Detailed Site Investigation

1-5 Station Lane, Lochinvar NSW

NEW24P-0254AB 19 December 2024



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Executive Summary

Qualtest Laboratory NSW Pty Ltd (Qualtest) has carried out a Detailed Site Investigation (DSI) on behalf of Boar Island Unit Trust, for the site located at 1 to 5 Station Lane, Lochinvar NSW (the Site).

The site covers an area of approximately 4,500m² and comprises Lot 1 to 3 DP516963. The site is currently zoned R1 General Residential and is proposed to be developed into a childcare centre.

Qualtest has carried out a Preliminary Site Investigation (PSI) for the site, ref: NEW24P-0254-AA dated 12 November 2024 (Qualtest, 2024). The PSI identified four AECs for the site, relating to: Current and former buildings on the site; Storage of vehicles, equipment, and waste materials; Imported Fill - Potential use of contaminated imported fill; and, Former agricultural use (grazing). Based on the above, it was recommended that a Detailed Site Investigation be carried out on the site.

The objectives of the DSI were to:

- Assess whether soil contamination is present; and,
- Provide recommendations on the need for further assessment, and remediation or management (if required).

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

- Collection of soil samples from seven test pit locations from across the site and collection of twenty-seven surface soil samples;
- Laboratory analysis of soil samples from a suite of common contaminants; and,
- Data assessment and preparation of a Detailed Site Investigation Report.

The site history review showed that the site has been used for residential purposes from at least 1976 to the present day, and was likely vacant farming (grazing) land prior to 1976. Dwellings were constructed on Lots 1 and 2 between 1961 and 1976, and on Lot 3 between 1984 and 1991.

Four AEC's were identified for the site:

- 1. Current and former buildings on the site;
- 2. Storage of vehicles, equipment, and waste materials;
- 3. Imported Fill Potential use of contaminated imported fill; and,
- 4. Former agricultural use (grazing).

To assess whether contamination was present, seven borehole locations and twenty-seven surface locations were sampled, targeting the identified AEC and providing a spread across the site.

The laboratory results showed concentrations of contaminants below the adopted criteria, with the exception of bonded ACM exceeding human health criteria in a surface sample, located on the north-western boundary of the site. The ACM was located on the site surface in an area where materials containing asbestos may have been stored historically, and where fill material is inferred to present, particularly in the location of underground services. Excavation in this area was not possible due to the presence of underground services.

The Conceptual Site Model (CSM) indicated that exposure pathways were complete for current and future site users, and construction/maintenance workers due to bonded ACM exceeding human health criteria in a surface sample on the north-western boundary of the site.

Based on the results of the Detailed Site Investigation it is considered the site can be made suitable for the proposed childcare centre, with the following recommendations:

- Preparation of a Remediation Action Plan (RAP) for the remediation of the ACM, and validation of the surrounding site surface and soils;
- Clearances are undertaken of the soils in the footprints of the site buildings post-demolition to check for ACM; and
- Preparation of an Unexpected Finds Procedure to manage potential unexpected finds of contamination during earthworks and construction for the proposed development.

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 childcare centre.

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.

Table of Contents:

1.0		Introduction	3
	1.1	Objectives	3
	1.2	Scope of Works	3
2.0		Site Description	3
	2.1	Site Identification	3
	2.2	Topography and Drainage	4
	2.3	Regional Geology	4
	2.4	Hydrogeology	5
	2.5	Acid Sulfate Soils	5
3.0		Summary of Previous Assessments	5
4.0		Preliminary Conceptual Site Model	6
5.0		Data Quality Objectives	9
	5.1	Step 1 – State the Problem	9
	5.2	Step 2 – Identify the Decision/Goal of the Study	9
	5.3	Step 3 – Identify Information Inputs	9
	5.4	Step 4 – Define the Boundaries of the Study	10
	5.5	Step 5 – Develop an Analytical (Statistical) Approach	10
	5.6	Step 6 – Specify Performance or Acceptance Criteria	10
	5.7	Step 7 – Develop the Plan for Obtaining Data	11
6.0		Field and Laboratory Investigations	11
	6.1	Sampling Plan	11
	6.2	Soil Sampling	12
	6.3	Laboratory Analysis	12
7.0		Investigation Criteria	13
	7.1	Health and Ecological Investigation and Screening Levels	13
	7.2	Asbestos Materials in Soil	14
	7.3	Adopted Soil Investigation Criteria	14
8.0		Quality Assurance/Quality Control	16
9.0		Results	17
	9.1	Subsurface Conditions	17
	9.2	Laboratory Results	19
	95% U	oper Confidence Limit Calculations	19
10.0		Conceptual Site Model	20
11.0		Conclusions and Recommendations	23
12.0		Limitations	23
13.0		References	24

Attachments:

Appendix A - Figures:

Figure 1 - Site Location Plan

Figure 2 – Lot Location Plan

Figure 3 – Site Features Plan

Figure 4 – Sample Location Plan

Appendix B: Tables:

Table 1 – Soil Analytical Results – OCPs/Metals/pH & CEC

Table 2 - Soil Analytical Results - PAHs/BTEX/TRH

Table 3 – Soil Analytical Results – Asbestos

Table 4 – Soil Analytical Results – Quality Control

95% UCL Calculations

Appendix C: Groundwater Bore Search

Appendix D: Borehole Logs

Appendix E: Data Validation

Appendix F: Laboratory Reports

1.0 Introduction

Qualtest Laboratory NSW Pty Ltd (Qualtest) has carried out a Detailed Site Investigation (DSI) on behalf of Boar Island Unit Trust, for the site located at 1 to 5 Station Lane, Lochinvar NSW (the Site). The site location is shown on Figure 1, Appendix A.

The site covers an area of approximately 4,500m² and comprises Lot 1 to 3 DP516963. The site is currently zoned R1 General Residential and is proposed to be developed into a childcare centre.

Qualtest has carried out a Preliminary Site Investigation (PSI) for the site, ref: NEW24P-0254-AA dated 12 November 2024 (Qualtest, 2024). The PSI identified four AECs for the site, relating to: Current and former buildings on the site; Storage of vehicles, equipment, and waste materials; Imported Fill - Potential use of contaminated imported fill; and, Former agricultural use (grazing). Based on the above, it was recommended that a Detailed Site Investigation be carried out on the site.

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.

1.1 Objectives

The objectives of the DSI were to:

- Assess whether soil contamination is present; and,
- Provide recommendations on the need for further assessment, and remediation or management (if required).

1.2 Scope of Works

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

- Collection of soil samples from seven test pit locations from across the site and collection of twenty-seven surface soil samples;
- Laboratory analysis of soil samples from a suite of common contaminants; and,
- Data assessment and preparation of a Detailed Site Investigation 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.

Site Address:	1-5 Station Lane, Lochinvar NSW			
Approximate site area and dimensions:	Approx. 4,500m ² Approx. 55m long north to south by 95m wide east to west at its longest and widest points			
Title Identification Details:	Lot 1 to 3 DP516963, within the Maitland local government area			
Current Zoning	R1 General Residential			
Current Ownership:	Lot 2 - Ricky James Meyn and Leza Mary McNab Lots 1 and 3 not known.			
Previous and Current Landuse:	Rural Residential			
Proposed Landuse:	Childcare Centre			
Adjoining Site Uses:	North – Low density residential South – Low Density Residential East – Station Lane, low density residential West – Lochinvar Creek, rural residential			
Site Coordinates for approximately middle of site:	32°41'57.69 S 151°27'15.03 E			

Table 2.1: Summary of Site Details

2.2 Topography and Drainage

Reference to the NSW Land and Property Information Spatial Information Exchange website (<u>https://six.nsw.gov.au/wps/portal/</u>) indicated the elevation of the site was about 30m AHD.

During the site investigation the site was observed to slope down to the west into Lochinvar Creek located on the western boundary of the site.

The ground surface, excluding building areas, consisted of grass. Rain falling on the site would be expected to infiltrate into the site surface. Excess surface water was expected to follow the site topography, and flow into Lochinvar Creek, located on the western boundary of the site. Lochinvar Creek is anticipated to flow to the north of the site and discharge into the Hunter River located approximately 3km north of the site.

2.3 Regional Geology

Reference to the New South Wales surface geology map published on MinView (<u>https://minview.geoscience.nsw.gov.au/</u>) indicates the site to be generally underlain by Permian aged Lochinvar Formation, belonging to the Dalwood Group, comprising basalt, siltstone, sandstone.

2.4 Hydrogeology

Groundwater beneath the site is anticipated to be present in a semi-confined aquifer within residual soils and/or weathered rock. Groundwater is expected to be greater than 3m below ground surface (bgs). Groundwater flow direction is anticipated to flow north, eventually discharging into the Hunter River located approximately 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 was one bore located within this radius. A copy of the search was provided in the PSI (Qualtest, 2024), and is summarised below in Table 2.4.

Bore ID	Installation Date	Purpose	Approx. Distance and Gradient from Site	Final Depth (m)	Water Bearing Zones (m)
GW060900	01/03/1985	Domestic Stock, Monitoring Bore	400m to the north-east, cross gradient	18.30	-

Table 2.4 – Groundwater Bore Search

2.5 Acid Sulfate Soils

Reference to the Acid Sulfate Soil online database from State of NSW and Department of Planning, Industry and Environment, 2021 (<u>https://espade.environment.nsw.gov.au</u>) the site is located within an area of "no known occurrence" of acid sulfate soils (ASS).

3.0 Summary of Previous Assessments

Qualtest carried out a Preliminary Site Investigation for the site in November 2024 A summary of the report is presented below.

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;
- Identify Areas of Environmental Concern (AECs) and associated Contaminants of Potential Concern (COPC), if any; and,
- Provide recommendations on the need for further assessment, and remediation or management (if required).

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

- Desktop study and site history review;
- Site walkover; and,
- Preparation of a Preliminary Site Investigation Report.

The site history review showed that the site has been used for residential purposes from at least 1976 to the present day, and was likely vacant farming (grazing) land prior to 1976. Dwellings were constructed on Lots 1 and 2 between 1961 and 1976, and on Lot 3 between 1984 and 1991.

Four AEC's were identified for the site:

- 5. Current and former buildings on the site;
- 6. Storage of vehicles, equipment, and waste materials;
- 7. Imported Fill Potential use of contaminated imported fill; and,
- 8. Former agricultural use (grazing).

The Preliminary Conceptual Site Model (CSM) indicated that exposure pathways were potentially complete for current and future site users, construction/maintenance workers and/or ecological receptors.

Based on the above, it is recommended that a Detailed Site Investigation, comprising intrusive investigations, be carried out on the site.

4.0 Preliminary Conceptual Site Model

Based on the results of the preliminary site investigation carried out on the site (Qualtest, 2024), a preliminary Conceptual Site Model (CSM) has been developed.

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	Comments
 Current and former buildings on the site: Weathering of potentially hazardous materials (asbestos, lead paint, galvanised metals). Use of pesticides around building. Demolition of structures over time. 	Metals, Asbestos, OCPs	Low to medium	Top-down leaks/spills, flakes/fibres to soil. Leaching of soil contaminants to surface water and groundwater	 Surface soils Surface water Groundwater Aesthetics 	 Current site visitors Future construction workers & site users Soil biota/plants and transitory wildlife Offsite surface water – Lochinvar Creek (located adjacent to the western boundary of the site) flowing offsite to the north Offsite groundwater discharge point – Hunter River located approximately 3.5km north of the site 	 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 discharge to Lochinvar Creek located adjacent to the western boundary of the site Groundwater discharge to Hunter River, located 3km to the north of the site. 	 Potentially complete exposure pathway for current site visitors, future construction workers and site users. Potentially complete exposure pathway for soil biota/plants and transitory wildlife, and surface water. Likely Incomplete exposure pathway to groundwater due to depth of groundwater (>3m), clay subsoils and top-down nature of potential contamination. 	• Exposure pathway would be incomplete if sampling and analysis does not identify contamination.
2. Storage of vehicles, equipment and materials:	TRH, BTEX, PAH, Metals, Asbestos, OCPs (CoPCs dependent on material/waste type)	Low to medium	Top-down leaks/spills, flakes/fibres to soil. Leaching of soil contaminants to surface water and groundwater.	 Surface soils Surface water Groundwater Aesthetics 	 Current site visitors Future construction workers & site users Soil biota/plants and transitory wildlife Offsite surface water – Lochinvar Creek (located adjacent to the western boundary of the site) flowing offsite to the north Offsite groundwater discharge point – Hunter River located approximately 3.5km north of the site 	 Direct dermal contact with contaminated soil Ingestion of contaminated soil Inhalation of asbestos fibres, or contaminated soil (as dust) Inhalation of petroleum hydrocarbon vapours Leaching of soil contaminants to 	 Potentially complete exposure pathway for current site visitors, future construction workers and site users. Potentially complete exposure pathway for soil biota/plants and transitory wildlife, and surface water. Likely Incomplete exposure pathway to groundwater due to depth of groundwater (>3m), clay subsoils and 	• Exposure pathway would be incomplete if sampling and analysis does not identify contamination.

