR	Result
LB296082.001	TRH C6-C9	mg/kg	20	<20
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: $MAD = 100 \times \text{SDL} / \text{Mean} + \text{LR}$

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

Mercury in Soil

Method: ME-(AU)-[ENV]JAN312

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE256276.035	LB296091.014	Mercury	mg/kg	0.05	<0.05	<0.05	200	0
SE256331.001	LB296091.023	Mercury	mg/kg	0.05	<0.05	<0.05	200	0

Moisture Content

Method: ME-(AU)-[ENV]JAN002

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE256276.035	LB296086.011	% Moisture	%w/w	1	14.6	15.1	37	3
SE256331.001	LB296086.020	% Moisture	%w/w	1	6.8	6.7	45	1

OC Pesticides in Soil

Method: ME-(AU)-[ENV]JAN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE256276.036	LB296080.025	Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
		Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
		Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0
		Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
		Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
		Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
		Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
		Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
		Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
		Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
		Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
		o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	200	0
		p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
		Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
		Endrin	mg/kg	0.2	<0.2	<0.2	200	0
		Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
		o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	200	0
		p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
		Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
		Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
		o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	200	0
		p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
		Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0
		Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
		Mirex	mg/kg	0.1	<0.1	<0.1	200	0
		Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
		Total OC VIC EPA	mg/kg	1	<1	<1	200	0
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.14	0.14	30	2
LB296080.028		Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
		Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
		Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0
		Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
		Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
		Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
		Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
		Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
		Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
		Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
		Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
		o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	200	0
		p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
		Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
		Endrin	mg/kg	0.2	<0.2	<0.2	200	0
		Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
		o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	200	0
		p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
		Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: $MAD = 100 \times \text{SDL} / \text{Mean} + \text{LR}$

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

OC Pesticides in Soil (continued)

Method: ME-(AU)-ENVJAN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE256276.036	LB296080.028	Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
		o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	200	0
		p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
		Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0
		Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
		Mirex	mg/kg	0.1	<0.1	<0.1	200	0
		Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
		Total OC VIC EPA	mg/kg	1	<1	<1	200	0
SE256331.001	LB296080.023	Surrogates						
		Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.14	0.14	30	2
		Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
		Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
		Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0
		Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
		Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
		Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
		Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
		Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
		Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
		Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
		Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
		o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	200	0
		p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
		Dieldrin	mg/kg	0.2	0.3	<0.2	81	70
		Endrin	mg/kg	0.2	<0.2	<0.2	200	0
		Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
		o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	200	0
		p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
		Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
		Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
		o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	200	0
		p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
		Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0
		Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
		Mirex	mg/kg	0.1	<0.1	<0.1	200	0
		trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
		Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
		Total OC VIC EPA	mg/kg	1	<1	<1	200	0
		Surrogates						
		Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.12	0.13	30	8

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-ENVJAN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE256276.036	LB296080.025	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
		Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
		Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
		Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
		Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
		Fluoranthene	mg/kg	0.1	<0.1	<0.1	171	0
		Pyrene	mg/kg	0.1	<0.1	<0.1	152	0
		Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
		Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	167	0
		Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	171	0
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	195	0
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(ghi)perylene	mg/kg	0.1	<0.1	0.2	103	71
		Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	<0.2	<0.2	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: $MAD = 100 \times \text{SDL} / \text{Mean} + \text{LR}$

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE256276.036	LB296080.025	Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	<0.2	<0.2	174	0
		Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	<0.3	<0.3	134	0
		Total PAH (18)	mg/kg	0.8	<0.8	<0.8	125	71
		d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	10
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	30	9
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	10
SE256331.001	LB296080.023	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
		Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
		Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
		Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
		Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
		Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
		Pyrene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
		Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(b,j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
		Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	<0.2	<0.2	200	0
		Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	<0.2	<0.2	175	0
		Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	<0.3	<0.3	134	0
		Total PAH (18)	mg/kg	0.8	<0.8	<0.8	200	0
		d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	4
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	7
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.4	30	9

PCBs in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE256276.036	LB296080.026	Arochlor 1016	mg/kg	0.2	<0.2	<0.2	200	0
		Arochlor 1221	mg/kg	0.2	<0.2	<0.2	200	0
		Arochlor 1232	mg/kg	0.2	<0.2	<0.2	200	0
		Arochlor 1242	mg/kg	0.2	<0.2	<0.2	200	0
		Arochlor 1248	mg/kg	0.2	<0.2	<0.2	200	0
		Arochlor 1254	mg/kg	0.2	<0.2	<0.2	200	0
		Arochlor 1260	mg/kg	0.2	<0.2	<0.2	200	0
		Arochlor 1262	mg/kg	0.2	<0.2	<0.2	200	0
		Arochlor 1268	mg/kg	0.2	<0.2	<0.2	200	0
		Total PCBs (Arochlors)	mg/kg	1	<1	<1	200	0
		TCMX (Surrogate)	mg/kg	-	0	0	30	2
SE256331.001	LB296080.023	Arochlor 1016	mg/kg	0.2	<0.2	<0.2	200	0
		Arochlor 1221	mg/kg	0.2	<0.2	<0.2	200	0
		Arochlor 1232	mg/kg	0.2	<0.2	<0.2	200	0
		Arochlor 1242	mg/kg	0.2	<0.2	<0.2	200	0
		Arochlor 1248	mg/kg	0.2	<0.2	<0.2	200	0
		Arochlor 1254	mg/kg	0.2	<0.2	<0.2	200	0
		Arochlor 1260	mg/kg	0.2	<0.2	<0.2	200	0
		Arochlor 1262	mg/kg	0.2	<0.2	<0.2	200	0
		Arochlor 1268	mg/kg	0.2	<0.2	<0.2	200	0
		Total PCBs (Arochlors)	mg/kg	1	<1	<1	200	0
		TCMX (Surrogate)	mg/kg	-	0	0	30	9

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Original	Duplicate	Parameter	Units	LOR
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Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: $MAD = 100 \times \text{SDL} / \text{Mean} + \text{LR}$

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES (continued)

Method: ME-(AU)-[ENV]JAN040/AN320

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE256276.035	LB296081.014	Arsenic, As	mg/kg	1	6	5	48	5
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	18	18	33	1
		Copper, Cu	mg/kg	0.5	8.2	7.8	36	5
		Nickel, Ni	mg/kg	0.5	2.6	2.4	50	7
		Lead, Pb	mg/kg	1	16	16	36	4
		Zinc, Zn	mg/kg	2	13	14	45	2
SE256331.001	LB296081.023	Arsenic, As	mg/kg	1	3	4	57	10
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	7.7	9.4	36	20
		Copper, Cu	mg/kg	0.5	3.5	3.7	44	7
		Nickel, Ni	mg/kg	0.5	<0.5	<0.5	185	0
		Lead, Pb	mg/kg	1	8	9	41	13
		Zinc, Zn	mg/kg	2	5.7	7.1	61	21

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]JAN403

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE256276.036	LB296080.025	TRH C10-C14	mg/kg	20	<20	<20	200	0
		TRH C15-C28	mg/kg	45	49	<45	126	9
		TRH C29-C36	mg/kg	45	100	83	79	19
		TRH C37-C40	mg/kg	100	<100	<100	200	0
		TRH C10-C36 Total	mg/kg	110	150	<110	125	30
		TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	200	0
		TRH >C10-C16	mg/kg	25	<25	<25	200	0
		TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0
		TRH >C16-C34 (F3)	mg/kg	90	110	93	117	20
		TRH >C34-C40 (F4)	mg/kg	120	<120	<120	163	0
SE256331.001	LB296080.023	TRH C10-C14	mg/kg	20	<20	<20	200	0
		TRH C15-C28	mg/kg	45	<45	<45	200	0
		TRH C29-C36	mg/kg	45	<45	<45	200	0
		TRH C37-C40	mg/kg	100	<100	<100	200	0
		TRH C10-C36 Total	mg/kg	110	<110	<110	200	0
		TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	200	0
		TRH >C10-C16	mg/kg	25	<25	<25	200	0
		TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0
		TRH >C16-C34 (F3)	mg/kg	90	<90	<90	200	0
		TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0

VOC's in Soil

Method: ME-(AU)-[ENV]JAN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE256331.001	LB296082.007	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
			Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.6	9.8	50	1
			d8-toluene (Surrogate)	mg/kg	-	9.6	9.9	50	2
			Bromofluorobenzene (Surrogate)	mg/kg	-	10.6	10.7	50	2
		Totals	Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
			Total Xylenes*	ma/kg	0.3	<0.3	<0.3	200	0

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]JAN433

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %	
SE256331.001	LB296082.007	TRH C6-C10	mg/kg	25	<25	<25	200	0	
		TRH C6-C9	mg/kg	20	<20	<20	200	0	
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.6	9.8	50	1
		d8-toluene (Surrogate)	mg/kg	-	9.6	9.9	50	2	
		Bromofluorobenzene (Surrogate)	mg/kg	-	10.6	10.7	50	2	
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
		TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0	

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB296091.002	Mercury	mg/kg	0.05	0.18	0.2	80 - 120	90

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB296080.002	Delta BHC	mg/kg	0.1	0.2	0.2	60 - 140	76
	Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	86
	Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	80
	Dieldrin	mg/kg	0.2	<0.2	0.2	60 - 140	85
	Endrin	mg/kg	0.2	<0.2	0.2	60 - 140	92
	p,p'-DDT	mg/kg	0.1	0.2	0.2	60 - 140	98
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.13	0.15	40 - 130

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %	
LB296080.002	Naphthalene	mg/kg	0.1	3.4	4	60 - 140	85	
	Acenaphthylene	mg/kg	0.1	3.4	4	60 - 140	85	
	Acenaphthene	mg/kg	0.1	3.6	4	60 - 140	90	
	Phenanthrene	mg/kg	0.1	3.4	4	60 - 140	85	
	Anthracene	mg/kg	0.1	3.6	4	60 - 140	89	
	Fluoranthene	mg/kg	0.1	3.4	4	60 - 140	85	
	Pyrene	mg/kg	0.1	3.4	4	60 - 140	84	
	Benzo(a)pyrene	mg/kg	0.1	3.5	4	60 - 140	87	
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	99
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	97
d14-p-terphenyl (Surrogate)		ma/ka	-	0.5	0.5	40 - 130	95	

PCBs in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB296080.002	Arochlor 1260	mg/kg	0.2	0.3	0.4	60 - 140	77

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB296081.002	Arsenic, As	mg/kg	1	350	318.22	80 - 120	111
	Cadmium, Cd	mg/kg	0.3	4.6	4.81	70 - 130	96
	Chromium, Cr	mg/kg	0.5	42	38.31	80 - 120	109
	Copper, Cu	mg/kg	0.5	330	290	80 - 120	114
	Nickel, Ni	mg/kg	0.5	190	187	80 - 120	103
	Lead, Pb	mg/kg	1	95	89.9	80 - 120	106
	Zinc, Zn	mg/kg	2	290	273	80 - 120	107

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %	
LB296080.002	TRH C10-C14	mg/kg	20	34	40	60 - 140	85	
	TRH C15-C28	mg/kg	45	<45	40	60 - 140	81	
	TRH C29-C36	mg/kg	45	<45	40	60 - 140	69	
	TRH F Bands	TRH >C10-C16	mg/kg	25	34	40	60 - 140	84
		TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	77
		TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	84

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB296082.002	Monocyclic	Benzene	mg/kg	0.1	4.5	5	60 - 140	91
	Aromatic	Toluene	mg/kg	0.1	4.4	5	60 - 140	87
		Ethylbenzene	mg/kg	0.1	4.2	5	60 - 140	85
		m/p-xylene	mg/kg	0.2	8.5	10	60 - 140	85
		o-xylene	mg/kg	0.1	4.3	5	60 - 140	86
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	10.0	10	70 - 130
	d8-toluene (Surrogate)	mg/kg	-	10.0	10	70 - 130	100	
	Bromofluorobenzene (Surrogate)	mg/kg	-	9.8	10	70 - 130	98	

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB296082.002	TRH C6-C10	mg/kg	25	85	92.5	60 - 140	92
	TRH C6-C9	mg/kg	20	76	80	60 - 140	95
	Surrogates						
	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	10.0	10	70 - 130	100
	Bromofluorobenzene (Surrogate)	mg/kg	-	9.8	10	70 - 130	98
VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	59	62.5	60 - 140	95

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub-sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE256276.026	LB296091.004	Mercury	mg/kg	0.05	0.22	0.02900839220	0.2	98

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE256276.026	LB296080.004	Alpha BHC	mg/kg	0.1	<0.1	1.80233975773	-	-
		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	0.01552123948	-	-
		Beta BHC	mg/kg	0.1	<0.1	5.29602176596	-	-
		Lindane (gamma BHC)	mg/kg	0.1	<0.1	4.96136068690	-	-
		Delta BHC	mg/kg	0.1	0.2	3.16683458643	0.2	85
		Heptachlor	mg/kg	0.1	0.3	0.73166867755	0.2	-229 @
		Aldrin	mg/kg	0.1	0.2	0.00023402436	0.2	86
		Isodrin	mg/kg	0.1	<0.1	0	-	-
		Heptachlor epoxide	mg/kg	0.1	0.7	2.16659918462	-	-
		Gamma Chlordane	mg/kg	0.1	1.5	7.58347956453	-	-
		Alpha Chlordane	mg/kg	0.1	0.2	0.73053361532	-	-
		Alpha Endosulfan	mg/kg	0.2	<0.2	0	-	-
		o,p'-DDE*	mg/kg	0.1	<0.1	0	-	-
		p,p'-DDE	mg/kg	0.1	0.1	0.21363941683	-	-
		Dieldrin	mg/kg	0.2	0.3	0.19602476791	0.2	54 @
		Endrin	mg/kg	0.2	<0.2	0.04623950929	0.2	76
		Beta Endosulfan	mg/kg	0.2	<0.2	0.00040945094	-	-
		o,p'-DDD*	mg/kg	0.1	<0.1	0.00470533221	-	-
		p,p'-DDD	mg/kg	0.1	<0.1	0.05518360013	-	-
		Endrin aldehyde	mg/kg	0.1	<0.1	0.00850482574	-	-
		Endosulfan sulphate	mg/kg	0.1	<0.1	0.00964718722	-	-
		o,p'-DDT*	mg/kg	0.1	<0.1	0.05518360013	-	-
		p,p'-DDT	mg/kg	0.1	0.3	0.26941601927	0.2	24 @
		Endrin ketone	mg/kg	0.1	<0.1	0.00437870151	-	-
		Methoxychlor	mg/kg	0.1	<0.1	0.01119130166	-	-
		Mirex	mg/kg	0.1	<0.1	0.00154856162	-	-
		Total CLP OC Pesticides	mg/kg	1	4	11.8913612460€	-	-
		Total OC VIC EPA	mg/kg	1	2	4.30788168152	-	-
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.14	0.13240468354	-	90

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-[ENV]AN040/AN320

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE256276.026	LB296081.004	Arsenic, As	mg/kg	1	53	8.05621410462	50	90
		Cadmium, Cd	mg/kg	0.3	43	0.21126662182	50	85
		Chromium, Cr	mg/kg	0.5	61	12.6474827960€	50	96
		Copper, Cu	mg/kg	0.5	92	36.1011020851€	50	111
		Nickel, Ni	mg/kg	0.5	50	6.66332333005	50	87
		Lead, Pb	mg/kg	1	81	38.5572385781€	50	85
		Zinc, Zn	mg/kg	2	460	36.8557717183	50	248 @

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

The original result is the analyte concentration of the matrix spike. The Duplicate result is the analyte concentration of the matrix spike duplicate.