AEC	COPC	Likelihood of Contamination	Mechanism of Contamination	Potentially Affected Media	Human & Ecological Receptors	Potential mechanisms of exposure	Potential & C Exposure Pat
3. Filling on the site	TRH, BTEX, PAH, OCPs, Metals, Asbestos, pH and CEC	Low to medium	Potential use of imported fill of unknown quality and origin.	 Fill Soils Groundwater Surface Soils Surface water Underlying soils 	 Current site visitors Future construction workers & site users Soil biota/plants and transitory wildlife Offsite surface water – Lochinvar Creek (located adjacent to the western boundary of the site) flowing offsite to the north Offsite groundwater discharge point – Hunter River located approximately 3.5km north of the site 	 surface water and/or groundwater Surface water discharge to Lochinvar Creek located adjacent to the western boundary of the site Groundwater discharge to Hunter River, located 3km to the north of the site. 	top-down potential
 4. Former agricultural use (grazing land) Potential use of pesticides. 	OCPs, Metals	Low	Potential application of pesticides on surface soils.	 Surface Soils Groundwater Surface water 	 Current site visitors Future construction workers & site users Soil biota/plants and transitory wildlife Offsite surface water – Lochinvar Creek (located adjacent to the western boundary of the site) flowing offsite to the north. Offsite groundwater discharge point – Hunter River located approximately 3.5km north of the site 	 Direct dermal contact with contaminated soil Ingestion of contaminated soil Leaching of soil contaminants to surface water and/or groundwater Surface water discharge to Lochinvar Creek located adjacent to the western boundary of the site Groundwater discharge to Hunter River, located 3km to the north of the site. 	 Potential exposure current si construct site users. Potential exposure biota/plc wildlife, c water. Likely Inc exposure groundw depth of (>3m), cli top-down potential

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ly complete e pathway for ite visitors, future tion workers and ly complete e pathway for soil ants and transitory and surface omplete e pathway to rater due to groundwater ay subsoils and n nature of I contamination.	• Exposure pathway would be incomplete if sampling and analysis does not identify contamination.

5.0 Data Quality Objectives

5.1 Step 1 – State the Problem

The site has historically been used for residential and potentially farming purposes, and there is a potential for contamination of soil to exist from past site uses. Four AECs were identified for the site, as described in Table 4.1, above. If contamination exists, the site may not be suitable for the proposed use without remediation.

5.2 Step 2 – Identify the Decision/Goal of the Study

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

- Is the site characterisation sufficient to provide adequate confidence to make decisions regarding remediation and or management?
- 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 Information Inputs

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 Boundaries of the Study

The study boundary is defined laterally as the site boundary, Lot 1 to 3 DP516963, within the Maitland local government area. The site is located at 1 to 5 Station Lane, Lochinvar NSW and covers an area of approximately 4,500m² (refer to Figure 1 and 2, Appendix A). Vertically, the study boundary will be defined by the depth of soil contamination. It is anticipated the vertical boundary would be a maximum of 1.5m bgs. Temporally, the study boundary is the date of sampling.

5.5 Step 5 – Develop an Analytical (Statistical) 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 Performance or Acceptance Criteria

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 below.

5.7 Step 7 – Develop the Plan 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 4,500m² in area. The NSW EPA (2022) Sampling Design Part 1 – Application, Contaminated Land Guidelines recommends a minimum of 12 sampling locations to characterise a site of 4,500m². As the site contained multiple buildings, vehicles, waste/equipment and evidence of filling over three separate allotments an increased sampling density of 34 sampling locations has been adopted for the site.

Based on the site history assessment, four AECs were identified. To provide an assessment of the AECs identified, and an assessment of potential soil contamination across the site, judgemental sampling was considered appropriate.

Sampling locations were selected based on the site history, the AECs identified for the site, and providing representative sampling across the site.

Table 6.1 summarises the sampling locations with reference to the AECs, and the laboratory analysis. The sampling locations are shown on Figure 4, Appendix A.

AEC	Potential COCs	Samples Collected	COCs analysed
1. Current and former buildings on the site:	Metals, Asbestos, OCPs	SS1-1 to SS1-4, SS1- 8, SS1-9, BH01, SS2- 1 to SS2-4, SS2-6 to SS2-8, SS3-3 to SS3- 6	Metals, Asbestos, OCPs, TRH, BTEX, PAH
2. Storage of vehicles, equipment and materials	TRH, BTEX, PAH, Metals, Asbestos, OCPs (CoPCs dependent on material/waste type)	SS1-3, SS1-5 to SS1- 7, SS1-10, SS1-11, SS2-5, SS2-9, BH04, SS3-2	Metals, Asbestos, TRH, BTEX, PAH (CoPCs dependent on material/waste type)
3. Filling on the site	TRH, BTEX, PAH, OCPs, Metals, Asbestos	BH02, SS1-11, BH03, BH05, SS3-1, BH06, BH07, ASB1	TRH, BTEX, PAH, OCPs, Metals, Asbestos

AEC	Potential COCs	Samples Collected	COCs analysed
4. Former agricultural use (grazing land)	OCPs, Metals	SS1-1 to SS1-11, SS2-1 to SS2-9, SS3- 1 to SS3-, BH01 to BH07	Metals, OCPs

Notes: Some boreholes/surface samples were used to assess multiple AECs. TP = test pit, SS = surface sample, Metals = arsenic, cadmium, chromium, copper, lead, nickel, zinc, mercury, and molybdenum; TRH = total recoverable hydrocarbons; BTEX = benzene, toluene, ethylbenzene, xylenes; PAH = polycyclic aromatic hydrocarbons.

6.2 Soil Sampling

The boreholes were drilled using a 2.7t excavator with a 300mm auger attachment. The boreholes were excavated at least 0.5m into natural material or a maximum of 2.3m bgs. Soil samples were collected from the boreholes in the topsoil and fill (where present) materials and underlying natural materials. The samples were collected directly from the auger, using a clean pair of nitrile gloves.

The surface soil samples were collected with the assistance of the excavator equipped with a 450mm bucket. Surface soil samples were collected from 0.0-0.1m.

Each surface sample and fill material samples were assessed for asbestos onsite 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). The results of the gravimetric testing are shown in Table 3, Appendix B, and discussed in Section 9.2.

The soil samples were placed into laboratory supplied glass jars and plastic zip-lock bags. 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 the NATA-accredited Eurofins laboratory under chain of custody conditions. Soil samples were selected for analysis based on field observations, and providing a spread across the site. The soil samples were analysed for the following:

Twenty-two soil samples were selected for analysis as part of this PDSI based on field observations. The soil samples were analysed for the following:

- Total Recoverable Hydrocarbons (TRH) 13 primary samples;
- Benzene, Toluene, Ethylbenzene, Xylenes (BTEX) 13 primary samples;
- Polycyclic Aromatic Hydrocarbons (PAHs) 13 primary samples;
- Metals (arsenic, cadmium, chromium, copper, lead, nickel, zinc and mercury) 25 primary samples;
- OCP's 5 primary samples;
- pH and Cation Exchange Capacity (CEC) 1 primary samples;
- Asbestos (NEPM %w/w) 15 primary soil samples; and
- Asbestos (ID) 1 primary sample.

7.0 Investigation Criteria

7.1 Health and Ecological Investigation and Screening Levels

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) are generally used in NSW when selecting investigation levels for chemical contaminants in soil.

The purpose of the ASC NEPM (2013) is to 'establish a nationally consistent approach to the assessment of site contamination to ensure sound environmental management practices by the community which includes regulators, site assessors, environmental auditors, landowners, developers and industry'.

ASC NEPM (2013) provides health and ecological investigation and screening levels for different exposure scenarios based on a proposed land use. Health and ecological investigation and screening levels are applicable to the first stage (Tier 1) of site assessment and are used to assist in the iterative development of a Conceptual Site Model (CSM). 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.

Ecological Investigation Levels (EILs) and Ecological Screening Levels (ESLs) are applicable for assessing risk to terrestrial ecosystems under residential, open space and commercial/industrial land use scenarios. They apply to the top 2m of soil, which corresponds to the root zone and habitation zone of many species.

The ElLs are associated with selected metals and organic compounds. The ElLs are site specific and are determined by calculating an Ambient Background Concentration (ABC) and an Added Contaminant Limit (ACL) for the site, which are added together to get the ElL. The ElL's for the site have been calculated using an ABC and site specific pH, Cation Exchange Capacity (CEC) and clay content values. The ABC were obtained from Trace Element Concentrations in Soils from Rural and Urban Areas of Australia (Olszowy et al, 1995) - old suburbs, high traffic, 25 percentile.

The ESLs are associated with petroleum compounds and fractions and are dependent on specific soil physical properties (i.e. coarse and fine-grained soil).

Based on the proposed site use the investigation and screening levels for residential land use have been adopted (HIL A, EIL A, HSL A, and ESL A), and are shown in Table 7.3 below.

7.2 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 residential land use have been adopted and are shown in Table 7.3 below.

7.3 Adopted Soil Investigation Criteria

The adopted soil criteria are presented in Table 7.3 below.

Contaminant	HIL / HSL^ A (mg/kg) ^{1,2}	EIL / ESL A ³
Arsenic	100	100
Cadmium	20	-
Chromium VI	100	-
Chromium III	-	690*
Copper	6,000	250*
Lead	300	1,100
Nickel	400	380*
Zinc	7,400	490*
Mercury	40	-
Benzene	0.7	65

Table 7.3 – Adopted Soil Criteria

Contaminant	HIL / HSL^ A (mg/kg) ^{1,2}	EIL / ESL A ³
Toluene	480	105
Ethylbenzene	NL	125
Xylenes	110	45
Naphthalene	5	170
TRH C6-C10	-	180
TRH C6-C10 minus BTEX	50	-
TRH >C10-C16	-	120
TRH >C10-C16 minus naphthalene	280	-
TRH >C16-C34	NL	1,300
TRH >C34-C40	NL	5,600
Benzo(a)pyrene	-	0.7
Benzo(a)pyrene TEQ	3	-
Total PAHs	300	-
DDD+DDT+DDE	240	180
Aldrin & dieldrin	6	-
Chlordane	50	-
Endosulfan	270	-
Endrin	10	-
Heptachlor	6	-
Hexachlorobenzene	10	-
Methoxychlor	300	-
Toxaphene	20	-
Asbestos	Detected	-
Bonded ACM %	0.01%	-
FA and AF %	0.001%	-

Contaminant	HIL / HSL^ A (mg/kg) ^{1,2}	EIL / ESL A ³
All forms of asbestos	No visible evidence for surface soil (top 10cm)	-

Notes:

^ Based on an average pH of 7.6, a CEC of 33meq/100g, and Clay content 50%, and using Ambient Background Concentration obtained from Olszowy et al (1995) using urban soils, old suburbs with high traffic,25% percentile.

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

2 - ASC NEPM - Soil Health Screening Levels for Vapour Intrusion, Residential, Clay 0m to <1m 3 - ASC NEPM (2013) - Ecological Investigation and Screening Levels, Urban Residential/Public Open Space, Fine textured

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	Туре	Lab	Analysis
D1.2.12.24	Duplicate of SS1-1	Eurofins	Metals, TRH, BTEX, PAHs

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

Table 4, Appendix B, presents the relative percentage differences (RPDs) between the primary and duplicate samples. A review of the Qualtest QA / QC results indicates that RPDs were within the acceptable range (30%). 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 time 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 laboratory control limits;
- Laboratory duplicate RPDs were recorded within the control limits, with exception of lead and zinc the lab quoted a Q02 'The duplicate %RPD is outside the recommended acceptance criteria. Further analysis indicates sample heterogeneity as the cause'. Based on this the usability of the data has not been impacted. For a mercury RPD the lab also 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.'; and
- 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 boreholes are summarised below in Tables 9.1 and 9.2. The borehole logs are presented in Appendix C. The below summary covers the subsurface conditions observed in excavation works carried out across the site.