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: $MAD = 100 \times \text{SDL} / \text{Mean} + \text{LR}$

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the

No matrix spike duplicates were required for this job.

Samples analysed as received.

Solid samples expressed on a dry weight basis.

QC criteria are subject to internal review according to the SGS QA/QC plan and may be provided on request or alternatively can be found here : https://www.sgs.com.au/~media/Local/Australia/Documents/Technical Documents/MP-AU-ENV-QU-022_QA_QC_Plan.pdf

- * NATA accreditation does not cover the performance of this service .
- ** Indicative data, theoretical holding time exceeded.
- *** Indicates that both * and ** apply.
- Sample not analysed for this analyte.
- IS Insufficient sample for analysis.
- LNR Sample listed, but not received.
- LOR Limit of reporting.
- QFH QC result is above the upper tolerance.
- QFL QC result is below the lower tolerance.
- ① At least 2 of 3 surrogates are within acceptance criteria.
- ② RPD failed acceptance criteria due to sample heterogeneity.
- ③ Results less than 5 times LOR preclude acceptance criteria for RPD.
- ④ Recovery failed acceptance criteria due to matrix interference.
- ⑤ Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).
- ⑥ LOR was raised due to sample matrix interference.
- ⑦ LOR was raised due to dilution of significantly high concentration of analyte in sample.
- ⑧ Reanalysis of sample in duplicate confirmed sample heterogeneity and inconsistency of results.
- ⑨ Recovery failed acceptance criteria due to sample heterogeneity.
- ⑩ LOR was raised due to high conductivity of the sample (required dilution).
- † Refer to relevant report comments for further information.

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6/6

Company		Qualtest		Project No		NEW23P-0208		Project Manager		Emma Coleman		Sampler(s)		Tom Hall	
Address		2 Murray Dwyer Circuit, Mayfield West NSW 2304		Project Name		Detailed Site Investigation - Ourimbah		EDD Format		Excel		Handed over by			
Contact Name		Emma Coleman		Analyses Where metals are requested, please specify "Total" or "Filtered". Suite codes must be used to affect suite pricing.		Suite B7 (TRH, BTEX, PAHs, Metals) Asbestos (%w/w) Suite B13 (OCs, PCBs) Chromium Reducible Sulfur Suite SGS Suite CL10 (TRH, BTEX, PAH, Metals) SGS Suite (OCs, PCBs)						Email for Invoice		accounts@qualtest.com.au	
Phone No												Email for Results		libbybetz@qualtest.com.au emmacoleman@qualtest.com.au tomhall@qualtest.com.au billysnow@qualtest.com.au	
Special Directions												Containers		Required Turnaround Time (TAT)	
Purchase Order												Change container type & size if necessary. 500mL Plastic 250mL Plastic 125mL Plastic 200mL Amber Glass 40mL VOA vial Microbiological Jar (Glass or HDPE) Other (Asbestos AS4864, WA Guidelines)		Default will be 5 days if not stated. *Surcharge will apply ☐ Overnight (reporting by 9am) ☐ Same day ☐ 1 day ☐ 2 days ☐ 3 days ☒ 5 days (Standard) ☐ Other()	
Quote ID No		180622QUAN-3													
No	Client Sample ID	Sampled Date/Time	Matrix	Soil (S)	Water (W)										
1	D.1.11.23	1/11/23	Soil	X	X								1		
2	T.1.11.23	1/11/23	Soil				X	X					1	send to SGS	
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SGS EHS Sydney COC
SE256312



☐ Courier (#)	☐ Hand Delivered	☐ Postal	Name	Signature	Date	Time
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Received By		PER ADL NTL DRW	Signature	[Signature]	07/11/23	12.35

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | Environment Testing Standard Terms and Conditions unless agreed otherwise. A copy is available on request!



SAMPLE RECEIPT ADVICE

SE256312

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Project **NEW23P-0208 Detailed Site Investigation**
Order Number **NEW23P-0208**
Samples 1

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Telephone +61 2 8594 0400
Facsimile +61 2 8594 0499
Email au.environmental.sydney@sgs.com

Samples Received Tue 7/11/2023
Report Due Tue 14/11/2023
SGS Reference **SE256312**

SUBMISSION DETAILS

This is to confirm that 1 sample was received on Tuesday 7/11/2023. Results are expected to be ready by COB Tuesday 14/11/2023. Please quote SGS reference SE256312 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	1 Soil	Type of documentation received	COC
Date documentation received	7/11/2023	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	14.3°C
Sample container provider	Other Lab	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

Unless otherwise instructed, water and bulk samples will be held for one month from date of report, and soil samples will be held for two months.

COMMENTS

This document is issued by the Company under its General Conditions of Service accessible at www.sgs.com/en/Terms-and-Conditions.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.



SAMPLE RECEIPT ADVICE

SE256312

CLIENT DETAILS

Client **QUALTEST LABORATORY NSW PTY LTD**

Project **NEW23P-0208 Detailed Site Investigation**

SUMMARY OF ANALYSIS

No.	Sample ID	OC Pesticides in Soil	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	PCBs in Soil	Total Recoverable Elements in Soil/Waste	TRH (Total Recoverable Hydrocarbons) in Soil	VOC's in Soil	Volatile Petroleum Hydrocarbons in Soil
001	T.1.11.23	30	26	11	7	10	11	7

CONTINUED OVERLEAF

The above table represents SGS' interpretation of the client-supplied Chain Of Custody document.
The numbers shown in the table indicate the number of results requested in each package.
Please indicate as soon as possible should your request differ from these details .
Testing as per this table shall commence immediately unless the client intervenes with a correction .



SAMPLE RECEIPT ADVICE

SE256312

CLIENT DETAILS

Client **QUALTEST LABORATORY NSW PTY LTD**

Project **NEW23P-0208 Detailed Site Investigation**

SUMMARY OF ANALYSIS

		Mercury in Soil	Moisture Content
No.	Sample ID		
001	T.1.11.23	1	1

The above table represents SGS' interpretation of the client-supplied Chain Of Custody document.
The numbers shown in the table indicate the number of results requested in each package.
Please indicate as soon as possible should your request differ from these details .
Testing as per this table shall commence immediately unless the client intervenes with a correction .



CHAIN OF CUSTODY RECORD

Eurofins | Environment Testing | ABN 50 005 085 521

Sydney Laboratory
Unit F3 Bld F 16 Mars Road Lane Cove West NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Environa Laboratory
Unit 1 21 Smallwood Place Murarie QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

EnviroSample WA
Unit 2 91 Leach Highway Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

EnviroSample VIC
6 Monterey Road Dandenong South VIC 3175
03 8564 5000 EnviroSampleVic@eurofins.com

Company	Qualtest	Project No	NEW23P-0208				Project Manager	Emma Coleman				Sampler(s)	T.Hall				
Address	2 Murray Dwyer Circuit NSW 2304	Project Name	Updated DSI - Ourimbah				EDD Format	Excel				Handed over by					
Contact Name	Emma Coleman	Analyses Where metals are requested, please specify 'Total' or 'Filtered'. SUITE code must be used to attract SUITE pricing.	Metals M8	Asbestos (w/w%)	Suite B7 (TRH, BTEX, PAH, Metals)	pH and CEC	Suite B13 (OCP, PCB)							Email for Invoice	accounts@qualtest.com.au		
Phone No														Email for Results	libbybetz@qualtest.com.au emmacoleman@qualtest.com.au billysnow@qualtest.com.au lewiscallinan@qualtest.com.au tomhall@qualtest.com.au		
Special Directions														Containers Change container type & size if necessary.		Required Turnaround Time (TAT) Default will be 5 days if not ticked.	
Purchase Order														500mL Plastic		☐ Overnight (reporting by 9am) ♦ ☐ Same day ♦ ☒ 1 day ♦ ☐ 2 days ♦ ☐ 3 ☐ 5 days (Standard) ☐ Other{ }	
Quote ID No	180622QUAN-3													200mL Amber Glass			
No	Client Sample ID	Sampled Date/Time dd/mm/yyyy hh:mm	Matrix Solid (S) Water (W)												Sample Comments / Dangerous Goods Hazard Warning		
1	TP106 0.0-0.1	25/10/24	SOIL		X	X		X							1	1	
2	TP106 0.4-0.5	25/10/24	SOIL												1	1	
3	TP106 0.6-0.7	25/10/24	SOIL												1		
4	TP107 0.0-0.1	25/10/24	SOIL		X	X									1	1	
5	TP107 0.4-0.5	25/10/24	SOIL			X									1	1	
6	TP107 0.8-0.9	25/10/24	SOIL			X									1		
7	TP108 0.0-0.1	25/10/24	SOIL		X	X		X							1	1	
8	TP108 0.2-0.3	25/10/24	SOIL												1		
9	TP109 0.0-0.1	25/10/24	SOIL		X	X									1	1	
10	TP109 0.4-0.5	25/10/24	SOIL			X									1	1	
Total Counts					4	7		2							10	7	
Method of Shipment		☐ Courier (#) ☐ Hand Delivered ☐ Postal		Name		Signature		Date		Time		Temperature		Report No			
Laboratory Use Only		Received By		SYD BNE MEL PER ADL NTL DRW		Signature		Date		Time		Temperature		Report No			
		Received By		SYD BNE MEL PER ADL NTL DRW		Signature		Date		Time		Temperature		Report No			

11.0
1153637



CHAIN OF CUSTODY RECORD

Eurofins | Environment Testing ABN 50 005 085 521

Sydney Laboratory

Unit F3 Bld.F 16 Mars Road Lane Cove West NSW 2066
02 9300 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory

Unit 1 21 Smallwood Place Murarie QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory

Unit 2 91 Leach Highway Kewdale WA 6105
08 9251 9900 EnviroSampleWA@eurofins.com6 Monterey Road Dandenong South VIC 3175
03 8564 5000 EnviroSampleVic@eurofins.com

1/8

Company	Qualtest	Project No	NEW23P-0208					Project Manager	Emma Coleman					Sampler(s)	T.Hall								
Address	2 Murray Dwyer Circuit NSW 2304	Project Name	Updated DSI - Ourimbah					EDD Format	Excel					Handed over by									
Contact Name	Emma Coleman	Analyses When metals are requested, please specify 'Total' or 'Filtered'. SUITE code must be used to attract SUITE pricing.	Metals MB	Asbestos (NEPM w/w%)	Suite B7 (TRH, BTEX, PAH, Metals)	pH and CEC	Suite B4 (TRH, BTEX, PAH)							Email for Invoice	accounts@qualtest.com.au								
Phone No														Email for Results	abbybetz@qualtest.com.au emmacoleman@qualtest.com.au billysnow@qualtest.com.au lewiscallinan@qualtest.com.au tomhall@qualtest.com.au								
Special Directions														Containers Change container type & size if necessary.		Required Turnaround Time (TAT) Default will be 5 days if not listed.							
Purchase Order														500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4984, WA Guidelines)	* Surcharge will apply ☐ Overnight (reporting by 9am)* ☐ Same day ☒ 1 day ☐ 2 days ☐ 3 ☐ 5 days (Standard) ☐ Other()	
Quote ID No	180622QUAN-3													Sample Comments / Dangerous Goods Hazard Warning									
No	Client Sample ID	Sampled Date/Time dd/mm/yyyy hh:mm	Matrix Soil (S) Water (W)																				
1	TP101 0.0-0.1	25/10/24	SOIL	X	X	X									1	1							
2	TP101 0.2-0.3	25/10/24	SOIL												1								
3	TP102 0.0-0.1	25/10/24	SOIL		X	X									1	1							
4	TP102 0.2-0.3	25/10/24	SOIL												1								
5	TP103 0.0-0.1	25/10/24	SOIL		X	X									1	1							
6	TP103 0.3-0.4	25/10/24	SOIL												1								
7	TP104 0.0-0.1	25/10/24	SOIL				X								1	1							
8	TP104 0.3-0.4	25/10/24	SOIL												1								
9	TP105 0.0-0.1	25/10/24	SOIL		X	X									1	1							
10	TP105 0.4-0.5	25/10/24	SOIL												1								
Total Counts				1	4	3	1	1							10	5							
Method of Shipment				☐ Courier (#) ☐ Hand Delivered ☐ Postal				Name				Signature		Date		Time							
Laboratory Use Only				Received By <i>Y. Marton</i>				SYD BNE MEL PER ADL NTL DRW				Signature <i>[Signature]</i>		Date <i>28/10/24</i>		Time <i>11:30</i>							
				Received By				SYD BNE MEL PER ADL NTL DRW				Signature		Date		Time							
																Report No <i>1153637</i>							