Unit	Soil Type	Description
1A	FILL – TOPSOIL	Sandy CLAY / Clayey SAND – low to medium plasticity (generally low plasticity), dark brown, fine to coarse grained (mostly fine to medium grained) sand, root affected.
		Clayey SAND / SAND – fine to medium grained, brown, fines of low plasticity, trace fine to medium grained angular gravel.
		Silty Gravelly SAND – fine to coarse grained, dark grey, fine to medium grained angular gravel, fines of low plasticity. Trace pockets of Sandy CLAY, with some coal and slag inclusions.
1B FILL – OTHER	FILL - OTHER	Sandy CLAY / Gravelly Sandy CLAY / CLAY – medium to high plasticity, dark brown with some pale orange-brown to brown, fine to coarse grained (mostly fine to medium grained) sand, with some fine to medium grained angular gravel in places, trace rootlets in places.
		GRAVEL – medium grained, angular, pale orange-brown and grey.
2	TOPSOIL	Sandy CLAY – low to medium plasticity, dark brown, fine to medium grained (mostly fine grained) sand, root affected.
3	ALLUVIUM	CLAY – high plasticity, grey with some pale brown, with some fine to coarse grained (mostly fine to medium grained) sand.
4	residual soil	Sandy CLAY – medium to high plasticity, mixtures of pale brown to dark brown, pale orange-brown to orange-brown, and pale grey-brown, fine to coarse grained (mostly fine to medium grained) sand, trace fine grained sub-angular to sub- rounded gravel. Pockets / Lenses / Bands of Extremely to Highly Wegthered
		rock in places.
5	EXTREMELY WEATHERED ROCK (with soil properties)	Andesite; breaks down into Gravelly Sandy CLAY – medium plasticity, brown, fine to coarse grained sand, fine to medium grained angular to sub-angular gravel.
,	HIGHLY WEATHERED	ANDESITE – fine to coarse grained, brown, estimated extremely low to very low strength.
6	ROCK	SANDSTONE – fine to medium grained, red-brown, estimated very low to medium strength.

Table 9.1 – Summary of Soil Units and Types

Location	Unit 1A FILL - TOPSOIL	Unit 1B FILL – OTHER	Unit 2 TOPSOIL	Unit 3 ALLUVIUM	Unit 4 RESIDUAL SOIL	Unit 5 EXTREMELY WEATHERED ROCK (with soil properties)	Unit 6 HIGHLY WEATHERED ROCK
			I	Depth in metres (m))		
BH01	0.00 – 0.30	0.30 – 1.15	-	1.15 – 2.10	2.10 - 2.30	-	-
BH02	0.00 – 0.05	0.05 – 0.80	-	0.80 - 1.10	1.10 – 2.30	-	-
BH03	0.00 – 0.05	0.05 - 0.40	-	-	0.40 - 1.80	1.80 – 1.90	1.90 – 2.30
BH04	-	-	0.00 - 0.10	-	0.10 – 0.85	0.85 – 2.00	2.00 - 2.30
BH05	-	-	0.00 - 0.10	-	0.10 – 2.30	-	-
BH06	0.00 - 0.15	0.15-0.40#	_	_	-	-	_
BH07	-	0.00 – 0.50	-	-	0.50 – 2.30	-	-

Table 9.2 – Summary of Soil Units Encountered at Test Locations

*End of borehole

Groundwater inflows were not observed during drilling.

9.2 Laboratory Results

Soil analytical results for the contamination assessment are summarised in Table 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 indicated that concentrations of contaminants were reported below the adopted criteria, with the exception of:

- Concentration of chromium exceeded the HIL criteria (100mg/kg) in sample SS2-7 (110mg/kg);
- Concentrations of lead exceeded the HIL criteria (300mg/kg) in sample SS2-7 (520mg/kg), and SS2-9 (310mg/kg); and
- Bonded ACM exceeded the adopted HSL (0.01%) in sample SS1-11 (0.07%).

95% Upper Confidence Limit Calculations

For concentrations of chromium and lead exceeding the adopted investigation level, the 95% Upper Confidence Limits (UCLs) of the average concentrations for surface sample results was 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."

Calculation sheets for data statistics, including average, standard deviation and 95%UCL of the average, are attached in Appendix G. 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.

Due to the sites size and similarity in surface soils observed, all surface samples from the site were included in the UCL calculation.

Parameter	Chromium - HIL	Lead - HIL	
No. of samples	24	24	
Average	46.5	111.5	
Standard Deviation	19.81 (20%)	110.5 (37%)	
95% UCL	53.43	156.4	
HIL (mg/kg)	100 HIL	300 HIL	

The 95% UCL calculations are attached in Appendix B and showed:

10.0 Conceptual Site Model

Based on the results of the detailed site investigation carried out on the site, the Conceptual Site Model (CSM) has been updated.

Table 10.0 – Conceptual Site Model

AEC	COPC	Mechanism of Contamination	Potentially Affected Media	Human & Ecological Receptors	Potential mechanisms of exposure	Sampling Locations	Potential & Complete Exposure Pathways
 Current and former buildings on the site: Weathering of potentially hazardous materials (asbestos, lead paint, galvanised metals). Use of pesticides around building. Demolition of structures over time. 	Metals, Asbestos, OCPs	Top-down leaks/spills, flakes/fibres to soil. Leaching of soil contaminants to surface water and groundwater	 Surface soils Surface water Groundwater Aesthetics 	 Current site visitors Future construction workers & site users Soil biota/plants and transitory wildlife Offsite surface water - Lochinvar Creek (located adjacent to the western boundary of the site) flowing offsite to the north Offsite groundwater discharge point - Hunter River located approximately 3.5km north of the site 	 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 discharge to Lochinvar Creek located adjacent to the western boundary of the site Groundwater discharge to Hunter River, located 3km to the north of the site. 	SS1-1 to SS1-4, SS1-8, SS1-9, BH01, SS2-1 to SS2-4, SS2-6 to SS2-8, SS3-3 to SS3-6	 Incomplete exposure pathway for current site visitors, future construction workers, site users, and ecological receptors, as no contamination identified. Incomplete exposure pathway for soil contaminants to leach to surface water, as no contamination identified in soil. Incomplete exposure pathway to groundwater due to depth of groundwater (>3m), clay subsoils and no contamination identified.
 2. Storage of vehicles, equipment and materials: 3. Filling on the site 	TRH, BTEX, PAH, Metals, Asbestos, OCPs (CoPCs dependent on material/waste type) TRH, BTEX, PAH, OCPs, Metals, Asbestos, pH and CEC	Top-down leaks/spills, flakes/fibres to soil. Leaching of soil contaminants to surface water and groundwater. Potential use of imported fill of unknown quality and origin.	 Surface soils Surface water Groundwater Aesthetics Fill Soils Groundwater Surface Soils Surface water Underlying soils 	 Current site visitors Future construction workers & site users Soil biota/plants and transitory wildlife Offsite surface water - Lochinvar Creek (located adjacent to the western boundary of the site) flowing offsite to the north Offsite groundwater discharge point - Hunter River located approximately 3.5km north of the site 	 Direct dermal contact with contaminated soil Ingestion of contaminated soil Inhalation of asbestos fibres, or contaminated soil (as dust) Inhalation of petroleum hydrocarbon vapours Leaching of soil contaminants to surface water and/or groundwater Surface water discharge to Lochinvar Creek located adjacent to the western boundary of the site Groundwater discharge to Hunter River, located 3km to the north of the site. 	SS1-3, SS1-5 to SS1-7, SS1-10, SS1- 11, SS2-5, SS2-9, BH04, SS3-2 BH02, SS1-11, BH03, BH05, SS3-1, BH06, BH07, ASB1	 Complete exposure pathway for current site visitors, future construction workers, site users as bonded ACM contamination identified in SS1-11 exceeding adopted criteria. Incomplete exposure pathway for ecological receptors, as no contamination identified. Incomplete exposure pathway for soil contaminants to leach to surface water, as no contamination identified in soil. Incomplete exposure pathway to groundwater due to depth of groundwater (>3m), clay subsoils and no contamination identified.

AEC	COPC	Mechanism of Contamination	Potentially Affected Media	Human & Ecological Receptors	Potential mechanisms of exposure	Sampling Locations
4. Former agricultural use (grazing land) Potential use of pesticides.	OCPs, Metals	Potential application of pesticides on surface soils.	 Surface Soils Groundwater Surface water 	 Current site visitors Future construction workers & site users Soil biota/plants and transitory wildlife Offsite surface water – Lochinvar Creek (located adjacent to the western boundary of the site) flowing offsite to the north. Offsite groundwater discharge point – Hunter River located approximately 3.5km north of the site 	 Direct dermal contact with contaminated soil Ingestion of contaminated soil Leaching of soil contaminants to surface water and/or groundwater Surface water discharge to Lochinvar Creek located adjacent to the western boundary of the site Groundwater discharge to Hunter River, located 3km to the north of the site. 	SS3-7

Potential & Complete Exposure Pathways
 Incomplete exposure pathway for current site visitors, future construction workers, site users, and ecological receptors, as no contamination identified.
 Incomplete exposure pathway for soil contaminants to leach to surface water, as no contamination identified in soil.
 Incomplete exposure pathway to groundwater due to depth of groundwater (>3m), clay subsoils and no contamination identified.

11.0 Conclusions and Recommendations

The site history review showed that the site has been used for residential purposes from at least 1976 to the present day, and was likely vacant farming (grazing) land prior to 1976. Dwellings were constructed on Lots 1 and 2 between 1961 and 1976, and on Lot 3 between 1984 and 1991.

Four AEC's were identified for the site:

- 1. Current and former buildings on the site;
- 2. Storage of vehicles, equipment, and waste materials;
- 3. Imported Fill Potential use of contaminated imported fill; and,
- 4. Former agricultural use (grazing).

To assess whether contamination was present, seven borehole locations and twenty-seven surface locations were sampled, targeting the identified AEC and providing a spread across the site.

The laboratory results showed concentrations of contaminants below the adopted criteria, with the exception of bonded ACM exceeding human health criteria in surface sample SS1-11. The ACM was located on the site surface in an area where materials containing asbestos may have been stored historically, and where fill material is inferred to present, particularly in the location of underground services. Excavation in this area was not possible due to the presence of underground services.

The Conceptual Site Model (CSM) indicated that exposure pathways were complete for current and future site users, and construction/maintenance workers due to bonded ACM exceeding human health criteria in surface sample SS1-11.

Based on the results of the Detailed Site Investigation it is considered the site can be made suitable for the proposed childcare centre, with the following recommendations:

- Preparation of a Remediation Action Plan (RAP) for the remediation of the ACM, and validation of the surrounding site surface and soils;
- Clearances are undertaken of the soils in the footprints of the site buildings post-demolition to check for ACM; and
- Preparation of an Unexpected Finds Procedure to manage potential unexpected finds of contamination during earthworks and construction for the proposed development.

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 childcare centre.

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.

12.0 Limitations

This report has been prepared by Qualtest for Boar Island Unit Trust based on the objectives and scope of work listed 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.

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.

13.0 References

NSW Department of Primary Industries (Office of Water) Registered Groundwater Bore Map, accessed from <u>http://allwaterdata.water.nsw.gov.au/water.stm</u>.

NSW Land and Property Information, Spatial Information eXchange (SIX) Maps - Topographic Map, accessed from <u>https://maps.six.nsw.gov.au/</u>.

State of NSW and Department of Planning, Industry and Environment Acid Sulfate Soil online database, accessed from <u>https://www.environment.nsw.gov.au/eSpade2Webapp</u>

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

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

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

WA DoH (2009) Guidelines for the Assessment, Remediation 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.