CHAIN OF CUSTODY RECORD

Eurofins | Environment Testing ABN 50 005 085 521

Sydney Laboratory

Unit F3 Bld.F 16 Mars Road Lane Cove West NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

Brisbane Laboratory

Unit 1 21 Smallwood Place Murarie QLD 4172
07 3502 4600 EnviroSampleQLD@eurofins.com

Perth Laboratory

Unit 2 91 Leach Highway Kewdale WA 6105
08 9251 9800 EnviroSampleWA@eurofins.com

6 Monterey Road Dandenong South VIC 3175

03 8564 5000 EnviroSampleVic@eurofins.com

Company	Qualtest	Project No	NEW23P-0208				Project Manager	Emma Coleman				Sampler(s)	T.Hall			
Address	2 Murray Dwyer Circuit NSW 2304	Project Name	Updated DSI - Ourimbah				EDD Format	Excel				Handed over by				
Contact Name	Emma Coleman	Analyses When metals are requested, please specify 'Total' or 'Filtered'. SUITE code must be used to attach SUITE pricing.	Metals M8	Asbestos (tw/w%)	Suite B7 (TRH, BTEX, PAH, Metals)	pH and CEC	Suite B13 (OCP, PCB)						Email for Invoice	accounts@qualtest.com.au		
Phone No														Email for Results	libbybetz@qualtest.com.au emmacoleman@qualtest.com.au billysnow@qualtest.com.au lewiscallinan@qualtest.com.au tomhall@qualtest.com.au	
Special Directions																
Purchase Order																
Quote ID No	180622QUAN-3													Containers Change container type & size if necessary.		Required Turnaround Time (TAT) Default will be 5 days if not ticked.
No	Client Sample ID	Sampled Date/Time dd/mm/yyyy hh:mm	Matrix Solid (S) Water (W)	500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4984, WA Guidelines)	☐ Overnight (reporting by 9am) ♦ ☐ Same day ♦ ☒ 1 day ♦ ☐ 2 days ♦ ☐ 3 ☐ 5 days (Standard) ☐ Other ()				
Sample Comments / Dangerous Goods Hazard Warning																
1	TP109 0.8-0.9	25/10/24	SOIL								1					
2	TP110 0.0-0.1	25/10/24	SOIL		X	X					1	1				
3	TP110 0.2-0.3	25/10/24	SOIL								1					
4	TP111 0.0-0.1	25/10/24	SOIL		X	X	X				1	1				
5	TP111 0.4-0.5	25/10/24	SOIL			X					1	1				
6	TP111 0.8-0.9	25/10/24	SOIL								1					
7	TP112 0.0-0.1	25/10/24	SOIL		X	X					1	1				
8	TP112 0.4-0.5	25/10/24	SOIL								1					
9	TP113 0.0-0.1	25/10/24	SOIL		X	X	X				1	1				
10	TP113 0.2-0.3	25/10/24	SOIL								1					
Total Counts					4	5	2					10	5	page 1/2		
Method of Shipment		☐ Courier (#) ☐ Hand Delivered ☐ Postal		Name		Signature		Date		Time		Temperature				
Laboratory Use Only		Received By		SYD BNE MEL PER ADL NTL DRW		Signature		Date		Time		Report No		1153637		
		Received By		SYD BNE MEL PER ADL NTL DRW		Signature		Date		Time						



CHAIN OF CUSTODY RECORD

Eurofins | Environment Testing ABN 50 005 085 521

☐ Sydney LaboratoryUnit F3 Bld.F 16 Mars Road Lane Cove West NSW 2086
02 9900 8400 EnviroSampleNSW@eurofins.com☐ Brisbane LaboratoryUnit 1 21 Smallwood Place Murarie QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com☐ Perth LaboratoryUnit 2 91 Leach Highway Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com☐ Melbourne Laboratory
8 Monterey Road Dandenong South VIC 3175
03 8564 5000 EnviroSampleVic@eurofins.com

910

Company	Qualtest	Project No	NEW23P-0208	Project Manager	Emma Coleman	Sampler(s)	T.Hall		
Address	2 Murray Dwyer Circuit NSW 2304	Project Name	Updated DSI - Ourimbah	EDD Format ESdat, ESqts etc	Excel	Handed over by			
Contact Name	Emma Coleman	Analyses Where results are requested, please specify 'Total' or 'Filtered'. SUITE could mean be used to address SUITE pricing.	Metals MB Asbestos (w/w%) Suite B7 (TRH, BTEX, PAH, Metals) pH and CEC			Email for Invoice	accounts@qualtest.com.au		
Phone No						Email for Results	libbybetz@qualtest.com.au emmacoleman@qualtest.com.au billysnow@qualtest.com.au lewiscallinan@qualtest.com.au tomhall@qualtest.com.au		
Special Directions						Containers Change container type & size if necessary.		Required Turnaround Time (TAT) Default will be 5 days if not ticked.	
Purchase Order						500mL Plastic 250mL Plastic 125mL Plastic 200mL Amber Glass 40mL VOA vial 500mL PFAS Bottle Jar (Glass or HDPE) Other (Asbestos AS984, WA Guidelines)		*Surcharge will apply ☐ Overnight (reporting by 9am)* ☐ Same day ☒ 1 day ☐ 2 days ☐ 3 ☐ 5 days (Standard) ☐ Other()	
Quote ID No	180622QUAN-3					Sample Comments / Dangerous Goods Hazard Warning			
No	Client Sample ID	Sampled Date/Time dd/mm/yyyy hh:mm	Matrix Solid (S) Water (W)						
1	TP114 0.0-0.1	25/10/24	SOIL	X	X				
2	TP114 0.4-0.5	25/10/24	SOIL						
3	TP115 0.0-0.1	25/10/24	SOIL	X	X				
4	TP115 0.2-0.3	25/10/24	SOIL						
5	TP116 0.0-0.1	25/10/24	SOIL	X	X				
6	TP116 0.2-0.3	25/10/24	SOIL						
7	TP117 0.0-0.1	25/10/24	SOIL		X				
8	D.25.10.24	25/10/24	SOIL		X				
9	T.25.10.24	25/10/24	SOIL						
10	D2.25.10.24	25/10/24	SOIL		X				
Total Counts				3	6				
Method of Shipment				Signature		Date	Time		
☐ Courier (#) ☐ Hand Delivered ☐ Postal				Date		28/10/24	11:30		
Laboratory Use Only				Signature		Date	Report No		
Received By Y. Matuora				SYD BNE MEL PER ADL NTL DRW		11.0	1153637		
Received By				SYD BNE MEL PER ADL NTL DRW					



CHAIN OF CUSTODY RECORD

Eurofins | Environmental Testing, ABN 50 005 085 521

☐ Sydney Laboratory
Unit F3 Bld.F 16 Mars Road Lane Cove West NSW 2086
02 9900 8400 EnviroSampleNSW@eurofins.com

☐ Brisbane Laboratory
Unit 1 21 Smallwood Place Murarie QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

☐ Perth Laboratory
Unit 2 91 Leach Highway Kewdale WA 6105
08 9251 5600 EnviroSampleWA@eurofins.com

☐ Melbourne Laboratory
6 Monterey Road Dandenong South VIC 3175
03 8564 5000 EnviroSampleVic@eurofins.com

015

Company		Qualtest		Project No		NEW23P-0208		Project Manager		Emma Coleman		Sampler(s)		T.Hall			
Address		2 Murray Dwyer Circuit NSW 2304		Project Name		Updated DSI - Ourimbah		EDD Format		Excel		Handed over by					
Contact Name		Emma Coleman		Analyses When multiple are requested, please specify "Cds" or "T-Listed". SUITE code must be used to attract SUITE pricing. Metals MB Asbestos (w/w%) Suite B7 (TRH, BTEX, PAH, Metals) pH and CEC Suite B4 (TRH, BTEX, PAH)										Email for Invoice		accounts@qualtest.com.au	
Phone No														Email for Results		libbybetz@qualtest.com.au emmacoleman@qualtest.com.au billysnow@qualtest.com.au lewiscallinan@qualtest.com.au tomhall@qualtest.com.au	
Special Directions																	
Purchase Order																	
Quote ID No		180622QUAN-3															
No	Client Sample ID	Sampled Date/Time dd/mm/yyyy hh:mm	Matrix Solid (S) Water (W)														
1	T2.25.10.24	25/10/24	SOIL														
2	TB.25.10.24	25/10/24	SOIL														
3	ASB TP01	25/10/24	Fragment														
4																	
5																	
6																	
7																	
8																	
9																	
10																	
Total Counts						1						1 2		1 1			
Method of Shipment				☐ Courier (#) ☐ Hand Delivered ☐ Postal		Name		Signature		Date		Time		Temperature			
Laboratory Use Only				Received By Ymatacova		SYD BNE MEL PER ADL NTL DRW		Signature		Date 28/10/24		Time 16:30		Temperature 11.0			
				Received By		SYD BNE MEL PER ADL NTL DRW		Signature		Date		Time		Report No 1103637			

Qualtest
2 Murray Dwyer Circuit
Mayfield West
NSW 2304



NATA Accredited
Accreditation Number 1261
Site Number 18217

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: **Emma Coleman**

Report **1153637-S**
 Project name **UPDATED DSI - OURIMBAH**
 Project ID **NEW23P-0208**
 Received Date **Oct 28, 2024**

Client Sample ID			TP101 0.0-0.1	TP102 0.0-0.1	TP103 0.0-0.1	TP104 0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N24- Oc0070595	N24- Oc0070597	N24- Oc0070599	N24- Oc0070601
Date Sampled			Oct 25, 2024	Oct 25, 2024	Oct 25, 2024	Oct 25, 2024
Test/Reference	LOR	Unit				
Conductivity (1:5 aqueous extract at 25 °C as rec.)	10	uS/cm	12	-	-	-
pH (1:5 Aqueous extract at 25 °C as rec.)	0.1	pH Units	7.4	-	-	-
Heavy Metals						
Arsenic	2	mg/kg	4.4	4.1	6.7	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	0.8	-
Chromium	5	mg/kg	18	22	15	-
Copper	5	mg/kg	15	16	61	-
Lead	5	mg/kg	160	20	75	-
Mercury	0.1	mg/kg	0.2	< 0.1	0.1	-
Nickel	5	mg/kg	< 5	13	9.0	-
Zinc	5	mg/kg	780	70	850	-
Cation Exchange Capacity						
Cation Exchange Capacity	0.5	meq/100g	8.6	-	-	-
Sample Properties						
% Moisture	1	%	17	13	27	27
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	-	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	-	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	-	< 50	< 50	75
TRH C10-C36 (Total)	50	mg/kg	-	< 50	< 50	75
BTEX						
Benzene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	-	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	INT	61	79
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2) ^{*N01}	50	mg/kg	-	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	-	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	-	< 20	< 20	< 20

Client Sample ID			TP101 0.0-0.1	TP102 0.0-0.1	TP103 0.0-0.1	TP104 0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N24- Oc0070595	N24- Oc0070597	N24- Oc0070599	N24- Oc0070601
Date Sampled			Oct 25, 2024	Oct 25, 2024	Oct 25, 2024	Oct 25, 2024
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	< 0.5	< 0.5	1.4
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	0.6	0.6	1.7
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	1.2	1.2	2.0
Acenaphthene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	0.7
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	1.1
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	-	< 0.5	< 0.5	1.0
Benzo(g,h,i)perylene	0.5	mg/kg	-	< 0.5	< 0.5	0.8
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5	1.2
Chrysene	0.5	mg/kg	-	< 0.5	< 0.5	0.9
Dibenz(a,h)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5	1.4
Fluorene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	-	< 0.5	< 0.5	1.4
Total PAH*	0.5	mg/kg	-	< 0.5	< 0.5	8.5
2-Fluorobiphenyl (surr.)	1	%	-	84	85	104
p-Terphenyl-d14 (surr.)	1	%	-	82	81	113
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	-	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	-	< 100	< 100	100
TRH >C34-C40	100	mg/kg	-	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	-	< 100	< 100	100

Client Sample ID			TP105 0.0-0.1	TP106 0.0-0.1	TP107 0.0-0.1	TP107 0.4-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N24- Oc0070603	N24- Oc0070605	N24- Oc0070608	N24- Oc0070609
Date Sampled			Oct 25, 2024	Oct 25, 2024	Oct 25, 2024	Oct 25, 2024
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	< 2	5.2	4.4	3.6
Cadmium	0.4	mg/kg	< 0.4	1.1	< 0.4	< 0.4
Chromium	5	mg/kg	< 5	17	12	11
Copper	5	mg/kg	8.7	28	25	17
Lead	5	mg/kg	20	39	26	26
Mercury	0.1	mg/kg	< 0.1	0.1	0.1	< 0.1
Nickel	5	mg/kg	< 5	15	8.1	< 5
Zinc	5	mg/kg	310	130	150	49
Sample Properties						
% Moisture	1	%	11	27	34	17

Client Sample ID			TP105 0.0-0.1	TP106 0.0-0.1	TP107 0.0-0.1	TP107 0.4-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N24- Oc0070603	N24- Oc0070605	N24- Oc0070608	N24- Oc0070609
Date Sampled			Oct 25, 2024	Oct 25, 2024	Oct 25, 2024	Oct 25, 2024
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	64
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	64
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	63	64	61	52
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2)* ^{N01}	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	98	98	92	94
p-Terphenyl-d14 (surr.)	1	%	94	93	94	92
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100