Qualtest (2024) Preliminary Site Investigation 1 – 5 Station Lane, Lochinvar NSW. Ref: NEW24P-0254-AA dated 12 November 2024 APPENDIX A: Figures



Image obtained on 28 October 2024 from Google Earth Pro, (imagery dated 8 January 2023)

Q	ualtest ⁵	
	LABORATORY (NSW) PTY LTD	

Client:	MAVID DEVELOPMENTS PTY LTD	Drawing No:	FIGURE 1
Project:	PROPOSED CHILDCARE CENTRE	Project No:	NEW24P-0254-AA
Location:	1-5 STATION LANE, LOCHINVAR NSW	Scale:	N.T.S.
Title:	SITE LOCATION PLAN	Date:	28/10/2024



Image obtained on 28 October 2024 from Google Earth Pro, (imagery dated 8 January 2023)



Client:	MAVID DEVELOPMENTS PTY LTD	Drawing No:	FIGURE 2
Project:	PROPOSED CHILDCARE CENTRE	Project No:	NEW24P-0254-AA
Location:	1-5 STATION LANE, LOCHINVAR NSW	Scale:	N.T.S.
Title:	LOT LOCATION PLAN	Date:	28/10/2024





Image obtained on 28 October 2024 from Google Earth Pro, (imagery dated 8 January 2023)



Client:	MAVID DEVELOPMENTS PTY LTD	Drawing No:	FIGURE 4
Project:	PROPOSED CHILDCARE CENTRE	Project No:	NEW24P-0254-AA
ocation:	1-5 STATION LANE, LOCHINVAR NSW	Scale:	N.T.S.
itle:	SITE FEATURES PLAN	Date:	28/10/2024

APPENDIX B: Tables

Table 1 - Soil Analytical Results - Metals, OCPs 1-5 Station Lane, Lochinvar NSW

					Field ID	BH01 0.0-0.1	BH06 0.15-0.25	SS1-1	SS1-2	SS1-3	SS1-4	SS1-5	SS1-6	SS1-7	SS1-9	SS1-10	SS2-1	SS2-2	SS2-3	SS2-4	SS2-5	SS2-6
					Date	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024
Analytes		Units	LOR	HIL/HSL A ¹	EIL/ESL A ²		•		•	•	•	•	•						•			
Metals	Arsenic	mg/kg	2	100	100	3.3	2	11	3.8	5.4	4.1	5	3.6	4.2	3.9	3.6	7.3	5.5	3.7	3	3.9	4.9
	Cadmium	mg/kg	0.4	20		< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	0.4	< 0.4	< 0.4
	Chromium (total)	mg/kg	5	100	690*	66	53	30	30	46	34	43	41	40	34	37	58	20	39	34	34	60
	Copper	mg/kg	5	6000	250*	20	18	20	16	24	20	24	32	31	27	26	33	16	29	20	30	26
	Lead	mg/kg	5	300	1100	62	7.7	81	61	75	120	40	160	81	35	160	130	63	58	42	150	130
	Mercury	mg/kg	5	40		0.4	< 0.1	0.2	0.2	0.1	0.6	0.2	1.2	< 0.1	< 0.1	0.8	0.2	0.2	< 0.1	< 0.1	0.4	0.2
	Nickel	mg/kg	5	400	380*	32	49	22	22	29	20	33	41	41	35	26	26	9.5	23	22	21	38
	Zinc	mg/kg	5	7400	490*	33	33	85	81	82	190	100	120	280	110	110	200	120	340	470	190	250
CEC & pH	Cation Exchange Capacity	meq/100g	0.5			33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	pH (1:5 Aqueous extract)	pH units	0.1			7.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4.4'-DDD	mg/kg	0.05	240		< 0.05	< 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.05
	4.4'-DDE	mg/kg	0.05			< 0.05	< 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.05
	4.4'-DDT	mg/kg	0.05		180	< 0.05	< 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.05
	a-HCH	mg/kg	0.05			< 0.05	< 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.05
	Aldrin	mg/kg	0.05			< 0.05	< 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.05
	Aldrin and Dieldrin (Total)*	mg/kg	0.05	6		< 0.05	< 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.05
	b-HCH	mg/kg	0.05			< 0.05	< 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.05
	Chlordanes - Total	mg/kg	0.1	50		< 0.1	< 0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.1
	DDT + DDE + DDD (Total)*	mg/kg	0.05	240		< 0.05	< 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.05
	d-HCH	mg/kg	0.05			< 0.05	< 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.05
OCPs	Dieldrin	mg/kg	0.05			< 0.05	< 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.05
	Endosulfan I	mg/kg	0.05	270		< 0.05	< 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.05
	Endosulfan II	mg/kg	0.05			< 0.05	< 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.05
	Endosulfan sulphate	mg/kg	0.05			< 0.05	< 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.05
	Endrin	mg/kg	0.05	10		< 0.05	< 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.05
	Endrin aldehyde	mg/kg	0.05			< 0.05	< 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.05
	Endrin ketone	mg/kg	0.05			< 0.05	< 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.05
	g-HCH (Lindane)	mg/kg	0.05			< 0.05	< 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.05
	Heptachlor	mg/kg	0.05	6		< 0.05	< 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.05
	Heptachlor epoxide	mg/kg	0.05			< 0.05	< 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.05
	Hexachlorobenzene (HCB)	mg/kg	0.05	10		< 0.05	< 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.05
	Methoxychlor	mg/kg	0.05	300		< 0.05	< 0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.05
	Toxaphene	mg/kg	0.5	20		< 0.5	< 0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.5
Netes											-	-	-	-	-		-			-	-	-

Notes

Result Result EIL based on pH of 7.6 and CEC of 33mg/kg, and Clay content 50%, and using

Ambient Background Concentration obtained from Olszowy et al (1995) using

urban soils, old suburbs with high traffic , 25% percentile.

Concentration exceeds adopted HIL/HSL A

Concentration exceeds the adopted EIL/ESL A

ASC NEPM (2013) Health Investigation & Screening Levels, Residential, Clay Om to <1m

NEPC (2013) Soil Ecological Investigation & Screening Levels, Residential, Fine Texture



Table 1 - Soil Analytical Results - Metals, OCPs 1-5 Station Lane, Lochinvar NSW

					Field ID	SS2-7	SS2-8	SS2-9	SS3-1	SS3-2	SS3-3	SS3-4	SS3-6	SS3-7
		Date	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024			
Analytes Units			LOR	HIL/HSL A ¹	EIL/ESL A ²									
Metals	Arsenic	mg/kg	2	100	100	97	6.1	4.1	2.7	6.6	6.1	4	3.4	5
	Cadmium	mg/kg	0.4	20		< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
	Chromium (total)	mg/kg	5	100	690*	110	43	52	69	73	51	45	21	72
	Copper	mg/kg	5	6000	250*	110	27	30	21	34	24	16	13	30
	Lead	mg/kg	5	300	1100	520	150	310	14	170	31	18	24	53
	Mercury	mg/kg	5	40		0.5	0.3	< 0.1	< 0.1	0.2	< 0.1	< 0.1	< 0.1	< 0.1
	Nickel	mg/kg	5	400	380*	38	26	33	63	47	30	28	13	47
	Zinc	mg/kg	5	7400	490*	390	140	260	61	94	140	50	73	87
CEC & nH	Cation Exchange Capacity	meq/100g	0.5			-	-	-	-	-	-	-	-	-
CEC & PH	pH (1:5 Aqueous extract)	pH units	0.1			-	-	-	-	-	-	-	-	-
	4.4'-DDD	mg/kg	0.05	240		< 0.05	< 0.05	-	-	-	-	-	-	-
	4.4'-DDE	mg/kg	0.05			< 0.05	< 0.05	-	-	-	-	-	-	-
	4.4'-DDT	mg/kg	0.05		180	< 0.05	< 0.05	-	-	-	-	-	-	-
	a-HCH	mg/kg	0.05			< 0.05	< 0.05	-	-	-	-	-	-	-
	Aldrin	mg/kg	0.05			< 0.05	< 0.05	-	-	-	-	-	-	-
	Aldrin and Dieldrin (Total)*	mg/kg	0.05	6		0.24	< 0.05	-	-	-	-	-	-	-
	b-HCH	mg/kg	0.05			< 0.05	< 0.05	-	-	-	-	-	-	-
	Chlordanes - Total	mg/kg	0.1	50		< 0.1	< 0.1	-	-	-	-	-	-	-
	DDT + DDE + DDD (Total)*	mg/kg	0.05	240		< 0.05	< 0.05	-	-	-	-	-	-	-
	d-HCH	mg/kg	0.05			< 0.05	< 0.05	-	-	-	-	-	-	-
OCPs	Dieldrin mg,		0.05			0.24	< 0.05	-	-	-	-	-	-	-
	Endosulfan I	mg/kg	0.05	270		< 0.05	< 0.05	-	-	-	-	-	-	-
	Endosulfan II	mg/kg	0.05	270		< 0.05	< 0.05	-	-	-	-	-	-	-
	Endosulfan sulphate	mg/kg	0.05			< 0.05	< 0.05	-	-	-	-	-	-	-
	Endrin	mg/kg	0.05	10		< 0.05	< 0.05	-	-	-	-	-	-	-
	Endrin aldehyde	mg/kg	0.05			< 0.05	< 0.05	-	-	-	-	-	-	-
	Endrin ketone	mg/kg	0.05			< 0.05	< 0.05	-	-	-	-	-	-	-
	g-HCH (Lindane)	mg/kg	0.05			< 0.05	< 0.05	-	-	-	-	-	-	-
	Heptachlor	mg/kg	0.05	6		< 0.05	< 0.05	-	-	-	-	-	-	-
	Heptachlor epoxide	mg/kg	0.05			< 0.05	< 0.05	-	-	-	-	-	-	-
	Hexachlorobenzene (HCB)	mg/kg	0.05	10		< 0.05	< 0.05	-	-	-	-	-	-	-
	Methoxychlor	mg/kg	0.05	300		< 0.05	< 0.05	-	-	-	-	-	-	-
	Toxaphene	mg/kg	0.5	20		< 0.5	< 0.5	-	-	-	-	-	-	-

Notes

Result Result EIL based on pH of 7.6 and CEC of 33mg/kg, and Clay content 50%, and using

Ambient Background Concentration obtained from Olszowy et al (1995) using

urban soils, old suburbs with high traffic , 25% percentile.

Concentration exceeds adopted HIL/HSL A

Concentration exceeds the adopted EIL/ESL A

ASC NEPM (2013) Health Investigation & Screening Levels, Residential, Clay Om to <1m

NEPC (2013) Soil Ecological Investigation & Screening Levels, Residential, Fine Texture


Table 2 - Soil Analytical Results - TRH, BTEX, PAH 1-5 Station Lane, Lochinvar NSW

			Field ID	BH01 0.0-0.1	BH06 0.15-0.25	SS1-1	SS1-4	SS1-5	SS1-6	SS1-7	SS1-10	SS2-4	SS2-5	SS2-7	SS2-8	SS3-3		
					Date	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024
Analytes		Units	LOR	HIL/HSL A ¹	EIL/ESL A ²													
	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		0.7	< 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 (medium bound)	mg/kg	0.6	3		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
PARS	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	1.2	< 0.5	0.7	< 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		170	< 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	0.7	< 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	1.1	< 0.5	0.7	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Total PAH	mg/kg	0.5	300		< 0.5	< 0.5	< 0.5	< 0.5	3	< 0.5	1.4	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	Benzene	mg/kg	0.1	0.7	65	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
DTEV	Toluene	mg/kg	0.1	480	105	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
BIEX	Ethylbenzene	mg/kg	0.1	NL	125	< 0.1	< 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	110	45	< 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
	Naphthalene	mg/kg	0.5	5	170	< 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		180	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
трц	TRH C6-C10 less BTEX (F1)	mg/kg	20	50		< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20	< 20
IKH	TRH >C10-C16	mg/kg	50		120	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
	TRH >C10-C16 less Naphthalene (F2)	mg/kg	50	280		< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50	< 50
	TRH >C16-C34	mg/kg	100		1300	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100
	TRH >C34-C40	mg/kg	100		5600	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100	< 100

Notes NL Result

Result

Not limiting

Concentration exceeds adopted HIL/HSL A Concentration exceeds the adopted EIL/ESL A

 $^{\rm 1}$ ASC NEPM (2013) Health Investigation & Screening Levels, Residential, Clay 0m to <1m

NEPC (2013) Soil Ecological Investigation & Screening Levels, Residential, Fine ² Texture



Table 3: Asbestos Results 1-5 Station Lane, Lochinvar NSW

	Sample ID	BH01 0.0-0.1	BH02 0.0-0.1	BH03 0.0-0.1	BH04 0.0-0.1	BH05 0.0-0.1	BH06 0.0-0.15	BH07 0.0-0.1	SS1-1	SS1-2	SS1-3	SS1-4	SS1-5	SS1-6	SS1-7	SS1-8	SS1-9	SS1-10	SS1-11	SS2-1	SS2-2	SS2-3	SS2-4	SS2-5
	Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
	Sample Date	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024
	HIL/HSL A																							
ACM weight (g)		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	86	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	0.086	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	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	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	15	15	15	15
%w/w ACM in Soil	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00
%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%	
Asbestos ID	Detected	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
																								·

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

Detected Detected below adopted criteria

Criteria from ASC NEPM (2013) Table 7 - Health Screening Level (HSL) for Asbestos, Residential



	Sample ID	SS2-6	SS2-7	SS2-8	SS2-9	SS3-1	SS3-2	SS3-3	SS3-4	SS3-5	SS3-6	SS3-7	ASB1
	Matrix	Soil	Material										
	Sample Date	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024	2/12/2024
	HIL/HSL A												
ACM weight (g)		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	-
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	-
Soil Volume (L)		10	10	10	10	10	10	10	10	10	10	10	-
Asbestos Content (%)		15	15	15	15	15	15	15	15	15	15	15	-
%w/w ACM in Soil	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-
%w/w FA/AF in Soil	0.001	<0.001%	<0.001%	<0.001%	-	<0.001%	-	-	-	-	-	-	-
Asbestos ID	Detected	-	-	-	-	-	-	-	-	-	-	-	Detected

Notes:

%w/w asbestos in soil calculated using: %

 Result
 Exceeds adopted

 Detected
 Detected below :

Criteria from ASC NEPM (2013) Table 7 - H





		Sam	ple ID	SS1-1	D1.2.12.24	
			Date	2/12/2024	2/12/2024	RPD %
			Туре	Primary	Duplicate	
Analytes		Soil Units	LOR			
	Arsenic	mg/kg	2	11	12	9
	Cadmium	mg/kg	0.4	< 0.4	< 0.4	0
	Chromium	mg/kg	5	30	33	10
Motals	Copper	mg/kg	5	20	20	0
ivietais	Lead	mg/kg	5	81	79	3
	Mercury	mg/kg	0.1	0.2	0.2	0
	Nickel	mg/kg	5	22	24	9
	Zinc	mg/kg	5	85	86	1
	Acenaphthene	mg/kg	0.5	< 0.5	< 0.5	0
	Acenaphthylene	mg/kg	0.5	< 0.5	< 0.5	0
	Anthracene	mg/kg	0.5	< 0.5	< 0.5	0
	Benz(a)anthracene	mg/kg	0.5	< 0.5	< 0.5	0
	Benzo(a)pyrene	mg/kg	0.5	< 0.5	< 0.5	0
	Benzo(a)pyrene TEQ (medium boun	mg/kg	0.6	0.6	0.6	0
	Benzo(b&j)fluoranthene	mg/kg	0.5	< 0.5	< 0.5	0
	Benzo(g.h.i)perylene	mg/kg	0.5	< 0.5	< 0.5	0
ΡΔHc	Benzo(k)fluoranthene	mg/kg	0.5	< 0.5	< 0.5	0
FAIIS	Chrysene	mg/kg	0.5	< 0.5	< 0.5	0
	Dibenz(a.h)anthracene	mg/kg	0.5	< 0.5	< 0.5	0
	Fluoranthene	mg/kg	0.5	< 0.5	< 0.5	0
	Fluorene	mg/kg	0.5	< 0.5	< 0.5	0
	Indeno(1.2.3-cd)pyrene	mg/kg	0.5	< 0.5	< 0.5	0
	Naphthalene	mg/kg	0.5	< 0.5	< 0.5	0
	Phenanthrene	mg/kg	0.5	< 0.5	< 0.5	0
	Pyrene	mg/kg	0.5	< 0.5	< 0.5	0
	Total PAH	mg/kg	0.5	< 0.5	< 0.5	0
	Benzene	mg/kg	0.1	< 0.1	< 0.1	0
BTFX	Toluene	mg/kg	0.1	< 0.1	< 0.1	0
DIEX	Ethylbenzene	mg/kg	0.1	< 0.1	< 0.1	0
	Xylenes - Total	mg/kg	0.3	< 0.3	< 0.3	0
	Naphthalene	mg/kg	0.5	< 0.5	< 0.5	0
	TRH C6-C10	mg/kg	20	< 20	< 20	0
TRH	TRH C6-C10 less BTEX (F1)	mg/kg	20	< 20	< 20	0
	TRH >C10-C16	mg/kg	50	< 50	< 50	0
	TRH >C10-C16 less Naphthalene (F2)	mg/kg	50	< 50	< 50	0
	TRH >C16-C34	mg/kg	100	< 100	< 100	0
	TRH >C34-C40	mg/kg	100	< 100	< 100	0

$\begin{bmatrix} 1 & \frac{1}{2} & \frac{1}{2} \\ \frac{1}{2} & \frac{1}{2} & \frac{1}{2} \\ \frac{1}{2} & \frac{1}{2} & \frac{1}{2} \end{bmatrix}$	ABC	D E	n F I	G H K	Č. Ľ
1		UCL Statistic	cs for Unc	ensored Full Data Sets	
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3	User Selected Options		10.00.00		
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5	From File	WorkSheet.xls			
6	Full Precision	OFF			
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8	Number of Bootstrap Operations	2000			
9	an taith a raid to an abhr than Marain Parait.	an an - Land - Canada Val Jan -			
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12					
13		1992 M. 1997 M.	General	Statistics	
14	Total N	lumber of Observations	24	Number of Distinct Observations	19
15		an the transmission and a contract of the transmission of transmission of transmission of the transmission of transmission	Anne- M	Number of Missing Observations	0
16		Minimum	20	Mean	46.5
17	N	Maximum	110	Median	42
18		SD	19.81	Std. Error of Mean	4.043
19	and and a sub-state of the sub-	Coefficient of Variation	0.426	Skewness	1.545
20				an tana kanangka manangka kanangka kanangka kanangka kanangka kanangka kanangka kanangka kanangka kanangka kan	*** BRANDER WAR AND AND AND A FACT
21	And the residue of the solution of a solution of the solution	a un de l'entre la companya de la co	Normal C	GOF Test	n - e n carse reanne ann a anna
22	Sha	apiro Wilk Test Statistic	0.878	Shapiro Wilk GOF Test	
23	1% Sha	piro Wilk Critical Value	0.884	Data Not Normal at 1% Significance Level	
24		Lilliefors Test Statistic	0.177	Lilliefors GOF Test	
25	1%	Lilliefors Critical Value	0.205	Data appear Normal at 1% Significance Level	
26		Data appear Appro	ximate No	rmal at 1% Significance Level	
27					
28	05% No	Assu	iming Norr	nal Distribution	
29	9370 INU	95% Student's tUCI	53 / 3	95% OCLS (Adjusted OF Skewness)	5/ 51
30		33 % Oldenta-t OOL	00.40	95% Modified-t UCI (Johnson-1978)	53.64
32					
33			Gamma (GOF Test	
34	AN TAUN THE REPORT OF AN AND TABLET AND THE REPORT OF A DESCRIPTION OF ANY AND ADDRESS.	A-D Test Statistic	0.384	Anderson-Darling Gamma GOF Test	100 H ALMONTU - MILONOM W.J. A
35	αν την απόγεατα τη ποριστική την απόγεα που παραστική ποριστική ποριστική ποριστική ποριστικό απόγεασα απόγεα σ	5% A-D Critical Value	0.746	Detected data appear Gamma Distributed at 5% Significar	nce Level
36	s se stand a fair de all se se stand anna seanna an failean an bhaile anna ann an standachadh ann an se	K-S Test Statistic	0.126	Kolmogorov-Smirnov Gamma GOF Test	"CF & a vitable" — unartic for LLC & even.
37	n dan de understaats, see en sene beset sterne het de naar het de see see	5% K-S Critical Value	0.178	Detected data appear Gamma Distributed at 5% Significar	nce Level
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39		م معلوم المعالم المراجع			
40		a de la compañía dos contratos a ser como a segur	Gamma	Statistics	eres an of the real of the second
41		k hat (MLE)	6.739	k star (bias corrected MLE)	5.925
42		Theta hat (MLE)	6.9	Theta star (bias corrected MLE)	7.849
43	ALL C		323.5	nu star (bias corrected)	284.4
44			40.5	Mile Sd (blas corrected)	19.1
45	Adjuste	ed Level of Significance	0.0392	Approximate Chi Square Value	240.3
40			0.0002		2-10.0
48		Assu	ming Gam	ma Distribution	
49	95% App	proximate Gamma UCL	53.68	95% Adjusted Gamma UCL	54.23
50	an a	a construction and the construction of the second			
51	a an an ann an an an an an an an an an a	a na anna mara maranna an anna an an an an an an an an an	Lognormal	GOF Test	
52	Sha	apiro Wilk Test Statistic	0.974	Shapiro Wilk Lognormal GOF Test	
53	10% Sha	piro Wilk Critical Value	0.93	Data appear Lognormal at 10% Significance Leve	
54	 - Production for production of the second secon	Lilliefors Test Statistic	0.106	Lilliefors Lognormal GOF Test	
55	10%	Lilliefors Critical Value	0.162	Data appear Lognormal at 10% Significance Leve	I

	A B C D E	F	G	н	I	J	K	L
56	Data appear L	ognormal	at 10% Signi	ficance Le	vel			
57								
58		Lognorma	I Statistics					
59	Minimum of Logged Data	2.996				Mean of	logged Data	3.763
60	Maximum of Logged Data	4.7				SD of	logged Data	0.392
61								
62	Assun	ning Logno	ormal Distrib	ution				
63	95% H-UCL	54.34			90% (Chebyshev (MVUE) UCL	57.82
64	95% Chebyshev (MVUE) UCL	63			97.5% (Chebyshev (MVUE) UCL	70.19
65	99% Chebyshev (MVUE) UCL	84.31						
66								
67	Nonparametr	ic Distribu	tion Free UC	L Statistic	s			
68	Data appear	to follow a	Discernible	Distributio	n			
69								
70	Nonpara	metric Dis	tribution Fre	e UCLs				
71	95% CLT UCL	53.15			ç	5% BCA Bo	otstrap UCL	54.38
72	95% Standard Bootstrap UCL	53.14				95% Boo	tstrap-t UCL	55.71
73	95% Hall's Bootstrap UCL	57.57			95% F	ercentile Bo	otstrap UCL	53.54
74	90% Chebyshev(Mean, Sd) UCL	58.63			95% Ch	ebyshev(Me	an, Sd) UCL	64.12
75	97.5% Chebyshev(Mean, Sd) UCL	71.75			99% Ch	ebyshev(Me	an, Sd) UCL	86.73
76								
77	S	Suggested	UCL to Use					
78	95% Student's-t UCL	53.43						
79								
80	When a data set follows an appro	oximate dis	stribution pas	sing only c	ne of the G	OF tests,		
81	it is suggested to use a UCL base	d upon a d	istribution pa	ssing both	GOF tests	in ProUCL		
82								
83	Note: Suggestions regarding the selection of a 95% L	JCL are pr	ovided to hel	p the user	to select th	e most appr	opriate 95% L	JCL.
84	Recommendations are based upon data size, d	lata distrib	ution, and sk	ewness us	ing results	from simulat	tion studies.	
85	However, simulations results will not cover all Real Wor	rld data se	ts; for additic	nal insight	the user m	ay want to c	onsult a statis	tician.
86								