Client Sample ID			TP105 0.0-0.1	TP106 0.0-0.1	TP107 0.0-0.1	TP107 0.4-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N24- Oc0070603	N24- Oc0070605	N24- Oc0070608	N24- Oc0070609
Date Sampled			Oct 25, 2024	Oct 25, 2024	Oct 25, 2024	Oct 25, 2024
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	-	-
4,4'-DDD	0.05	mg/kg	-	< 0.05	-	-
4,4'-DDE	0.05	mg/kg	-	< 0.05	-	-
4,4'-DDT	0.05	mg/kg	-	< 0.05	-	-
a-HCH	0.05	mg/kg	-	< 0.05	-	-
Aldrin	0.05	mg/kg	-	< 0.05	-	-
b-HCH	0.05	mg/kg	-	< 0.05	-	-
d-HCH	0.05	mg/kg	-	< 0.05	-	-
Dieldrin	0.05	mg/kg	-	< 0.05	-	-
Endosulfan I	0.05	mg/kg	-	< 0.05	-	-
Endosulfan II	0.05	mg/kg	-	< 0.05	-	-
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	-	-
Endrin	0.05	mg/kg	-	0.07	-	-
Endrin aldehyde	0.05	mg/kg	-	< 0.05	-	-
Endrin ketone	0.05	mg/kg	-	< 0.05	-	-
g-HCH (Lindane)	0.05	mg/kg	-	< 0.05	-	-
Heptachlor	0.05	mg/kg	-	< 0.05	-	-
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	-	-
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	-	-
Methoxychlor	0.05	mg/kg	-	< 0.05	-	-
Toxaphene	0.5	mg/kg	-	< 0.5	-	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	< 0.05	-	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	< 0.05	-	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	< 0.1	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	< 0.1	-	-
Dibutylchloredate (surr.)	1	%	-	122	-	-
Tetrachloro-m-xylene (surr.)	1	%	-	100	-	-
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1221	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1232	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1242	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1248	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1254	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1260	0.1	mg/kg	-	< 0.1	-	-
Total PCB*	0.1	mg/kg	-	< 0.1	-	-
Dibutylchloredate (surr.)	1	%	-	122	-	-
Tetrachloro-m-xylene (surr.)	1	%	-	100	-	-

Client Sample ID			TP107 0.8-0.9	TP108 0.0-0.1	TP109 0.0-0.1	TP109 0.4-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N24- Oc0070610	N24- Oc0070611	N24- Oc0070613	N24- Oc0070614
Date Sampled			Oct 25, 2024	Oct 25, 2024	Oct 25, 2024	Oct 25, 2024
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	< 2	5.6	5.1	4.4
Cadmium	0.4	mg/kg	< 0.4	1.5	< 0.4	< 0.4
Chromium	5	mg/kg	6.4	18	20	13
Copper	5	mg/kg	6.7	48	27	25
Lead	5	mg/kg	37	160	33	30
Mercury	0.1	mg/kg	< 0.1	0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	14	7.6	6.0
Zinc	5	mg/kg	34	700	110	110
Sample Properties						
% Moisture	1	%	21	23	24	12
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	69	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	160	< 50	< 50	58
TRH C10-C36 (Total)	50	mg/kg	229	< 50	< 50	58
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	69	52	58	INT
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2)* ^{N01}	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			TP107 0.8-0.9	TP108 0.0-0.1	TP109 0.0-0.1	TP109 0.4-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N24- Oc0070610	N24- Oc0070611	N24- Oc0070613	N24- Oc0070614
Date Sampled			Oct 25, 2024	Oct 25, 2024	Oct 25, 2024	Oct 25, 2024
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	108	100	92	87
p-Terphenyl-d14 (surr.)	1	%	115	98	93	66
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	190	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	130	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	320	< 100	< 100	< 100
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	-	-
4,4'-DDD	0.05	mg/kg	-	< 0.05	-	-
4,4'-DDE	0.05	mg/kg	-	< 0.05	-	-
4,4'-DDT	0.05	mg/kg	-	< 0.05	-	-
a-HCH	0.05	mg/kg	-	< 0.05	-	-
Aldrin	0.05	mg/kg	-	0.18	-	-
b-HCH	0.05	mg/kg	-	< 0.05	-	-
d-HCH	0.05	mg/kg	-	< 0.05	-	-
Dieldrin	0.05	mg/kg	-	< 0.05	-	-
Endosulfan I	0.05	mg/kg	-	< 0.05	-	-
Endosulfan II	0.05	mg/kg	-	< 0.05	-	-
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	-	-
Endrin	0.05	mg/kg	-	< 0.05	-	-
Endrin aldehyde	0.05	mg/kg	-	< 0.05	-	-
Endrin ketone	0.05	mg/kg	-	< 0.05	-	-
g-HCH (Lindane)	0.05	mg/kg	-	< 0.05	-	-
Heptachlor	0.05	mg/kg	-	< 0.05	-	-
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	-	-
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	-	-
Methoxychlor	0.05	mg/kg	-	< 0.05	-	-
Toxaphene	0.5	mg/kg	-	< 0.5	-	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	0.18	-	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	< 0.05	-	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	0.18	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	< 0.1	-	-
Dibutylchlorendate (surr.)	1	%	-	114	-	-
Tetrachloro-m-xylene (surr.)	1	%	-	104	-	-
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1221	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1232	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1242	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1248	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1254	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1260	0.1	mg/kg	-	< 0.1	-	-
Total PCB*	0.1	mg/kg	-	< 0.1	-	-
Dibutylchlorendate (surr.)	1	%	-	114	-	-
Tetrachloro-m-xylene (surr.)	1	%	-	104	-	-

Client Sample ID			TP110 0.0-0.1	TP111 0.0-0.1	TP111 0.4-0.5	TP112 0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N24- Oc0070616	N24- Oc0070618	N24- Oc0070619	N24- Oc0070621
Date Sampled			Oct 25, 2024	Oct 25, 2024	Oct 25, 2024	Oct 25, 2024
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	< 2	4.1	4.4	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	< 5	10	9.5	< 5
Copper	5	mg/kg	10	2300	20	9.1
Lead	5	mg/kg	190	220	32	15
Mercury	0.1	mg/kg	0.2	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	16	5.2	< 5
Zinc	5	mg/kg	69	320	210	37
Sample Properties						
% Moisture	1	%	32	19	13	16
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	53	INT	62	60
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2)* ^{N01}	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			TP110 0.0-0.1	TP111 0.0-0.1	TP111 0.4-0.5	TP112 0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N24- Oc0070616	N24- Oc0070618	N24- Oc0070619	N24- Oc0070621
Date Sampled			Oct 25, 2024	Oct 25, 2024	Oct 25, 2024	Oct 25, 2024
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	91	81	90	86
p-Terphenyl-d14 (surr.)	1	%	94	77	83	89
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	-	-
4,4'-DDD	0.05	mg/kg	-	< 0.05	-	-
4,4'-DDE	0.05	mg/kg	-	< 0.05	-	-
4,4'-DDT	0.05	mg/kg	-	< 0.05	-	-
a-HCH	0.05	mg/kg	-	< 0.05	-	-
Aldrin	0.05	mg/kg	-	< 0.05	-	-
b-HCH	0.05	mg/kg	-	< 0.05	-	-
d-HCH	0.05	mg/kg	-	< 0.05	-	-
Dieldrin	0.05	mg/kg	-	< 0.05	-	-
Endosulfan I	0.05	mg/kg	-	< 0.05	-	-
Endosulfan II	0.05	mg/kg	-	< 0.05	-	-
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	-	-
Endrin	0.05	mg/kg	-	< 0.05	-	-
Endrin aldehyde	0.05	mg/kg	-	< 0.05	-	-
Endrin ketone	0.05	mg/kg	-	< 0.05	-	-
g-HCH (Lindane)	0.05	mg/kg	-	< 0.05	-	-
Heptachlor	0.05	mg/kg	-	< 0.05	-	-
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	-	-
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	-	-
Methoxychlor	0.05	mg/kg	-	< 0.05	-	-
Toxaphene	0.5	mg/kg	-	< 0.5	-	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	< 0.05	-	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	< 0.05	-	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	< 0.1	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	< 0.1	-	-
Dibutylchlorendate (surr.)	1	%	-	117	-	-
Tetrachloro-m-xylene (surr.)	1	%	-	77	-	-
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1221	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1232	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1242	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1248	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1254	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1260	0.1	mg/kg	-	< 0.1	-	-
Total PCB*	0.1	mg/kg	-	< 0.1	-	-
Dibutylchlorendate (surr.)	1	%	-	117	-	-
Tetrachloro-m-xylene (surr.)	1	%	-	77	-	-

Client Sample ID			TP113 0.0-0.1	TP114 0.0-0.1	TP115 0.0-0.1	TP116 0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N24- Oc0070623	N24- Oc0070625	N24- Oc0070627	N24- Oc0070629
Date Sampled			Oct 25, 2024	Oct 25, 2024	Oct 25, 2024	Oct 25, 2024
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	< 2	4.5	< 2	2.1
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	< 5	14	5.8	6.0
Copper	5	mg/kg	15	30	15	14
Lead	5	mg/kg	21	35	11	12
Mercury	0.1	mg/kg	0.1	0.1	< 0.1	0.1
Nickel	5	mg/kg	< 5	20	< 5	< 5
Zinc	5	mg/kg	150	240	15	12
Sample Properties						
% Moisture	1	%	16	23	16	14
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	76	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	76	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	60	74	76	81
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2)* ^{N01}	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			TP113 0.0-0.1	TP114 0.0-0.1	TP115 0.0-0.1	TP116 0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N24- Oc0070623	N24- Oc0070625	N24- Oc0070627	N24- Oc0070629
Date Sampled			Oct 25, 2024	Oct 25, 2024	Oct 25, 2024	Oct 25, 2024
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	85	92	85	78
p-Terphenyl-d14 (surr.)	1	%	78	91	76	66
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	-	-
4,4'-DDD	0.05	mg/kg	< 0.05	-	-	-
4,4'-DDE	0.05	mg/kg	< 0.05	-	-	-
4,4'-DDT	0.05	mg/kg	< 0.05	-	-	-
a-HCH	0.05	mg/kg	< 0.05	-	-	-
Aldrin	0.05	mg/kg	< 0.05	-	-	-
b-HCH	0.05	mg/kg	< 0.05	-	-	-
d-HCH	0.05	mg/kg	< 0.05	-	-	-
Dieldrin	0.05	mg/kg	< 0.05	-	-	-
Endosulfan I	0.05	mg/kg	< 0.05	-	-	-
Endosulfan II	0.05	mg/kg	< 0.05	-	-	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	-	-
Endrin	0.05	mg/kg	< 0.05	-	-	-
Endrin aldehyde	0.05	mg/kg	< 0.05	-	-	-
Endrin ketone	0.05	mg/kg	< 0.05	-	-	-
g-HCH (Lindane)	0.05	mg/kg	< 0.05	-	-	-
Heptachlor	0.05	mg/kg	< 0.05	-	-	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	-	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	-	-
Methoxychlor	0.05	mg/kg	< 0.05	-	-	-
Toxaphene	0.5	mg/kg	< 0.5	-	-	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	-	-	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	-	-	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	-	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	-	-	-
Dibutylchlorendate (surr.)	1	%	115	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	81	-	-	-
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1221	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1232	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1242	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1248	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1254	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1260	0.1	mg/kg	< 0.1	-	-	-
Total PCB*	0.1	mg/kg	< 0.1	-	-	-
Dibutylchlorendate (surr.)	1	%	115	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	81	-	-	-

Client Sample ID			SS117	D.25.10.24	D2.25.10.24
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			N24-Oc0070631	N24-Oc0070632	N24-Oc0070634
Date Sampled			Oct 25, 2024	Oct 25, 2024	Oct 25, 2024
Test/Reference	LOR	Unit			
Heavy Metals					
Arsenic	2	mg/kg	6.0	< 2	9.6
Cadmium	0.4	mg/kg	< 0.4	< 0.4	0.5
Chromium	5	mg/kg	12	< 5	31
Copper	5	mg/kg	22	15	23
Lead	5	mg/kg	24	21	310
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	8.1	< 5	15
Zinc	5	mg/kg	67	150	1200
Sample Properties					
% Moisture	1	%	61	18	18
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					
TRH C6-C9	20	mg/kg	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	110	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	110	< 50
BTEX					
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	69	INT	95
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2)* ^{N01}	50	mg/kg	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20
Polycyclic Aromatic Hydrocarbons					
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5

Client Sample ID			SS117	D.25.10.24	D2.25.10.24
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			N24- Oc0070631	N24- Oc0070632	N24- Oc0070634
Date Sampled			Oct 25, 2024	Oct 25, 2024	Oct 25, 2024
Test/Reference	LOR	Unit			
Polycyclic Aromatic Hydrocarbons					
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	82	85	82
p-Terphenyl-d14 (surr.)	1	%	70	72	75
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	130	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	130	< 100

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
Conductivity (1:5 aqueous extract at 25 °C as rec.) - Method: LTM-INO-4030 Conductivity	Sydney	Oct 29, 2024	7 Days
Cation Exchange Capacity - Method: LTM-MET-3060 Cation Exchange Capacity by bases & Exchangeable Sodium Percentage	Melbourne	Oct 30, 2024	28 Days
pH (1:5 Aqueous extract at 25 °C as rec.) - Method: LTM-GEN-7090 pH by ISE	Sydney	Oct 29, 2024	7 Days
Metals M8 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Oct 29, 2024	28 Days
% Moisture - Method: LTM-GEN-7080 Moisture	Sydney	Oct 28, 2024	14 Days
Eurofins Suite B4			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Oct 29, 2024	14 Days
BTEX - Method: LTM-ORG-2010 BTEX and Volatile TRH	Sydney	Oct 29, 2024	14 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Oct 29, 2024	14 Days
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Sydney	Oct 29, 2024	14 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Oct 29, 2024	14 Days
Organochlorine Pesticides - Method: LTM-ORG-2220 OCP & PCB in Soil and Water	Sydney	Oct 29, 2024	14 Days
Polychlorinated Biphenyls - Method: LTM-ORG-2220 OCP & PCB in Soil and Water	Sydney	Oct 29, 2024	28 Days



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Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

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 T: +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
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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
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Eurofins Environment Testing NZ Ltd

NZBN: 9429046024954

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: Qualtest
Address: 2 Murray Dwyer Circuit
Mayfield West
NSW 2304

Order No.:
Report #: 1153637
Phone: 02 4968 4468
Fax: 02 4960 9775

Received: Oct 28, 2024 11:30 AM
Due: Oct 30, 2024
Priority: 1 Day
Contact Name: Emma Coleman

Project Name: UPDATED DSI - OURIMBAH
Project ID: NEW23P-0208

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - WA guidelines	HOLD*	HOLD*	pH (1:5 Aqueous extract at 25 °C as rec.)	Metals M8	Suite B13: OCP/PCB	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	Eurofins Suite B4
Melbourne Laboratory - NATA # 1261 Site # 1254													X		
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X	X	X	X	X	X	X
Mayfield West Laboratory - NATA # 1261 Site # 25079								X							
External Laboratory															
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID										
1	TP101 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070595	X			X	X		X	X		
2	TP101 0.2-0.3	Oct 25, 2024		Soil	N24-Oc0070596		X								
3	TP102 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070597	X						X		X	
4	TP102 0.2-0.3	Oct 25, 2024		Soil	N24-Oc0070598		X								
5	TP103 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070599	X						X		X	
6	TP103 0.3-0.4	Oct 25, 2024		Soil	N24-Oc0070600		X								
7	TP104 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070601							X			X
8	TP104 0.3-0.4	Oct 25, 2024		Soil	N24-Oc0070602		X								
9	TP105 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070603	X						X		X	
10	TP105 0.4-0.5	Oct 25, 2024		Soil	N24-Oc0070604		X								
11	TP106 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070605	X					X	X		X	
12	TP106 0.4-0.5	Oct 25, 2024		Soil	N24-Oc0070606		X								



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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 T: +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: Qualtest
Address: 2 Murray Dwyer Circuit
Mayfield West
NSW 2304

Project Name: UPDATED DSI - OURIMBAH
Project ID: NEW23P-0208

Order No.:
Report #: 1153637
Phone: 02 4968 4468
Fax: 02 4960 9775

Received: Oct 28, 2024 11:30 AM
Due: Oct 30, 2024
Priority: 1 Day
Contact Name: Emma Coleman

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - WA guidelines	HOLD*	HOLD*	pH (1:5 Aqueous extract at 25 °C as rec.)	Metals M8	Suite B13: OCP/PCB	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	Eurofins Suite B4
Melbourne Laboratory - NATA # 1261 Site # 1254													X		
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X	X	X	X	X	X	X
Mayfield West Laboratory - NATA # 1261 Site # 25079								X							
13	TP106 0.6-0.7	Oct 25, 2024		Soil	N24-Oc0070607		X								
14	TP107 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070608	X						X		X	
15	TP107 0.4-0.5	Oct 25, 2024		Soil	N24-Oc0070609							X		X	
16	TP107 0.8-0.9	Oct 25, 2024		Soil	N24-Oc0070610							X		X	
17	TP108 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070611	X				X	X			X	
18	TP108 0.2-0.3	Oct 25, 2024		Soil	N24-Oc0070612		X								
19	TP109 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070613	X						X		X	
20	TP109 0.4-0.5	Oct 25, 2024		Soil	N24-Oc0070614							X		X	
21	TP109 0.8-0.9	Oct 25, 2024		Soil	N24-Oc0070615		X								
22	TP110 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070616	X						X		X	
23	TP110 0.2-0.3	Oct 25, 2024		Soil	N24-Oc0070617		X								
24	TP111 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070618	X				X	X			X	
25	TP111 0.4-0.5	Oct 25, 2024		Soil	N24-Oc0070619							X		X	
26	TP111 0.8-0.9	Oct 25, 2024		Soil	N24-Oc0070620		X								
27	TP112 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070621	X						X		X	



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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 T: +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: Qualtest Address: 2 Murray Dwyer Circuit Mayfield West NSW 2304	Order No.: Report #: 1153637 Phone: 02 4968 4468 Fax: 02 4960 9775	Received: Oct 28, 2024 11:30 AM Due: Oct 30, 2024 Priority: 1 Day Contact Name: Emma Coleman
Project Name: UPDATED DSI - OURIMBAH Project ID: NEW23P-0208		
Eurofins Analytical Services Manager : Andrew Black		

Sample Detail						Asbestos - WA guidelines	HOLD*	HOLD*	pH (1:5 Aqueous extract at 25 °C as rec.)	Metals M8	Suite B13: OCP/PCB	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	Eurofins Suite B4
Melbourne Laboratory - NATA # 1261 Site # 1254													X		
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X	X	X	X	X	X	X
Mayfield West Laboratory - NATA # 1261 Site # 25079								X							
28	TP112 0.4-0.5	Oct 25, 2024		Soil	N24-Oc0070622		X								
29	TP113 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070623	X					X	X		X	
30	TP113 0.2-0.3	Oct 25, 2024		Soil	N24-Oc0070624		X								
31	TP114 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070625	X						X		X	
32	TP114 0.4-0.5	Oct 25, 2024		Soil	N24-Oc0070626		X								
33	TP115 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070627	X						X		X	
34	TP115 0.2-0.3	Oct 25, 2024		Soil	N24-Oc0070628		X								
35	TP116 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070629	X						X		X	
36	TP116 0.2-0.3	Oct 25, 2024		Soil	N24-Oc0070630		X								
37	SS117	Oct 25, 2024		Soil	N24-Oc0070631							X		X	
38	D.25.10.24	Oct 25, 2024		Soil	N24-Oc0070632							X		X	
39	T.25.10.24	Oct 25, 2024		Soil	N24-Oc0070633		X								
40	D2.25.10.24	Oct 25, 2024		Soil	N24-Oc0070634							X		X	
41	T2.25.10.24	Oct 25, 2024		Soil	N24-Oc0070635		X								
42	TB.25.10.24	Oct 25, 2024		Water	N24-Oc0070636										X



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ABN: 50 005 085 521

ABN: 91 05 0159 898

NZBN: 9429046024954

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 T: +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: Qualtest
Address: 2 Murray Dwyer Circuit
Mayfield West
NSW 2304

Project Name: UPDATED DSI - OURIMBAH
Project ID: NEW23P-0208

Order No.:
Report #: 1153637
Phone: 02 4968 4468
Fax: 02 4960 9775

Received: Oct 28, 2024 11:30 AM
Due: Oct 30, 2024
Priority: 1 Day
Contact Name: Emma Coleman

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - WA guidelines	HOLD*	HOLD*	pH (1:5 Aqueous extract at 25 °C as rec.)	Metals M8	Suite B13: OCP/PCB	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	Eurofins Suite B4
Melbourne Laboratory - NATA # 1261 Site # 1254													X		
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X	X	X	X	X	X	X
Mayfield West Laboratory - NATA # 1261 Site # 25079								X							
43	ASB TP01	Oct 25, 2024		Building Materials	N24-Oc0070637			X							
Test Counts						15	19	19	1	1	4	23	1	21	2

Internal Quality Control Review and Glossary

General

1. 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.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. 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

1. 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.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. 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.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. 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							
Conductivity (1:5 aqueous extract at 25 °C as rec.)	uS/cm	< 10			10	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
Method Blank							
Cation Exchange Capacity							
Cation Exchange Capacity	meq/100g	< 0.5			0.5	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g,h,i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a,h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4,4'-DDD	mg/kg	< 0.05			0.05	Pass	
4,4'-DDE	mg/kg	< 0.05			0.05	Pass	
4,4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-HCH	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-HCH	mg/kg	< 0.05			0.05	Pass	
d-HCH	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-HCH (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g,h,i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a,h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4,4'-DDD	mg/kg	< 0.05			0.05	Pass	
4,4'-DDE	mg/kg	< 0.05			0.05	Pass	
4,4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-HCH	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-HCH	mg/kg	< 0.05			0.05	Pass	
d-HCH	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-HCH (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
LCS - % Recovery							
Conductivity (1:5 aqueous extract at 25 °C as rec.)	%	98			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	95			80-120	Pass	
Cadmium	%	97			80-120	Pass	
Chromium	%	99			80-120	Pass	
Copper	%	100			80-120	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Lead	%	104			80-120	Pass	
Mercury	%	109			80-120	Pass	
Nickel	%	99			80-120	Pass	
Zinc	%	101			80-120	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C10-C14	%	85			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	82			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C10-C14	%	79			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	77			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	120			70-130	Pass	
Acenaphthylene	%	128			70-130	Pass	
Anthracene	%	115			70-130	Pass	
Benz(a)anthracene	%	113			70-130	Pass	
Benzo(a)pyrene	%	112			70-130	Pass	
Benzo(b&j)fluoranthene	%	98			70-130	Pass	
Benzo(g,h,i)perylene	%	107			70-130	Pass	
Benzo(k)fluoranthene	%	124			70-130	Pass	
Chrysene	%	117			70-130	Pass	
Dibenz(a,h)anthracene	%	107			70-130	Pass	
Fluoranthene	%	95			70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	94			70-130	Pass	
Naphthalene	%	123			70-130	Pass	
Phenanthrene	%	117			70-130	Pass	
Pyrene	%	81			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	72			70-130	Pass	
4,4'-DDD	%	72			70-130	Pass	
4,4'-DDE	%	87			70-130	Pass	
4,4'-DDT	%	102			70-130	Pass	
a-HCH	%	106			70-130	Pass	
Aldrin	%	103			70-130	Pass	
b-HCH	%	125			70-130	Pass	
d-HCH	%	103			70-130	Pass	
Dieldrin	%	88			70-130	Pass	
Endosulfan I	%	83			70-130	Pass	
Endosulfan II	%	74			70-130	Pass	
Endosulfan sulphate	%	99			70-130	Pass	
Endrin	%	103			70-130	Pass	
Endrin aldehyde	%	95			70-130	Pass	
Endrin ketone	%	79			70-130	Pass	
g-HCH (Lindane)	%	130			70-130	Pass	
Heptachlor	%	125			70-130	Pass	
Heptachlor epoxide	%	82			70-130	Pass	
Hexachlorobenzene	%	122			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Methoxychlor	%	98			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1016	%	102			70-130	Pass	
Aroclor-1260	%	72			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	70			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	92			70-130	Pass	
Toluene	%	94			70-130	Pass	
Ethylbenzene	%	80			70-130	Pass	
m&p-Xylenes	%	113			70-130	Pass	
o-Xylene	%	85			70-130	Pass	
Xylenes - Total*	%	104			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	89			70-130	Pass	
TRH C6-C10	%	73			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	112			70-130	Pass	
Acenaphthylene	%	107			70-130	Pass	
Anthracene	%	107			70-130	Pass	
Benz(a)anthracene	%	104			70-130	Pass	
Benzo(a)pyrene	%	108			70-130	Pass	
Benzo(b&j)fluoranthene	%	117			70-130	Pass	
Benzo(g,h,i)perylene	%	101			70-130	Pass	
Benzo(k)fluoranthene	%	115			70-130	Pass	
Chrysene	%	113			70-130	Pass	
Dibenz(a,h)anthracene	%	75			70-130	Pass	
Fluoranthene	%	107			70-130	Pass	
Fluorene	%	112			70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	87			70-130	Pass	
Naphthalene	%	106			70-130	Pass	
Phenanthrene	%	107			70-130	Pass	
Pyrene	%	105			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	97			70-130	Pass	
4,4'-DDD	%	93			70-130	Pass	
4,4'-DDE	%	105			70-130	Pass	
4,4'-DDT	%	92			70-130	Pass	
a-HCH	%	103			70-130	Pass	
Aldrin	%	102			70-130	Pass	
b-HCH	%	103			70-130	Pass	
d-HCH	%	100			70-130	Pass	
Dieldrin	%	106			70-130	Pass	
Endosulfan I	%	108			70-130	Pass	
Endosulfan II	%	98			70-130	Pass	
Endosulfan sulphate	%	98			70-130	Pass	
Endrin	%	100			70-130	Pass	
Endrin aldehyde	%	83			70-130	Pass	