	A B C D E	*F*	G H	$\{ \hat{e}_{i}^{(k)} \}_{i \in [n]} $
1	UCL Statist	ics for Unc	ensored Full Data Sets	
2		en constantar antenna - e da	1-1	
3	User Selected Options	1 P		
4	Date/Time of Computation ProUCL 5.2 12/12/2024	10:07:27 A	M	
5	From File WorkSheet.xls			
6	Full Precision OFF			
7	Confidence Coefficient 95%			
8	Number of Bootstrap Operations 2000			
9				
10				
11	Lead			
12				
13		General	Statistics	
14	Total Number of Observations	24	Number of Distinct Observations	20
15			Number of Missing Observations	0
16	Minimum	14	Mean	111.5
17	Maximum	520	Median	78
18	SD	110.5	Std. Error of Mean	22.55
19	Coefficient of Variation	0.991	Skewness	2.525
20		an alaman ta the state of the same of	The array of a set a real model back of the new of the allocations of the set of the	A.P. Million (A.M. Ville Mark dr.
21	na na an a	Normal C	GOF Test	
22	Shapiro Wilk Test Statistic	0.729	Shapiro Wilk GOF Test	
23	1% Shapiro Wilk Critical Value	0.884	Data Not Normal at 1% Significance Level	ar ana ina ina dia 4000 kaominina mpika
24	Lilliefors Test Statistic	0.215	Lilliefors GOF Test	
25	1% Lilliefors Critical Value	0.205	Data Not Normal at 1% Significance Level	A.) C. WALLAND AN COMPANY OF
26	Data Not I	Normal at 1	% Significance Level	and a set of the second version along a second
27	к 			
28	Ass	uming Norr	nal Distribution	·
29	95% Normal UCL		95% UCLs (Adjusted for Skewness)	
30	95% Student's-t UCL	150.1	95% Adjusted-CLT UCL (Chen-1995)	161
31	-	1	95% Modified-t UCL (Johnson-1978)	152.1
32		ал. — ми	а на ус. По рели и се на запости изи улични и отношни сти. Нариг и на уни спирарларни на болинето у дерорате би Опри	1 L 1 & ME TAK IS ARE CARD' AND CARD.
33	4) menari i ungkari pungkari pungkari kanakang pungkari ngkati kana kanakana suka kanakahita kunakana i sa ta sari s	Gamma	GOF Test	· • • • • • • • • • • • • • • • • • • •
34	A-D Test Statistic	0.387	Anderson-Darling Gamma GOF Test	, 1963, 1960, 1969, 1969, 1969, 1969, 1979, 1979, 1979, 1979, 1979, 1979, 1979, 1979, 1979, 1979, 1979, 1979, 1
35	5% A-D Critical Value	0.761	Detected data appear Gamma Distributed at 5% Significan	ice Level
36	K-S Test Statistic	0.122	Kolmogorov-Smirnov Gamma GOF Test	10 7 414 0 10 10 10 10 10 10 10 10 10 10 10 10 1
37	5% K-S Critical Value	0.181	Detected data appear Gamma Distributed at 5% Significan	ice Level
38	Detected data appear	Gamma Di	stributed at 5% Significance Level	THE T Y BLI IN T STRAFTON TO.
39				
40		Gamma	Statistics	The second second second second second
41	k hat (MLE)	1.508	k star (bias corrected MLE)	1.348
42	Theta hat (MLE)	73.92	Theta star (bias corrected MLE)	82.74
43	nu hat (MLE)	72.4	nu star (bias corrected)	64.69
44	MLE Mean (bias corrected)	111.5	MLE Sd (bias corrected)	96.05
45	an a	1 M 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Approximate Chi Square Value (0.05)	47.18
46	Adjusted Level of Significance	0.0392	Adjusted Chi Square Value	46.13
47	Control of Annual Control of Contro	B Webbs, Factor accord		
48	Ass	uming Gam	ma Distribution	* 10 - 107 - 8 6 10 6 6 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
49	95% Approximate Gamma UCL	152.9	95% Adjusted Gamma UCL	156.4
50			len and service second and the second s	B. S. T. Marine and Patrick Sciences
51	Construction of the second	Lognormal	GOF Test	
52	Shapiro Wilk Test Statistic	0.982	Shapiro Wilk Lognormal GOF Test	a a an
53	10% Shapiro Wilk Critical Value	0.93	Data appear Lognormal at 10% Significance Leve	
54	Lilliefors Test Statistic	0.108	Lilliefors Lognormal GOF Test	
55	10% Lilliefors Critical Value	0.162	Data appear Lognormal at 10% Significance Leve	101 - 7 - 7 - 6 A 102 - 11 - 108 - 20

	A B C D E	F	G	Н	1	J	к	Ļ
56	Data appear	Lognormal	at 10% Signi	ificance Le	vel			
57								
58		Lognorma	al Statistics					
59	Minimum of Logged Data	2.639				Mean of I	ogged Data	4.347
60	Maximum of Logged Data	·6.254				SD of I	ogged Data	0.881
61								
62	Assu	ming Logno	ormal Distrib	ution				
63	95% H-UCL	176.7			90% C	hebyshev (N	VUE) UCL	178.3
64	95% Chebyshev (MVUE) UCL	208.5			97.5% C	hebyshev (N	VUE) UCL	250.5
65	99% Chebyshev (MVUE) UCL	332.9						
66								
67	Nonparame	tric Distribu	tion Free UC	CL Statistic	s			
68	Data appea	r to follow a	Discernible	Distributio	n			
69								
70	Nonpar	ametric Dis	tribution Fre	e UCLs				
71	95% CLT UCL	148.6			9	5% BCA Boo	otstrap UCL	158.4
72	95% Standard Bootstrap UCL	148.2				95% Boot	strap-t UCL	180.1
73	95% Hall's Bootstrap UCL	341.7			95% P	ercentile Boo	otstrap UCL	149.7
74	90% Chebyshev(Mean, Sd) UCL	179.1			95% Che	ebyshev(Mea	an, Sd) UCL	209.8
75	97.5% Chebyshev(Mean, Sd) UCL	252.3			99% Che	ebyshev(Mea	an, Sd) UCL	335.9
76								
77		Suggested	UCL to Use					
78	95% Adjusted Gamma UCL	156.4						
79								
80	Note: Suggestions regarding the selection of a 95%	UCL are pr	ovided to he	lp the user	to select the	e most appro	opriate 95% (JCL.
81	Recommendations are based upon data size,	data distrib	ution, and sk	ewness us	sing results f	rom simulati	on studies.	
82	However, simulations results will not cover all Real Wi	orid data se	ts; for additio	onal insight	the user ma	ay want to co	onsult a stati	stician.
83								

APPENDIX C: Borehole Logs



CLIENT: MAVID DEVELOPMENTS PTY LTD

PROJECT: PROPOSED CHILDCARE CENTRE

LOCATION: 1 -5 STATION LANE, LOCHINVAR NSW

BOREHOLE NO: PAGE: JOB NO: LOGGED BY: DATE:

BH01 1 OF 1 NEW24P-0254 BB/LC

2/12/24

	dri Boi	LL T REH(YPE: OLE DIAN	2.7 IETER	TONNE R:	EXCA 300 m	VATC m	R SURF DATL	ACE RL:					
F		Drilli	ing and Sar	npling				Material description and profile information				Fiel	d Test	
	MEIHOU	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticit characteristics,colour,minor componen	y/particle ts	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	Structure and additional observations
			E <u>(0.10m</u>)		-		CL	FILL-TOPSOIL: Sandy CLAY / Clayey SAN plasticity, dark brown, fine to medium grain root affected. Star picket encountered in fill, borehole mo 0.2m and restarted.	ID - low ed sand, ved over	M < Wp				FILL - TOPSOIL
			0.50m E		0.5_		sc	FILL: Clayey SAND - fine to medium graine fines of low plasticity.	ed, brown,					FILL
			0.90m		-		SM	FILL: Silty Gravelly SAND - fine to coarse g dark grey, fine to medium grained, angular fines of low plasticity, trace pockets Sandy (medium to high plasticity, grey-brown and fine to coarse grained sand) with some coa slag.	rained, gravel, CLAY brown, I and	- M				
	1/1	ncountered	E & U50 1.1 5 m		- 1. <u>0</u> -		СН	FILL: Sandy CLAY - high plasticity, dark bro some pale orange-brown to brown, fine to r grained sand, trace rootlets.	own with nedium			HP	180	FILL 7 POSSIBLE ALLUVIUM
	AL	Not E	E _1.25m		-		СН	CLAY - high plasticity, grey with some pale fine to medium grained sand. Becoming pale brown and grey.	brown,			HP	170 180	ALLUVIUM / POSSIBLE FILL
VI20210101 1411 1411 14202/					1. <u>5</u>			1.60m Sandy CLAY - high plasticity, brown to pale with some grey, fine grained sand.		M > WP	St	HP	180	ALLUVIUM
					- - 2.0_		СН					ΗP	180	
					-		СН	2.10m Sandy CLAY - medium to high plasticity, pa to pale orange-brown, fine to coarse graine fine to medium grained) sand, trace fine gra sub-angular to sub-rounded gravel. 2.30m	le brown d (mostly ained	_	VSt	HP	300	RESIDUAL SOIL
					-			Hole Terminated at 2.30 m						
	LEGEND: Water Water Level (Date and time shown) Water Inflow Water Outflow Strata Changes		Notes, Sa U ₅₀ CBR E ASS B	mples a 50mm Bulk s Enviro (Glass Acid s (Plast Bulk s	nd Tes Diame ample f onmenta s jar, se Sulfate s ic bag, Sample	IS ter tube sample or CBR testing al sample aled and chilled on site) Soil Sample air expelled, chilled)	Consiste VS V S S F F St S VSt V H F Fb F	ncy /ery Soft Soft Firm Stiff /ery Stiff Hard Friable		U <2 25 50 10 20 >2	<u>CS (kPa</u> 25 5 - 50 0 - 100 00 - 200 00 - 400 400	Moisture Condition D Dry M Moist W Wet Wp, Plastic Limit WL Liquid Limit		
		Gr tra De str	radational or ansitional stra efinitive or dis rata change	ata stict	Field Test PID DCP(x-y) HP	<u>s</u> Photo Dynar Hand	ionisati nic pen Penetro	on detector reading (ppm) etrometer test (test depth interval shown) meter test (UCS kPa)	Density	V L MD D VD	V La M D V	ery Lo bose ediun ense ery Do	oose n Dense ense	Density Index <15% Density Index 15 - 35% Density Index 35 - 65% Density Index 65 - 85% Density Index 85 - 100%



CLIENT: MAVID DEVELOPMENTS PTY LTD

PROJECT: PROPOSED CHILDCARE CENTRE

LOCATION: 1 -5 STATION LANE, LOCHINVAR NSW

BOREHOLE NO: **BH02** PAGE: JOB NO: LOGGED BY: DATE: 2/12/24

1 OF 1 NEW24P-0254 BB/LC

	DR	ILL T		2.7	TONNE	EXCA	VATC	R SUR	ACE RL:					
-	ы	Drill			•	300 m	m	DAT	JIVI:			Field	d Tost	
-	METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticit characteristics,colour,minor componen	y/particle ts	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	Structure and additional observations
			E 0.10m 0.50m E 0.60m 0.80m				CL CH	0.05m FILL-TOPSOIL: Sandy CLAY - low to medi plasticity, dark brown, fine to coarse graine (root affected. FILL: Sandy CLAY - medium to high plastic brown, fine to coarse grained (mostly fine to grained) sand, with some fine to medium g angular gravel (black brick?). 0.80m	um d sand, // / city, dark o medium rained, rained,	M > Wp		HP	360 340	FILL - TOPSOIL FILL
0		untered	E & U50 1.10m		- 1. <u>0</u>		СН	coarse grained (mostly fine to medium grai sand.	ned)		VSt	ΗP	310	
18/12/2024 11:41 10:01:00:01 Datgel Lab and In Situ 100	AD/T	Not Enco			- - 1.5_ -		СН	Sandy CLAY - medium to high plasticity, pa to pale grey-brown, fine to coarse grained (fine grained) sand, trace fine grained, sub- sub-rounded gravel. Pockets and lenses of extremely weathere	ale brown (mostly angular to d rock.	M ~ Wp	Fb / VSt	HP	350	RESIDUAL SOIL
EMPLATE LUGS SHEET.GPJ_< <urs< td=""><td></td><td></td><td></td><td></td><td>- 2.0_</td><td></td><td></td><td>Pocket of highly weathered rock/possible fl</td><td>oater.</td><td></td><td></td><td>HP</td><td>360 350</td><td></td></urs<>					- 2.0_			Pocket of highly weathered rock/possible fl	oater.			HP	360 350	
PII 00- 11					-	-		Hole Terminated at 2.30 m						
	LEG Wate	END: er (Dat (Dat Wat Wat I Wat I Wat I Cha tra tra De	er Level e and time sł er Inflow er Outflow anges radational or ansitional stra efinitive or dis	nown) Ita	Notes, Sa U ₅₀ CBR E ASS B Field Test PID DCP(x-y)	mples a 50mm Bulk s Envirc (Glass Acid S (Plast Bulk S Bulk S ts Photo Dynar	nd Tes Diame ample bonmenta s jar, se Sulfate S ic bag, Sample ionisationis the ionis the second	s iter tube sample or CBR testing I sample led and chilled on site) icoil Sample iir expelled, chilled) in detector reading (ppm) etrometer test (test depth interval shown)	Consister VS V S S F F St S VSt V H H Fb F Density	ncy ery Soft oft irm tiff ard riable V L L		U 25 50 10 20 20 20 20 20 20 20 20 20 20 20 20 20	CS (kPa 25 5 - 50 0 - 100 00 - 200 00 - 400 400 00 - 400 400	Moisture Condition D Dry M Moist W Wet Wp, Plastic Limit WL Liquid Limit Density Index <15%
3		Definitive or distict strata change			ΠP	nand	I ENER			U VD	U Vi	ense ery Do	ense	Density Index 65 - 85% Density Index 85 - 100%