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin ketone				%	92			70-130	Pass	
g-HCH (Lindane)				%	103			70-130	Pass	
Heptachlor				%	99			70-130	Pass	
Heptachlor epoxide				%	99			70-130	Pass	
Hexachlorobenzene				%	105			70-130	Pass	
Methoxychlor				%	94			70-130	Pass	
LCS - % Recovery										
Polychlorinated Biphenyls										
Aroclor-1016				%	90			70-130	Pass	
Aroclor-1260				%	101			70-130	Pass	
Test	Lab Sample ID	QA Source		Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery										
Heavy Metals					Result 1					
Nickel	S24-Oc0074279	NCP		%	102			75-125	Pass	
Spike - % Recovery										
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					Result 1					
TRH C6-C9	S24-Oc0069741	NCP		%	91			70-130	Pass	
Spike - % Recovery										
BTEX					Result 1					
Benzene	S24-Oc0069741	NCP		%	87			70-130	Pass	
Toluene	S24-Oc0069741	NCP		%	96			70-130	Pass	
Ethylbenzene	S24-Oc0069741	NCP		%	91			70-130	Pass	
m&p-Xylenes	S24-Oc0069741	NCP		%	114			70-130	Pass	
o-Xylene	S24-Oc0069741	NCP		%	83			70-130	Pass	
Xylenes - Total*	S24-Oc0069741	NCP		%	104			70-130	Pass	
Spike - % Recovery										
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					Result 1					
Naphthalene	S24-Oc0069741	NCP		%	97			70-130	Pass	
TRH C6-C10	S24-Oc0069741	NCP		%	91			70-130	Pass	
Spike - % Recovery										
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					Result 1					
TRH C10-C14	N24-Oc0070599	CP		%	72			70-130	Pass	
Spike - % Recovery										
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					Result 1					
TRH >C10-C16	N24-Oc0070599	CP		%	71			70-130	Pass	
Spike - % Recovery										
Organochlorine Pesticides					Result 1					
Chlordanes - Total	N24-Oc0070623	CP		%	106			70-130	Pass	
4,4'-DDD	N24-Oc0070623	CP		%	92			70-130	Pass	
4,4'-DDE	N24-Oc0070623	CP		%	111			70-130	Pass	
4,4'-DDT	N24-Oc0070623	CP		%	123			70-130	Pass	
a-HCH	N24-Oc0070623	CP		%	90			70-130	Pass	
Aldrin	N24-Oc0070623	CP		%	98			70-130	Pass	
b-HCH	N24-Oc0070623	CP		%	98			70-130	Pass	
d-HCH	N24-Oc0070623	CP		%	89			70-130	Pass	
Dieldrin	N24-Oc0070623	CP		%	105			70-130	Pass	
Endosulfan I	N24-Oc0070623	CP		%	101			70-130	Pass	
Endosulfan II	N24-Oc0070623	CP		%	93			70-130	Pass	
Endrin ketone	N24-Oc0070623	CP		%	115			70-130	Pass	
g-HCH (Lindane)	N24-Oc0070623	CP		%	113			70-130	Pass	
Heptachlor	N24-Oc0070623	CP		%	106			70-130	Pass	
Heptachlor epoxide	N24-Oc0070623	CP		%	99			70-130	Pass	
Hexachlorobenzene	N24-Oc0070623	CP		%	103			70-130	Pass	
Methoxychlor	N24-Oc0070623	CP		%	111			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1016	N24-Oc0070623	CP	%	90			70-130	Pass	
Aroclor-1260	N24-Oc0070623	CP	%	109			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	N24-Oc0070625	CP	%	90			75-125	Pass	
Cadmium	N24-Oc0070625	CP	%	95			75-125	Pass	
Chromium	N24-Oc0070625	CP	%	84			75-125	Pass	
Copper	N24-Oc0070625	CP	%	83			75-125	Pass	
Lead	N24-Oc0070625	CP	%	97			75-125	Pass	
Mercury	N24-Oc0070625	CP	%	103			75-125	Pass	
Zinc	N24-Oc0070625	CP	%	80			75-125	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S24-Oc0075501	NCP	%	101			70-130	Pass	
Acenaphthylene	S24-Oc0075501	NCP	%	95			70-130	Pass	
Anthracene	S24-Oc0075501	NCP	%	109			70-130	Pass	
Benz(a)anthracene	S24-Oc0075501	NCP	%	87			70-130	Pass	
Benzo(a)pyrene	S24-Oc0075501	NCP	%	116			70-130	Pass	
Benzo(b&j)fluoranthene	S24-Oc0075501	NCP	%	77			70-130	Pass	
Benzo(g,h,i)perylene	S24-Oc0075501	NCP	%	91			70-130	Pass	
Benzo(k)fluoranthene	S24-Oc0075501	NCP	%	90			70-130	Pass	
Chrysene	S24-Oc0075501	NCP	%	115			70-130	Pass	
Dibenz(a,h)anthracene	S24-Oc0075501	NCP	%	86			70-130	Pass	
Fluoranthene	S24-Oc0075501	NCP	%	103			70-130	Pass	
Fluorene	S24-Oc0075501	NCP	%	103			70-130	Pass	
Indeno(1,2,3-cd)pyrene	S24-Oc0075501	NCP	%	76			70-130	Pass	
Naphthalene	S24-Oc0075501	NCP	%	106			70-130	Pass	
Phenanthrene	S24-Oc0075501	NCP	%	92			70-130	Pass	
Pyrene	S24-Oc0075501	NCP	%	109			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
				Result 1	Result 2	RPD			
Conductivity (1:5 aqueous extract at 25 °C as rec.)	N24-Oc0070595	CP	uS/cm	12	11	12	30%	Pass	
pH (1:5 Aqueous extract at 25 °C as rec.)	N24-Oc0070595	CP	pH Units	7.4	7.5	pass	30%	Pass	
Duplicate									
Cation Exchange Capacity				Result 1	Result 2	RPD			
Cation Exchange Capacity	S24-Oc0072353	NCP	meq/100g	13	13	1.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S24-Oc0073300	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S24-Oc0073300	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S24-Oc0073300	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S24-Oc0073300	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S24-Oc0073300	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S24-Oc0073300	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S24-Oc0073300	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	

Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	S24-Oc0073300	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	S24-Oc0073300	NCP	mg/kg	< 20	< 20	<1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	N24-Oc0070608	CP	mg/kg	4.4	4.1	6.0	30%	Pass
Cadmium	N24-Oc0070608	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	N24-Oc0070608	CP	mg/kg	12	12	2.0	30%	Pass
Copper	N24-Oc0070608	CP	mg/kg	25	34	31	30%	Fail
Lead	N24-Oc0070608	CP	mg/kg	26	24	9.0	30%	Pass
Mercury	N24-Oc0070608	CP	mg/kg	0.1	0.1	5.0	30%	Pass
Nickel	N24-Oc0070608	CP	mg/kg	8.1	9.6	18	30%	Pass
Zinc	N24-Oc0070608	CP	mg/kg	150	160	2.0	30%	Pass
Duplicate								
Sample Properties				Result 1	Result 2	RPD		
% Moisture	N24-Oc0070608	CP	%	34	36	8.0	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD		
TRH C10-C14	N24-Oc0070608	CP	mg/kg	< 20	< 20	<1	30%	Pass
TRH C15-C28	N24-Oc0070608	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH C29-C36	N24-Oc0070608	CP	mg/kg	< 50	< 50	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	N24-Oc0070608	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	N24-Oc0070608	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	N24-Oc0070608	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	N24-Oc0070608	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)pyrene	N24-Oc0070608	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b&j)fluoranthene	N24-Oc0070608	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g,h,i)perylene	N24-Oc0070608	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	N24-Oc0070608	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	N24-Oc0070608	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a,h)anthracene	N24-Oc0070608	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	N24-Oc0070608	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluorene	N24-Oc0070608	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	N24-Oc0070608	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	N24-Oc0070608	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	N24-Oc0070608	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	N24-Oc0070608	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
TRH >C10-C16	N24-Oc0070608	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C16-C34	N24-Oc0070608	CP	mg/kg	< 100	< 100	<1	30%	Pass
TRH >C34-C40	N24-Oc0070608	CP	mg/kg	< 100	< 100	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD		
TRH C10-C14	N24-Oc0070618	CP	mg/kg	< 20	< 20	<1	30%	Pass
TRH C15-C28	N24-Oc0070618	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH C29-C36	N24-Oc0070618	CP	mg/kg	< 50	< 50	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	N24-Oc0070618	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	N24-Oc0070618	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	N24-Oc0070618	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	N24-Oc0070618	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass

Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Benzo(a)pyrene	N24-Oc0070618	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b&j)fluoranthene	N24-Oc0070618	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g,h,i)perylene	N24-Oc0070618	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	N24-Oc0070618	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	N24-Oc0070618	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a,h)anthracene	N24-Oc0070618	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	N24-Oc0070618	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluorene	N24-Oc0070618	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	N24-Oc0070618	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	N24-Oc0070618	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	N24-Oc0070618	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	N24-Oc0070618	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
TRH >C10-C16	N24-Oc0070618	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C16-C34	N24-Oc0070618	CP	mg/kg	< 100	< 100	<1	30%	Pass
TRH >C34-C40	N24-Oc0070618	CP	mg/kg	< 100	< 100	<1	30%	Pass
Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	N24-Oc0070618	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
4,4'-DDD	N24-Oc0070618	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDE	N24-Oc0070618	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDT	N24-Oc0070618	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
α-HCH	N24-Oc0070618	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Aldrin	N24-Oc0070618	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
β-HCH	N24-Oc0070618	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
δ-HCH	N24-Oc0070618	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dieldrin	N24-Oc0070618	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan I	N24-Oc0070618	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	N24-Oc0070618	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	N24-Oc0070618	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	N24-Oc0070618	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	N24-Oc0070618	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	N24-Oc0070618	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
γ-HCH (Lindane)	N24-Oc0070618	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	N24-Oc0070618	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	N24-Oc0070618	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	N24-Oc0070618	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	N24-Oc0070618	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Toxaphene	N24-Oc0070618	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Polychlorinated Biphenyls				Result 1	Result 2	RPD		
Aroclor-1016	N24-Oc0070618	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1221	N24-Oc0070618	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1232	N24-Oc0070618	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1242	N24-Oc0070618	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1248	N24-Oc0070618	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1254	N24-Oc0070618	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1260	N24-Oc0070618	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Total PCB*	N24-Oc0070618	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Duplicate								
Sample Properties				Result 1	Result 2	RPD		
% Moisture	N24-Oc0070621	CP	%	16	17	6.0	30%	Pass

Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	N24-Oc0070623	CP	mg/kg	< 2	< 2	<1	30%	Pass
Cadmium	N24-Oc0070623	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	N24-Oc0070623	CP	mg/kg	< 5	< 5	<1	30%	Pass
Copper	N24-Oc0070623	CP	mg/kg	15	16	6.0	30%	Pass
Lead	N24-Oc0070623	CP	mg/kg	21	22	3.0	30%	Pass
Mercury	N24-Oc0070623	CP	mg/kg	0.1	0.1	2.0	30%	Pass
Nickel	N24-Oc0070623	CP	mg/kg	< 5	< 5	<1	30%	Pass
Zinc	N24-Oc0070623	CP	mg/kg	150	140	1.0	30%	Pass

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
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
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:

Nileshni Goundar	Analytical Services Manager
Chamath JHM Annakkage	Senior Analyst-Asbestos
Mickael Ros	Senior Analyst-Metal
Roopesh Rangarajan	Senior Analyst-Organic
Roopesh Rangarajan	Senior Analyst-Sample Properties
Roopesh Rangarajan	Senior Analyst-Volatile
Ryan Phillips	Senior Analyst-Inorganic
Vivian Wang	Senior Analyst-Metal



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](#).

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

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 T: +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: Qualtest
Contact name: Emma Coleman
Project name: UPDATED DSI - OURIMBAH
Project ID: NEW23P-0208
Turnaround time: 1 Day
Date/Time received: Oct 28, 2024 11:30 AM
Eurofins reference: 1153637

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✓ 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:

Andrew Black on phone : (+61) 2 9900 8490 or by email: AndrewBlack@eurofins.com

Results will be delivered electronically via email to Emma Coleman - emmacoleman@qualtest.com.au.

Note: A copy of these results will also be delivered to the general Qualtest email address.

Qualtest
2 Murray Dwyer Circuit
Mayfield West
NSW 2304



NATA Accredited
Accreditation Number 1261
Site Number 18217

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: **Emma Coleman**

Report **1153637-W**
Project name **UPDATED DSI - OURIMBAH**
Project ID **NEW23P-0208**
Received Date **Oct 28, 2024**

Client Sample ID			TB.25.10.24
Sample Matrix			Water
Eurofins Sample No.			N24- Oc0070636
Date Sampled			Oct 25, 2024
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C6-C9	0.02	mg/L	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1
BTEX			
Benzene	0.001	mg/L	< 0.001
Toluene	0.001	mg/L	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002
o-Xylene	0.001	mg/L	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003
4-Bromofluorobenzene (surr.)	1	%	101
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene ^{N02}	0.01	mg/L	< 0.01
TRH >C10-C16 less Naphthalene (F2)* ^{N01}	0.05	mg/L	< 0.05
TRH C6-C10	0.02	mg/L	< 0.02
TRH C6-C10 less BTEX (F1) ^{N04}	0.02	mg/L	< 0.02
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
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

Client Sample ID			TB.25.10.24
Sample Matrix			Water
Eurofins Sample No.			N24- Oc0070636
Date Sampled			Oct 25, 2024
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Total PAH*	0.001	mg/L	< 0.001
2-Fluorobiphenyl (surr.)	1	%	98
p-Terphenyl-d14 (surr.)	1	%	116
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
TRH >C10-C16	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

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 B4			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Oct 29, 2024	7 Days
BTEX - Method: LTM-ORG-2010 BTEX and Volatile TRH	Sydney	Oct 29, 2024	14 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Oct 29, 2024	7 Days
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Sydney	Oct 29, 2024	7 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Oct 29, 2024	7 Days



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Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

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NZBN: 9429046024954

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Company Name: Qualtest
Address: 2 Murray Dwyer Circuit
Mayfield West
NSW 2304

Order No.:
Report #: 1153637
Phone: 02 4968 4468
Fax: 02 4960 9775

Received: Oct 28, 2024 11:30 AM
Due: Oct 30, 2024
Priority: 1 Day
Contact Name: Emma Coleman

Project Name: UPDATED DSI - OURIMBAH
Project ID: NEW23P-0208

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - WA guidelines	HOLD*	HOLD*	pH (1:5 Aqueous extract at 25 °C as rec.)	Metals M8	Suite B13: OCP/PCB	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	Eurofins Suite B4
Melbourne Laboratory - NATA # 1261 Site # 1254													X		
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X	X	X	X	X	X	X
Mayfield West Laboratory - NATA # 1261 Site # 25079								X							
External Laboratory															
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID										
1	TP101 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070595	X			X	X		X	X		
2	TP101 0.2-0.3	Oct 25, 2024		Soil	N24-Oc0070596		X								
3	TP102 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070597	X						X		X	
4	TP102 0.2-0.3	Oct 25, 2024		Soil	N24-Oc0070598		X								
5	TP103 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070599	X						X		X	
6	TP103 0.3-0.4	Oct 25, 2024		Soil	N24-Oc0070600		X								
7	TP104 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070601							X			X
8	TP104 0.3-0.4	Oct 25, 2024		Soil	N24-Oc0070602		X								
9	TP105 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070603	X						X		X	
10	TP105 0.4-0.5	Oct 25, 2024		Soil	N24-Oc0070604		X								
11	TP106 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070605	X					X	X		X	
12	TP106 0.4-0.5	Oct 25, 2024		Soil	N24-Oc0070606		X								



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Company Name: Qualtest
Address: 2 Murray Dwyer Circuit
Mayfield West
NSW 2304

Project Name: UPDATED DSI - OURIMBAH
Project ID: NEW23P-0208

Order No.:
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Phone: 02 4968 4468
Fax: 02 4960 9775

Received: Oct 28, 2024 11:30 AM
Due: Oct 30, 2024
Priority: 1 Day
Contact Name: Emma Coleman

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - WA guidelines	HOLD*	HOLD*	pH (1:5 Aqueous extract at 25 °C as rec.)	Metals M8	Suite B13: OCP/PCB	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	Eurofins Suite B4
Melbourne Laboratory - NATA # 1261 Site # 1254													X		
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X	X	X	X	X	X	X
Mayfield West Laboratory - NATA # 1261 Site # 25079								X							
13	TP106 0.6-0.7	Oct 25, 2024		Soil	N24-Oc0070607		X								
14	TP107 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070608	X						X		X	
15	TP107 0.4-0.5	Oct 25, 2024		Soil	N24-Oc0070609							X		X	
16	TP107 0.8-0.9	Oct 25, 2024		Soil	N24-Oc0070610							X		X	
17	TP108 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070611	X				X	X	X		X	
18	TP108 0.2-0.3	Oct 25, 2024		Soil	N24-Oc0070612		X								
19	TP109 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070613	X						X		X	
20	TP109 0.4-0.5	Oct 25, 2024		Soil	N24-Oc0070614							X		X	
21	TP109 0.8-0.9	Oct 25, 2024		Soil	N24-Oc0070615		X								
22	TP110 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070616	X						X		X	
23	TP110 0.2-0.3	Oct 25, 2024		Soil	N24-Oc0070617		X								
24	TP111 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070618	X				X	X			X	
25	TP111 0.4-0.5	Oct 25, 2024		Soil	N24-Oc0070619							X		X	
26	TP111 0.8-0.9	Oct 25, 2024		Soil	N24-Oc0070620		X								
27	TP112 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070621	X						X		X	



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Company Name: Qualtest
Address: 2 Murray Dwyer Circuit
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Phone: 02 4968 4468
Fax: 02 4960 9775

Received: Oct 28, 2024 11:30 AM
Due: Oct 30, 2024
Priority: 1 Day
Contact Name: Emma Coleman

Project Name: UPDATED DSI - OURIMBAH
Project ID: NEW23P-0208

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - WA guidelines	HOLD*	HOLD*	pH (1:5 Aqueous extract at 25 °C as rec.)	Metals M8	Suite B13: OCP/PCB	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	Eurofins Suite B4
Melbourne Laboratory - NATA # 1261 Site # 1254													X		
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X	X	X	X	X	X	X
Mayfield West Laboratory - NATA # 1261 Site # 25079								X							
28	TP112 0.4-0.5	Oct 25, 2024		Soil	N24-Oc0070622		X								
29	TP113 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070623	X					X	X		X	
30	TP113 0.2-0.3	Oct 25, 2024		Soil	N24-Oc0070624		X								
31	TP114 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070625	X						X		X	
32	TP114 0.4-0.5	Oct 25, 2024		Soil	N24-Oc0070626		X								
33	TP115 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070627	X						X		X	
34	TP115 0.2-0.3	Oct 25, 2024		Soil	N24-Oc0070628		X								
35	TP116 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070629	X						X		X	
36	TP116 0.2-0.3	Oct 25, 2024		Soil	N24-Oc0070630		X								
37	SS117	Oct 25, 2024		Soil	N24-Oc0070631							X		X	
38	D.25.10.24	Oct 25, 2024		Soil	N24-Oc0070632							X		X	
39	T.25.10.24	Oct 25, 2024		Soil	N24-Oc0070633		X								
40	D2.25.10.24	Oct 25, 2024		Soil	N24-Oc0070634							X		X	
41	T2.25.10.24	Oct 25, 2024		Soil	N24-Oc0070635		X								
42	TB.25.10.24	Oct 25, 2024		Water	N24-Oc0070636										X



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Company Name: Qualtest

Address: 2 Murray Dwyer Circuit
Mayfield West
NSW 2304

Project Name: UPDATED DSI - OURIMBAH

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Order No.:

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Phone: 02 4968 4468

Fax: 02 4960 9775

Received: Oct 28, 2024 11:30 AM

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Priority: 1 Day

Contact Name: Emma Coleman

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - WA guidelines	HOLD*	HOLD*	pH (1:5 Aqueous extract at 25 °C as rec.)	Metals M8	Suite B13: OCP/PCB	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	Eurofins Suite B4
Melbourne Laboratory - NATA # 1261 Site # 1254													X		
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X	X	X	X	X	X	X
Mayfield West Laboratory - NATA # 1261 Site # 25079								X							
43	ASB TP01	Oct 25, 2024		Building Materials	N24-Oc0070637			X							
Test Counts						15	19	19	1	1	4	23	1	21	2

Internal Quality Control Review and Glossary

General

1. 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.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. 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

1. 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.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. 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.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total*	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.01			0.01	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
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							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
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	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	88			70-130	Pass	
TRH C10-C14	%	80			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	108			70-130	Pass	
Toluene	%	96			70-130	Pass	
Ethylbenzene	%	90			70-130	Pass	
m&p-Xylenes	%	96			70-130	Pass	
o-Xylene	%	92			70-130	Pass	

Test		Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Xylenes - Total*		%	95			70-130	Pass	
LCS - % Recovery								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions								
Naphthalene		%	74			70-130	Pass	
TRH C6-C10		%	78			70-130	Pass	
LCS - % Recovery								
Polycyclic Aromatic Hydrocarbons								
Acenaphthene		%	83			70-130	Pass	
Acenaphthylene		%	87			70-130	Pass	
Anthracene		%	98			70-130	Pass	
Benz(a)anthracene		%	77			70-130	Pass	
Benzo(a)pyrene		%	78			70-130	Pass	
Benzo(b&j)fluoranthene		%	83			70-130	Pass	
Benzo(g,h,i)perylene		%	73			70-130	Pass	
Benzo(k)fluoranthene		%	81			70-130	Pass	
Chrysene		%	86			70-130	Pass	
Dibenz(a,h)anthracene		%	80			70-130	Pass	
Fluoranthene		%	98			70-130	Pass	
Fluorene		%	88			70-130	Pass	
Indeno(1,2,3-cd)pyrene		%	77			70-130	Pass	
Naphthalene		%	90			70-130	Pass	
Phenanthrene		%	91			70-130	Pass	
Pyrene		%	100			70-130	Pass	
LCS - % Recovery								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions								
TRH >C10-C16		%	80			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1				
TRH C6-C9	S24-Oc0069687	NCP	%	108		70-130	Pass	
Spike - % Recovery								
BTEX				Result 1				
Benzene	S24-Oc0069687	NCP	%	101		70-130	Pass	
Toluene	S24-Oc0069687	NCP	%	120		70-130	Pass	
Ethylbenzene	S24-Oc0069687	NCP	%	111		70-130	Pass	
m&p-Xylenes	S24-Oc0069687	NCP	%	122		70-130	Pass	
o-Xylene	S24-Oc0069687	NCP	%	108		70-130	Pass	
Xylenes - Total*	S24-Oc0069687	NCP	%	117		70-130	Pass	
Spike - % Recovery								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1				
Naphthalene	S24-Oc0069687	NCP	%	83		70-130	Pass	
TRH C6-C10	S24-Oc0069687	NCP	%	97		70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Duplicate								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD		
TRH C6-C9	S24-Oc0072404	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass
TRH C10-C14	N24-Oc0070636	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass
TRH C15-C28	N24-Oc0070636	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass
TRH C29-C36	N24-Oc0070636	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass

Duplicate								
BTX				Result 1	Result 2	RPD		
Benzene	S24-Oc0072404	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Toluene	S24-Oc0072404	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Ethylbenzene	S24-Oc0072404	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
m&p-Xylenes	S24-Oc0072404	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
o-Xylene	S24-Oc0072404	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Xylenes - Total*	S24-Oc0072404	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	S24-Oc0072404	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass
TRH C6-C10	S24-Oc0072404	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	N24-Oc0070636	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Acenaphthylene	N24-Oc0070636	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Anthracene	N24-Oc0070636	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benz(a)anthracene	N24-Oc0070636	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(a)pyrene	N24-Oc0070636	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(b&j)fluoranthene	N24-Oc0070636	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(g,h,i)perylene	N24-Oc0070636	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(k)fluoranthene	N24-Oc0070636	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Chrysene	N24-Oc0070636	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Dibenz(a,h)anthracene	N24-Oc0070636	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluoranthene	N24-Oc0070636	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluorene	N24-Oc0070636	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	N24-Oc0070636	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Naphthalene	N24-Oc0070636	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Phenanthrene	N24-Oc0070636	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Pyrene	N24-Oc0070636	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
TRH >C10-C16	N24-Oc0070636	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass
TRH >C16-C34	N24-Oc0070636	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass
TRH >C34-C40	N24-Oc0070636	CP	mg/L	< 0.1	< 0.1	<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

Authorised by:

Nileshni Goundar	Analytical Services Manager
Roopesh Rangarajan	Senior Analyst-Organic
Roopesh Rangarajan	Senior Analyst-Volatile



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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Qualtest
2 Murray Dwyer Circuit
Mayfield West
NSW 2304



NATA Accredited
Accreditation Number 1261
Site Number 18217

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: Emma Coleman
Report 1153637-AID
Project Name UPDATED DSI - OURIMBAH
Project ID NEW23P-0208
Received Date Oct 28, 2024
Date Reported Oct 30, 2024

Methodology:

Asbestos Fibre
 Identification

Conducted in accordance with the Australian Standard AS 5370:2024* Sampling and qualitative identification of asbestos in bulk materials (ISO 22262-1:2012, MOD), formerly AS 4964-2004 and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques.

NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.

Man-made vitreous
 fibre (MMVF)

Fibres exhibiting isotropic characteristics, including glass fibres, glass wool, rock wool, slag wool, ceramic fibres and bio-soluble fibres. NOTE: previously known as "synthetic mineral fibre" (SMF). Simple analytical procedures such as polarised light microscopy cannot detect or reliably identify asbestos in some types of commercial products containing asbestos, either because the fibres are below the resolution of optical microscopy or because the matrix material adheres too strongly to the fibres. For these types of products, electron microscopy may be necessary.

Subsampling Soil
 Samples

The sample submitted is dried and passed through a 10 mm sieve followed by a 2 mm sieve. All fibrous matter greater than 10 mm and greater than 2 mm and the material passing through the 2 mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 g to 60 g, then a subsampling routine based on ISO 3082:2017(E) is employed.

NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be subsampled for trace analysis, in accordance with AS 5370:2024.*

Bonded asbestos-
 containing material
 (ACM)

The material is first examined, and any fibres are isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination. The resultant material is then further examined in accordance with AS 5370:2024*.

NOTE: Even after disintegration, it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.

Limit of Reporting
 (LOR)

The performance limitation of the AS 5370:2024* method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w). The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory limit of reporting, per se. Examination of large sample size (e.g., 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 5370:2024*, and hence, NATA Accreditation does not cover the performance of this service (non-NATA results are shown with an asterisk).

NOTE: NATA News March 2014, p.7, states in relation to AS 4964-2004: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos". This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.

Project Name UPDATED DSI - OURIMBAH
Project ID NEW23P-0208
Date Sampled Oct 25, 2024
Report 1153637-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
TP101 0.0-0.1	24-Oc0070595	Oct 25, 2024	Approximate Sample 649g Sample consisted of: Dark Grey fine-grained clayey sandy soil, organic debris and rocks	ACM: Chrysotile asbestos detected in fibre cement material. Approximate raw weight of ACM = 15g Total estimated asbestos content in ACM = 1.5g* Total estimated asbestos concentration in ACM = 0.23% w/w* Organic fibre detected. No trace asbestos detected.
TP102 0.0-0.1	24-Oc0070597	Oct 25, 2024	Approximate Sample 730g Sample consisted of: Brown fine-grained clayey sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP103 0.0-0.1	24-Oc0070599	Oct 25, 2024	Approximate Sample 541g Sample consisted of: Dark Grey fine-grained clayey sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP105 0.0-0.1	24-Oc0070603	Oct 25, 2024	Approximate Sample 816g Sample consisted of: Brown fine-grained clayey sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP106 0.0-0.1	24-Oc0070605	Oct 25, 2024	Approximate Sample 692g Sample consisted of: Dark Grey fine-grained clayey sandy soil, organic debris and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP107 0.0-0.1	24-Oc0070608	Oct 25, 2024	Approximate Sample 444g Sample consisted of: Dark Grey fine-grained clayey sandy soil, organic debris and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP108 0.0-0.1	24-Oc0070611	Oct 25, 2024	Approximate Sample 449g Sample consisted of: Dark Grey fine-grained clayey sandy soil, organic debris and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
TP109 0.0-0.1	24-Oc0070613	Oct 25, 2024	Approximate Sample 667g Sample consisted of: Dark Grey fine-grained clayey sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP110 0.0-0.1	24-Oc0070616	Oct 25, 2024	Approximate Sample 485g Sample consisted of: Dark Grey fine-grained clayey sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP111 0.0-0.1	24-Oc0070618	Oct 25, 2024	Approximate Sample 519g Sample consisted of: Black fine-grained clayey sandy soil, charcoal, bitumen like material and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP112 0.0-0.1	24-Oc0070621	Oct 25, 2024	Approximate Sample 641g Sample consisted of: Dark Grey fine-grained clayey sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP113 0.0-0.1	24-Oc0070623	Oct 25, 2024	Approximate Sample 570g Sample consisted of: Dark Grey fine-grained clayey sandy soil, organic debris and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP114 0.0-0.1	24-Oc0070625	Oct 25, 2024	Approximate Sample 586g Sample consisted of: Dark Grey fine-grained clayey sandy soil, organic debris and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP115 0.0-0.1	24-Oc0070627	Oct 25, 2024	Approximate Sample 674g Sample consisted of: Brown fine-grained clayey sandy soil, organic debris and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP116 0.0-0.1	24-Oc0070629	Oct 25, 2024	Approximate Sample 775g Sample consisted of: Brown fine-grained clayey sandy soil, organic debris and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.