CLIENT: MAVID DEVELOPMENTS PTY LTD

PROJECT: PROPOSED CHILDCARE CENTRE

LOCATION: 1 -5 STATION LANE, LOCHINVAR NSW

BOREHOLE NO: **BH03** PAGE: JOB NO: LOGGED BY: DATE: 2/12/24

1 OF 1 NEW24P-0254 BB/LC

	DR BO	ILL T	YPE: OLE DIAN	TONNE	EXCA 300 m	VATC m	R SURF	ACE RL:						
┝		Drill	ing and Sar	npling				Material description and profile information				Fiel	d Test	
	METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity characteristics,colour,minor component	y/particle ts	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	Structure and additional observations
			E .0.10m		-		CL SP	0.05m FILL-TOPSOIL: Sandy CLAY/Clayey SANE plasticity, dark brown, fine grained sand, rov \affected. FILL: SAND - fine to medium grained, pale brown with some pale orange-brown, trace medium grained, angular gravel.	D - low ot / / brown to fine to	^d ≫ ₩ M				FILL - TOPSOIL
			0.40m E & U50 0.75m		- 0. <u>5</u> -			0.40m Piece of black PVC plastic Sandy CLAY - high plasticity, brown, fine to grained (mostly fine to medium grained) sa	coarse nd.			HP	180 150	RESIDUAL SOIL
	AD/T	Encountered			- - 1. <u>0</u> -		СН			M > w _p	St	HP	160 160	
0/12/2024 11:41 10:01:00:01 Dalger Lav and III		Not			- - 1. <u>5</u> -		 CI	1.30m Sandy CLAY - medium plasticity, brown, fin coarse grained sand, with some fine to med grained, angular to sub-angular gravel.	 to dium	-	VSt	HP	210 250 240	
					- 2.0_ -		 	1.80m Extremely Weathered Andesite with soil pro breaks down into Gravelly Sandy CLAY - m plasticity, brown, fine to coarse grained san medium grained, angular to sub-angular gr. Andesite - fine to coarse grained, brown, es extremely to very low strength.	perties: ledium ld, fine to / avel stimated	M ~ W	H / Fb	,		EXTREMELY WEATHERED ROCK EXTREMELY TO HIGHLY WEATHERED ROCK
					-			Hole Terminated at 2.30 m						
	LEGEND: <u>Notes.</u> Water User User User User User User User Us		Notes, Sa U ₅₀ CBR E ASS B	mples a 50mm Bulk s Enviro (Glass Acid S (Plasti Bulk S	nd Tes Diame ample onmenta s jar, se Sulfate S ic bag, Sample	is ter tube sample or CBR testing al sample aled and chilled on site) Soil Sample air expelled, chilled)	Consister VS V S S F F St S VSt V H H Fb F	ncy ery Soft oft irm tiff ery Stiff ard riable	1	U <2 25 50 10 20 >2	<u>CS (kPa</u> 5 - 50 0 - 100 00 - 200 00 - 400 400			
	Gradational or transitional strata Definitive or distict strata change					<u>ts</u> Photoi Dynan Hand	ionisati nic pen Penetro	on detector reading (ppm) etrometer test (test depth interval shown) meter test (UCS kPa)	<u>Density</u>	V L D VD	V La D D V	ery Lo oose lediun ense ery Do	oose n Dense ense	Density Index <15% Density Index 15 - 35% Density Index 35 - 65% Density Index 65 - 85% Density Index 85 - 100%



CLIENT: MAVID DEVELOPMENTS PTY LTD

PROJECT: PROPOSED CHILDCARE CENTRE

LOCATION: 1 -5 STATION LANE, LOCHINVAR NSW

BOREHOLE NO: PAGE: JOB NO: LOGGED BY: BB/LC DATE:

BH04 1 OF 1 NEW24P-0254

2/12/24

DR	ILL TYPE: 2.7 TONNE EXC, REHOLE DIAMETER: 300 r					VATO	DR SUR	FACE RL:					
БО	REN Drill				300 m	m	DAI				Fiel	ld Tost	
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	LASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plastic characteristics,colour,minor compone	ity/particle nts	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	Structure and additional observations
AD/T	Not Encountered	E 0.10m U50 0.85m		- - - - - - - - - - - - - - - - - - -		CL CH CH	TOPSOIL: Sandy CLAY - low to medium dark brown, fine to medium grained (most grained) sand, root affected. Sandy CLAY - medium to high plasticity, of fine to coarse grained (mostly fine to medi- grained) sand. 0.60m Sandy CLAY - medium to high plasticity, p to grey-brown, fine to coarse grained sand- grained angular gravel. 0.85m Extremely Weathered Andesite with soil p breaks down into Gravelly Sandy CLAY - plasticity, brown, fine to coarse grained san- medium grained, angular to sub-angular of Pocket of Feldspar as coarse grained gra 2.00m SANDSTONE - fine to medium grained, ro estimated very low to medium strength, fr	vel.	M < Wp	H/Fb		>600	TOPSOIL RESIDUAL SOIL EXTREMELY WEATHERED ROCK
LEG Wate	END: er (Dat Wat Wat	er Level te and time sl er Inflow er Outflow anges	nown)	Notes, Sa U ₅₀ CBR E ASS B	mples a 50mm Bulk s Enviro (Glass Acid S (Plast Bulk S	nd Tes n Diame ample to nmenta s jar, se Sulfate \$ ic bag, Sample	ts ter tube sample for CBR testing al sample aled and chilled on site) Soil Sample air expelled, chilled)	Consiste VS VS F F St S VSt V H F Fb F	very Soft Soft Firm Stiff Hard Friable		U 29 50 10 20	CS (kPa 25 5 - 50 0 - 100 00 - 200 00 - 400 400	Moisture Condition D Dry M Moist W Wet Wpp Plastic Limit WL Liquid Limit
<u></u>	trata changes D Builk Sample Gradational or transitional strata Field Tests Definitive or distict strata change DCP(x-y) Dynamic pene HP					ionisati nic pen Penetro	on detector reading (ppm) etrometer test (test depth interval shown) ometer test (UCS kPa)	Density	V L D VD	V L D N D V	ery Lo oose lediur ense <u>ery</u> D	oose m Dense ense	Density Index <15% Density Index 15 - 35% e Density Index 35 - 65% Density Index 65 - 85% Density Index 85 - 100%



CLIENT: MAVID DEVELOPMENTS PTY LTD

LOCATION: 1 -5 STATION LANE, LOCHINVAR NSW

PROJECT: PROPOSED CHILDCARE CENTRE

BOREHOLE NO: PAGE:

JOB NO:

DATE:

BH05 1 OF 1

NEW24P-0254

LOGGED BY:

BB/LC 2/12/24

	dri Boi	LL T REH	YPE: OLE DIAN	2.7 IETER	TONNE :	EXCA 300 m	VATC	R SURF. DATU	ACE RL: M:					
F		Drill	ing and Sar	npling				Material description and profile information				Fiel	d Test	
	METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity characteristics,colour,minor component	//particle s	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	Structure and additional observations
EMPLATE LOGS SHEET.GPJ < <drawingfile>> 18/12/2024 11:41 10.01.00.01 DatgeLab and In Stu Tool</drawingfile>	AD/T	Not Encountered	E 0.10m U50 0.60m		- - - - - - - - - - - - - - - - - - -		CL CH CH	1.00m Image: Sandy CLAY - Integration of the grained sand, root affected. Sandy CLAY - medium to high plasticity, palorange-brown, trace pale grey, fine to media grained sand. 1.00m CLAY - medium to high plasticity, palorange-brown, with some fine to medium to range-brown, with some fine to medium (mostly fine grained) sand. 1.60m Sandy CLAY - medium to high plasticity, pale orange brown, with some fine to medium (mostly fine grained) sand. 1.60m Sandy CLAY - medium to high plasticity, pale orange brown, with some fine to medium (mostly fine grained) sand. 1.60m 2.30m	k brown, le um ge-brown grained le brown d sand, lar	M ~ Wp M < Wp M < Wp M < Wp	H VSt/ Fb		>600 550 530 250 380 520	TOPSOIL RESIDUAL SOIL
TEST PIT 00- TI					-	-		Hole Terminated at 2.30 m						
g NON-CORED BOREHOLE -	Vate	END: <u>v</u> Wat (Dai Wat Wat Wat	er Level te and time s er Inflow er Outflow anges	hown)	Notes, Sa U₅₀ CBR E ASS B	mples a 50mm Bulk s Enviro (Glass Acid S (Plast Bulk S	n d Tes Diame ample f onmenta s jar, se Sulfate \$ ic bag, s Sample	IS ter tube sample or CBR testing Il sample aled and chilled on site) Soil Sample air expelled, chilled)	Consister VS V S S F F St S VSt V H H Fb F	ncy /ery Soft oft irm /tiff /ery Stiff lard riable		U 25 50 10 20 20	<u>CS (kPa</u> 25 5 - 50 0 - 100 00 - 200 00 - 400 400	Moisture Condition D Dry M Moist W Wet Wp, Plastic Limit WL Liquid Limit
QT LIB 1.1.GLB Log	<u></u>	Gi tra Di st	radational or ansitional stra efinitive or dia rata change	ata stict	Field Test PID DCP(x-y) HP	<u>ts</u> Photo Dynar Hand	ionisationisationic pen Penetro	on detector reading (ppm) etrometer test (test depth interval shown) meter test (UCS kPa)	<u>Density</u>	V L ME D VD	Vi La D D Vi	ery Lo bose ediur ense ery D	oose n Dense ense	Density Index <15% Density Index 15 - 35% Density Index 35 - 65% Density Index 65 - 85% Density Index 85 - 100%



CLIENT: MAVID DEVELOPMENTS PTY LTD

PROJECT: PROPOSED CHILDCARE CENTRE

LOCATION: 1 -5 STATION LANE, LOCHINVAR NSW

BOREHOLE NO: **BH06** PAGE: JOB NO: LOGGED BY: DATE: 2/12/24

1 OF 1 NEW24P-0254 BB/LC

DRILL TYPE: 2.7 T BOREHOLE DIAMETER:			TONNE	EXCA 300 m	VATC m	DR SURF.	ACE RL: IM:							
		Drilling and Sampling Material description and profile information							Fiel	d Test				
	METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity characteristics,colour,minor component	//particle s	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	Structure and additional observations
		untered	E 0 15m		-		CL	FILL-TOPSOIL: Sandy CLAY - low to mediu plasticity, brown, fine to coarse grained (mo grained) sand, root affected.	ım stly fine	M > W _P				FILL - TOPSOIL
	AD/T	Not Encol	E 0.25m		-		СН	FILL: Gravelly Sandy CLAY - medium to hig plasticity, brown, fine to coarse grained san medium grained (mostly fine grained) angul	gh d, fine to ar gravel,	M ~ W _P				FILL
					-		GP	FILL: GRAVEL - medium grained angular, p	⁄ oale	D				
NON-CORED BOREHOLE - TEST PT 00- TEMPLATE LOGS SHEET.GPJ < <drawingfile>> 18/12/2024 11:41 10:01:00:01 Daggel Lab and In Stu Tool</drawingfile>		END: er Va (Da Wa Wa	ter Level te and time si ter Inflow ter Outflow	nown)	0.5 0.5 - - - - - - - - - - - - -	mples a 50mm Bulk s Enviro (Glass Acid S (Plasti	nd Tes Diame ample t jar, se jufate S c bag, ;	10.40m orange-brown and grey. Top of black corrugated PVC pipe, approxin 450mm in diameter. Hole Terminated at 0.40 m Terminated due to encountered service Image: service due to encountered se	nately VS V S S F St S VSt V H H	incy /ery Soft Soft /ery Stiff /ery Stiff		U < 25 56 10 20 20	CS (kPa 25 5 - 50 0 - 100 00 - 200 00 - 400) <u>Moisture Condition</u> D Dry M Moist W Wet W _p Plastic Limit W _L Liquid Limit
1.1.GLB Lo		G tr D	radational or ansitional stra efinitive or dis	ata stict	Field Test PID DCP(x-y)	t <u>s</u> Photoi Dynan	ionisatio nic pen	on detector reading (ppm) etrometer test (test depth interval shown)	Density	V L MD	Ve Lo	ery Lo oose lediun	oose n Dense	Density Index <15% Density Index 15 - 35% Density Index 35 - 65%
QT LIE	Definitive or distict				HP	Hand	Penetro	ometer test (UCS kPa)		D VD		ense ery D	ense	Density Index 65 - 85% Density Index 85 - 100%