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
Asbestos - LTM-ASB-8020	Sydney	Oct 28, 2024	Indefinite



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Eurofins Environment Testing Australia Pty Ltd

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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 T: +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
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Company Name: Qualtest
Address: 2 Murray Dwyer Circuit
Mayfield West
NSW 2304

Project Name: UPDATED DSI - OURIMBAH
Project ID: NEW23P-0208

Order No.:
Report #: 1153637
Phone: 02 4968 4468
Fax: 02 4960 9775

Received: Oct 28, 2024 11:30 AM
Due: Oct 30, 2024
Priority: 1 Day
Contact Name: Emma Coleman

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - WA guidelines	HOLD*	HOLD*	pH (1:5 Aqueous extract at 25 °C as rec.)	Metals M8	Suite B13: OCP/PCB	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	Eurofins Suite B4
Melbourne Laboratory - NATA # 1261 Site # 1254													X		
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X	X	X	X	X	X	X
Mayfield West Laboratory - NATA # 1261 Site # 25079								X							
External Laboratory															
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID										
1	TP101 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070595	X			X	X		X	X		
2	TP101 0.2-0.3	Oct 25, 2024		Soil	N24-Oc0070596		X								
3	TP102 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070597	X						X		X	
4	TP102 0.2-0.3	Oct 25, 2024		Soil	N24-Oc0070598		X								
5	TP103 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070599	X						X		X	
6	TP103 0.3-0.4	Oct 25, 2024		Soil	N24-Oc0070600		X								
7	TP104 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070601							X			X
8	TP104 0.3-0.4	Oct 25, 2024		Soil	N24-Oc0070602		X								
9	TP105 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070603	X						X		X	
10	TP105 0.4-0.5	Oct 25, 2024		Soil	N24-Oc0070604		X								
11	TP106 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070605	X					X	X		X	
12	TP106 0.4-0.5	Oct 25, 2024		Soil	N24-Oc0070606		X								



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Eurofins Environment Testing Australia Pty Ltd

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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 T: +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
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Eurofins ARL Pty Ltd

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Perth 46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2377 Site# 2370 & 2554
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Company Name: Qualtest
Address: 2 Murray Dwyer Circuit
Mayfield West
NSW 2304

Project Name: UPDATED DSI - OURIMBAH
Project ID: NEW23P-0208

Order No.:
Report #: 1153637
Phone: 02 4968 4468
Fax: 02 4960 9775

Received: Oct 28, 2024 11:30 AM
Due: Oct 30, 2024
Priority: 1 Day
Contact Name: Emma Coleman

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - WA guidelines	HOLD*	HOLD*	pH (1:5 Aqueous extract at 25 °C as rec.)	Metals M8	Suite B13: OCP/PCB	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	Eurofins Suite B4
Melbourne Laboratory - NATA # 1261 Site # 1254													X		
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X	X	X	X	X	X	X
Mayfield West Laboratory - NATA # 1261 Site # 25079								X							
13	TP106 0.6-0.7	Oct 25, 2024		Soil	N24-Oc0070607		X								
14	TP107 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070608	X						X		X	
15	TP107 0.4-0.5	Oct 25, 2024		Soil	N24-Oc0070609							X		X	
16	TP107 0.8-0.9	Oct 25, 2024		Soil	N24-Oc0070610							X		X	
17	TP108 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070611	X				X	X			X	
18	TP108 0.2-0.3	Oct 25, 2024		Soil	N24-Oc0070612		X								
19	TP109 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070613	X						X		X	
20	TP109 0.4-0.5	Oct 25, 2024		Soil	N24-Oc0070614							X		X	
21	TP109 0.8-0.9	Oct 25, 2024		Soil	N24-Oc0070615		X								
22	TP110 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070616	X						X		X	
23	TP110 0.2-0.3	Oct 25, 2024		Soil	N24-Oc0070617		X								
24	TP111 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070618	X				X	X			X	
25	TP111 0.4-0.5	Oct 25, 2024		Soil	N24-Oc0070619							X		X	
26	TP111 0.8-0.9	Oct 25, 2024		Soil	N24-Oc0070620		X								
27	TP112 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070621	X						X		X	



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Mayfield West
NSW 2304

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Fax: 02 4960 9775

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Melbourne Laboratory - NATA # 1261 Site # 1254													X		
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X	X	X	X	X	X	X
Mayfield West Laboratory - NATA # 1261 Site # 25079								X							
28	TP112 0.4-0.5	Oct 25, 2024		Soil	N24-Oc0070622		X								
29	TP113 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070623	X					X	X		X	
30	TP113 0.2-0.3	Oct 25, 2024		Soil	N24-Oc0070624		X								
31	TP114 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070625	X						X		X	
32	TP114 0.4-0.5	Oct 25, 2024		Soil	N24-Oc0070626		X								
33	TP115 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070627	X						X		X	
34	TP115 0.2-0.3	Oct 25, 2024		Soil	N24-Oc0070628		X								
35	TP116 0.0-0.1	Oct 25, 2024		Soil	N24-Oc0070629	X						X		X	
36	TP116 0.2-0.3	Oct 25, 2024		Soil	N24-Oc0070630		X								
37	SS117	Oct 25, 2024		Soil	N24-Oc0070631							X		X	
38	D.25.10.24	Oct 25, 2024		Soil	N24-Oc0070632							X		X	
39	T.25.10.24	Oct 25, 2024		Soil	N24-Oc0070633		X								
40	D2.25.10.24	Oct 25, 2024		Soil	N24-Oc0070634							X		X	
41	T2.25.10.24	Oct 25, 2024		Soil	N24-Oc0070635		X								
42	TB.25.10.24	Oct 25, 2024		Water	N24-Oc0070636										X



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Melbourne Laboratory - NATA # 1261 Site # 1254													X		
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X	X	X	X	X	X	X
Mayfield West Laboratory - NATA # 1261 Site # 25079								X							
43	ASB TP01	Oct 25, 2024		Building Materials	N24-Oc0070637			X							
Test Counts						15	19	19	1	1	4	23	1	21	2

Internal Quality Control Review and Glossary General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. Information identified on this report with the colour **blue** indicates data provided by customer that may have an impact on the results.
5. This report replaces any interim results previously issued.

Holding Times

Please refer to the most recent version of the 'Sample Preservation and Container Guide' for holding times (QS3001).

Units

% w/w:	Percentage weight-for-weight basis, e.g. of asbestos in asbestos-containing finds in soil samples (% w/w)
F/field	Airborne fibre filter loading as Fibres (N) per Fields counted (n)
F/mL	Airborne fibre reported concentration as Fibres per millilitre of air drawn over the sampler membrane (C)
g, kg	Mass, e.g. of whole sample (M) or asbestos-containing find within the sample (m)
g/kg	Concentration in grams per kilogram
L, mL	Volume, e.g. of air as measured in AFM (V = r x t)
L/min	Airborne fibre sampling Flowrate as litres per minute of air drawn over the sampler membrane (r)
min	Time (t), e.g. of air sample collection period

Calculations

Airborne Fibre Concentration: $C = \left(\frac{A}{a}\right) \times \left(\frac{N}{n}\right) \times \left(\frac{1}{r}\right) \times \left(\frac{1}{t}\right) = K \times \left(\frac{N}{n}\right) \times \left(\frac{1}{V}\right)$

Asbestos Content (as asbestos): $\% w/w = \frac{(m \times P_A)}{M}$

Weighted Average (of asbestos): $\%_{WA} = \sum \frac{(m \times P_A) \times x}{x}$

Terms

%asbestos	Estimated percentage of asbestos in a given matrix may be derived from knowledge or experience of the material, informed by HSG264 <i>Appendix 2</i> , else assumed to be 15% in accordance with WA DOH <i>Appendix 2</i> (PA). This estimate is not NATA-accredited.
ACM	Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded (non-friable) condition. For the purposes of the NEPM and WA DOH, ACM corresponds to material larger than 7 mm x 7 mm.
AF	Asbestos Fines. Asbestos contamination within a soil sample, as defined by WA DOH. Includes loose fibre bundles and small pieces of friable and non-friable material such as asbestos cement fragments mixed with soil. Considered under the NEPM as equivalent to "non-bonded / friable".
AFM	Airborne Fibre Monitoring, e.g., by the MFM.
Amosite	Amosite Asbestos Detected. Amosite may also refer to Fibrous Grunerite or Brown Asbestos. Identified in accordance with AS 5370:2024* Sampling and qualitative identification of asbestos in bulk materials (ISO 22262-1:2012, MOD), formerly AS 4964-2004.
AS	Australian Standard.
Asbestos Content (as asbestos)	Total %w/w asbestos content in asbestos-containing finds in a soil sample (% w/w).
Chrysotile	Chrysotile Asbestos Detected. Chrysotile may also refer to Fibrous Serpentine or White Asbestos. Identified in accordance with AS 5370:2024* Sampling and qualitative identification of asbestos in bulk materials (ISO 22262-1:2012, MOD), formerly AS 4964-2004..
COC	Chain of Custody.
Crocidolite	Crocidolite Asbestos Detected. Crocidolite may also refer to Fibrous Riebeckite or Blue Asbestos. Identified in accordance with AS 5370:2024* Sampling and qualitative identification of asbestos in bulk materials (ISO 22262-1:2012, MOD), formerly AS 4964-2004..
Dry	Sample is dried by heating prior to analysis.
DS	Dispersion Staining. Technique required for unequivocal Identification of asbestos fibres by PLM.
FA	Fibrous Asbestos. Asbestos-containing material that is wholly or in part friable, including materials with higher asbestos content with a propensity to become friable with handling, and any material that was previously non-friable and in a severely degraded condition. For the purposes of the NEPM and WA DOH, FA generally corresponds to material larger than 7 mm x 7 mm, although FA may be more difficult to distinguish visibly and may be assessed as AF.
Fibre Count	Total of all fibres (whether asbestos or not) meeting the counting criteria set out in the NOHSC:3003
Fibre ID	Fibre Identification. Unequivocal identification of asbestos fibres according to AS 5370:2024* Sampling and qualitative identification of asbestos in bulk materials (ISO 22262-1:2012, MOD), formerly AS 4964-2004.. Includes Chrysotile, Amosite (Grunerite) or Crocidolite asbestos.
Friable	Asbestos-containing materials of any size that may be broken or crumbled by hand pressure. For the purposes of the NEPM, this includes both AF and FA. It is outside of the laboratory's remit to assess the degree of friability.
HSG248	UK HSE HSG248, <i>Asbestos: The Analysts Guide</i> , 2 nd Edition (2021), ISBN: 9780616667079.
HSG264	UK HSE HSG264, <i>Asbestos: The Survey Guide</i> (2012), ISBN: 9780717665020
ISO (also ISO/IEC)	International Organization for Standardization / International Electrotechnical Commission.
K Factor	Microscope constant (K) as derived from the effective filter area of the given AFM membrane used for collecting the sample (A) and the projected eyepiece graticule area of the specific microscope used for the analysis (a).
LOR	Limit of Reporting.
MFM (also NOHSC:3003)	Membrane Filter Method. As described by the Australian Government National Occupational Health and Safety Commission, <i>Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres</i> , 2nd Edition [NOHSC:3003(2005)].
MMVF	Man-Made Vitreous Fibre - exhibiting isotropic characteristics, including glass fibres, glass wool, rock wool, slag wool, ceramic fibres and "bio-soluble fibres". NOTE: previously known as "synthetic mineral fibre" (SMF).
NEPM (also ASC NEPM)	National Environment Protection (Assessment of Site Contamination) Measure, (2013, as amended).
Organic	Organic Fibres Detected. Organic may refer to Natural or Man-Made Polymeric Fibres. Identified in accordance with AS 5370:2024* Sampling and qualitative identification of asbestos in bulk materials (ISO 22262-1:2012, MOD), formerly AS 4964-2004..
PCM	Phase Contrast Microscopy. This is used for fibre counting according to the MFM.
PLM	Polarised Light Microscopy. As used for Fibre Identification and Trace Analysis according to AS 5370:2024* Sampling and qualitative identification of asbestos in bulk materials (ISO 22262-1:2012, MOD), formerly AS 4964-2004..
Sampling	Unless otherwise stated, Eurofins are not responsible for sampling equipment or the sampling process.
SRA	Sample Receipt Advice.
Trace Analysis	An analytical procedure is used to detect the presence of respirable fibres (particularly asbestos) in a given sample matrix.
UK HSE HSG	United Kingdom, Health and Safety Executive, Health and Safety Guidance, publication.
UMF	Unidentified Mineral Fibre Detected. Fibrous minerals that are detected but have not been unequivocally identified by PLM with DS according to AS 5370:2024* Sampling and qualitative identification of asbestos in bulk materials (ISO 22262-1:2012, MOD), formerly AS 4964-2004.. It may include (but is not limited to) actinolite, anthophyllite, or tremolite asbestos.
WA DOH	Reference document for the NEPM. Government of Western Australia, <i>Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia</i> (updated 2021), including Appendix Four: <i>Laboratory analysis</i>
Weighted Average	Combined average %w/w asbestos content of all asbestos-containing finds in the given aliquot or total soil sample (%_{WA}).

Comments

24-Oc0070608, 24-Oc0070611, 24-Oc0070616 samples received were less than the nominal 500mL as recommended in Section 4.10 of the NEPM Schedule B1 - Guideline on Investigation Levels for Soil and Groundwater.

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

Asbestos Counter/Identifier:

Sayeed Abu Senior Analyst-Asbestos

Authorised by:

Chamath JHM Annakkage Senior Analyst-Asbestos



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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