CLIENT: MAVID DEVELOPMENTS PTY LTD

PROJECT: PROPOSED CHILDCARE CENTRE

LOCATION: 1 -5 STATION LANE, LOCHINVAR NSW

BOREHOLE NO: PAGE: JOB NO: LOGGED BY: DATE: 2/12/24

BH07 1 OF 1 NEW24P-0254 BB/LC

		ILL T		2.7	TONNE	EXCA	VATC m	R SURF	ACE RL:					
ł	БО	Drill				300 m	111	DATU	JIVI:			Fiel	d Tost	
	METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity characteristics,colour,minor component	y/particle ts	MOISTURE	CONSISTENCY DENSITY	Test Type	Result	Structure and additional observations
EMPLATE LOGS SHEET.GPJ < <drawingfile>> 18/12/2024 11:41 10:01:01 DagetLab and in Situ Tool</drawingfile>	AD/T	Not Encountered	E 0.10m 0.50m E 0.60m 1.00m 1.20m				СН	FILL: CLAY - high plasticity, dark brown, tra medium grained sand, root affected top 0.1 White PVC pipe (stormwater), approximate in diameter. Sandy CLAY - medium to high plasticity, pa to orange-brown, fine to coarse grained (me grained) sand.	ly 90mm le brown ostly fine	$M < w_p$ $M > w_p$	VSt			FILL RESIDUAL SÕIL
STPIT 00					-	-								
1.GLB Log NON-CORED BOREHOLE - TE:	LEG Wat Stra	END: er (Dat Wat Wat Wat UWat	er Level te and time sl er Inflow er Outflow anges radational or ansitional stra	nown)	Notes, Sa U ₅₀ CBR E ASS B Field Test PID	mples a 50mm Bulk s Envirc (Glass Acid S (Plasti Bulk S S Photoi	nd Tesi Diame ample f nmenta s jar, se culfate S c bag, a ample onisatio	<u>s</u> er tube sample or CBR testing I sample aled and chilled on site) oil Sample ir expelled, chilled) n detector reading (ppm)	Consistency UCS (kPa) M VS Very Soft <25 M S Soft 25 - 50 M F Firm 50 - 100 V St Stiff 100 - 200 V VSt Very Stiff 200 - 400 V H Hard >400 Fb Friable		Moisture Condition D Dry M Moist W Wet Wp Plastic Limit W_L Liquid Limit Density Index <15% Density Index 15 - 35% Density Index 25 - 65%			
QT LIB 1.		D	etinitive or dis rata change	stict	HP	Hand	Penetro	meter test (UCS kPa)				ense ery D	ense	Density Index 65 - 85 Density Index 85 - 10

APPENDIX D: Data Validation Report



QA/QC DATA VALIDATION REPORT JOB NO.: NEW24P-0254 – DETAILED SITE INVESTIGATION

Eurofins reports: 1166792-S, 1166792-AID

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 :	\checkmark	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:

|--|

1



3. FIELD QA/QC

Soil Samples

No. Samples Analysed	27
Duplicates	1
Triplicates	0
Trip Blanks	0
Wash Blanks	0
Trip Spikes	0

No. Days Sampling

Item	Soil
Number of Days Sampling	1
Number of Sampling Events	1

Field Duplicates

Item	Yes/No	Comments
Were an adequate number of field duplicates collected?	No	Duplicates collected at a rate of 1 per 27 samples, slightly below the required 1 per 20 samples. Based on the RPD results, the data is considered to be representative of concentrations at the sampling points and the slightly lower duplicate sampling density is not considered to affect the results.
Were RPDs within control limits? No Limit for 5-10 x EQL and 30% for >10 x EQL	Yes	-

Trip Blanks/Trip Spikes

Item	Yes/No	Comments
Were an adequate number of trip blanks and trip spikes collected?	Yes	No trip blanks or spikes were collected, as volatiles were not a primary contaminant of concern, which was supported by field observations.
Were the trip blanks free of contaminants?	NA	
Were the trip spikes within recovery limits (between 80% and 120%)	NA	

Rinsate Samples

ltem	Yes/No	Comments
Were an adequate number of rinsate samples used? (1 per day of using reusable sampling equipment – trowel, hand auger etc)	Yes	Rinsate samples were not collected, as no reusable sampling equipment was used.

2



Were the rinsate samples free of contaminants?		
(If no, comment whether the contaminants		
present are also detected in the samples and	N/A	
whether they are common laboratory		
chemicals).		

Field QC was:

Satisfactory :	\checkmark	Partially Satisfactory:	Unsatisfactory:

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	

ltem	Yes/ No	Comments
B) Were the laboratory blanks and/or reagent blanks free of contamination?	Yes	
C) Were the spike recoveries within control limits?	Yes	
D) Were the RPDs of the laboratory duplicates within control limits?	No	Lead and zinc RPDs were outside of control limits. The lab quoted a Q02 which states: 'The duplicate %RPD is outside the recommended acceptance criteria. Further analysis indicates sample heterogeneity as the cause'. Based on this the usability of the data has not been impacted. For mercury 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.'
E) Were the surrogate recoveries within control limits?	Yes	

Laboratory Internal QA/QC was:

|--|

3



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 Reports

	and a second	Qualtest					2 AA (Genton	ińs.com	m 07 3902 4600 EnviroSampleQLD@eurofins.com 08 9251 960				51 9600 EnviroSampleWA@eurofins.com				6 Monterey Road Dandenong South VIC 3175 03 8564 5000 EnviroSampleVio@eurofins.com					
Company	Qualtest		Pro	ject №	NE	W24P-02	54			Project Manager	Emma Coleman		1	Sam	pler(s)		Lewi	is Cal	linan	20 Envirobalitple violgentolinis.com		
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	BH02 0.5-0.6	2/12/24	SOIL															1	4			
	BH02 0.8-0.9	2/12/24	SOIL															4	+			
	BH03 0.0-0.1	2/12/24	SOIL												-	+-		-				
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	BH07 0.5-0.6	2/12/24	SOIL															1	1			
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Contact Name	Emma Coleman		Total" or "											E	nail tor	Result		libbyt billysi	etz@q now@q	ualtest. qualtest.	com.au emmac .com.au lewisc:	oleman@q ua ltest.com.a illinan@qualtest.com.au
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Eurofins Environment Testing Australia Pty Ltd

Subsymption of samples to the basin anyone the desired as acceptance of Territy (Territy Chardian Territy Shardian Territy and Contribution agreed allocations Accepta in a basin sequent)



Eurofins Environment Testing Australia Pty Ltd

Eurofins Envir	onment Testing Au	ustralia Pty Ltd				Eurofins ARL Pty Ltd	Eurofins Enviro	onment Testing NZ L	.td	
ABN: 50 005 085 5	21					ABN: 91 05 0159 898	NZBN: 9429046024	954		
Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle	Perth	Auckland	Auckland (Focus)	Christchurch	Tauranga
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive	46-48 Banksia Road	35 O'Rorke Road	Unit C1/4 Pacific Rise,	43 Detroit Drive	1277 Cameron Road,
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West	Welshpool	Penrose,	Mount Wellington,	Rolleston,	Gate Pa,
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304	WA 6106	Auckland 1061	Auckland 1061	Christchurch 7675	Tauranga 3112
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448	+61 8 6253 4444	+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 2377	IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794 & 2780	Site# 25079	Site# 2370 & 2554				

www.eurofinsanz.com

EnviroSales@eurofins.com

Sample Receipt Advice

Company name: Qualtest Emma Coleman DSI - STATION LANE LOCHINVAR Contact name: Project name: NEW24P-0254 **Project ID:** 5 Day Dec 3, 2024 12:40 PM Turnaround time: Date/Time received **Eurofins reference** 1166792

Sample Information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table. J
- 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. 1
- Split sample sent to requested external lab. Х
- X Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Extra samples provided (BH05 0.1-0.2), sample on hold. Missing bag for BH07 0.5-0.6. (Email received - disregard above samples).

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: Andrew.Black@eurofinsanz.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.

Global Leader - Results you can trust



Certificate of Analysis

NATA Accredited

Accreditation Number 1261

Environment Testing

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Qualtast	Site Number 18217	
2 Murray Dwyer Circuit Mayfield West NSW 2304	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: Report Project Name Project ID Received Date Date Reported	Emma Coleman 1166792-AID DSI - STATION LANE LOCHINVAR NEW24P-0254 Dec 03, 2024 Dec 11, 2024	
Mothodology:		
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.	y
Man-made vitreous fibre (MMVF)	Fibres exhibiting isotropic characteristics, including glass fibres, glass wool, rock wool, slag wool, ceramic fibres and bi 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.	iO-
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*.	Э
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 but 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 a examples of these types of material, which are difficult to analyse.) lk ; are
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 assessos". This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.	nt f



Project Name	DSI - STATION LANE LOCHINVAR
Project ID	NEW24P-0254
Date Sampled	Dec 02, 2024
Report	1166792-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
BH01 0.0-0.1	24-De0004138	Dec 02, 2024	Approximate Sample 449g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
SS1-1	24-De0004140	Dec 02, 2024	Approximate Sample 560g Sample consisted of: Brown coarse-grained clayey sandy soil, brick and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
SS1-3	24-De0004142	Dec 02, 2024	Approximate Sample 535g Sample consisted of: Brown coarse-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.
SS1-5	24-De0004144	Dec 02, 2024	Approximate Sample 371g Sample consisted of: Brown fine-grained clayey soil, cement and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
SS1-6	24-De0004145	Dec 02, 2024	Approximate Sample 335g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
SS1-9	24-De0004147	Dec 02, 2024	Approximate Sample 396g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
SS1-11	24-De0004149	Dec 02, 2024	Approximate Sample 438g Sample consisted of: Brown fine-grained clayey soil, brick and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
SS2-1	24-De0004150	Dec 02, 2024	Approximate Sample 455g Sample consisted of: Brown fine-grained 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
SS2-2	24-De0004151	Dec 02, 2024	Approximate Sample 720g Sample consisted of: Brown coarse-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
SS2-3	24-De0004152	Dec 02, 2024	Approximate Sample 503g Sample consisted of: Brown fine-grained clayey soil, cement and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
SS2-4	24-De0004153	Dec 02, 2024	Approximate Sample 444g Sample consisted of: Brown coarse-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
SS2-6	24-De0004155	Dec 02, 2024	Approximate Sample 464g Sample consisted of: Brown coarse-grained sandy soil, coal and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
SS2-7	24-De0004156	Dec 02, 2024	Approximate Sample 344g Sample consisted of: Brown fine-grained clayey soil, coal, debris and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
SS2-8	24-De0004157	Dec 02, 2024	Approximate Sample 442g Sample consisted of: Brown coarse-grained clayeysandy soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
SS3-1	24-De0004159	Dec 02, 2024	Approximate Sample 331g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
ASB1	24-De0004191	Dec 02, 2024	Approximate Sample 86g / 105 x 80 x 10mm Sample consisted of: Grey fibre cement fragment	Chrysotile 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

Asbestos - LTM-ASB-8020 Asbestos - LTM-ASB-8020

Testing Site	Extracted	Holding Time
Sydney	Dec 03, 2024	Indefinite
Newcastle	Dec 03, 2024	Indefinite

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web: w email: I	ww.eurofins.com.au	Melbou 6 Monte Dander VIC 317 +61 3 8 nz.com NATA# Site# 12	rne rey Road ong Sout 5 564 5000 261 54	Geelong Sydney Canberra bad 19/8 Lewalan Street 179 Magowar Road Unit 1,2 Dacre S outh Grovedale Girraween Mitchell VIC 3216 NSW 2145 ACT 2911 000 +61 3 8564 5000 +61 2 9900 8400 +61 2 6113 809 NATA# 1261 NATA# 1261 NATA# 1261 Site# 25403 Site# 18217 Site# 25466			Brisbane ⇒ Street 1/21 Smallwood Place Murarrie QLD 4172 J91 T: +61 7 3902 4600 NATA# 1261 Site# 20794 & 2780			Newc 1/2 Fr Mayfie NSW +61 2 NATA Site#	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				kland D'Rorke Road rose, kland 1061 9 526 4551 Z# 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				
Co Ac	ompany Name: Idress:	Qualtest 2 Murray D Mayfield W NSW 2304	wyer C est	Circuit									Or Re Ph Fa	der Ne port # one: x:	0.: ¢:	116 02 4 02 4	6792 1968 4 1960 9	1468 9775			Received: Due: Priority: Contact Name:	Dec 3, 2024 Dec 10, 202 5 Day Emma Cole	12:40 PM 4 man		
Project Name: DSI - STATION LANE LOCHINVAR Project ID: NEW24P-0254																				Eurofii	s Analytical Servio	ces Manager :	Andrew Black		
Sample Detail										CANCELLED*	HOLD*	pH (1:5 Aqueous extract at 25 °C as rec.)	Organochlorine Pesticides	Organochlorine Pesticides	Metals M8	Moisture Set	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	Eurofins Suite B7					
Mell	bourne Laborate	ory - NATA	# 1261	I Site # 12	54							Х	х	х	Х	х	Х	Х	х	х					
Syd	ney Laboratory	- NATA # 1	261 Si	te # 18217				х		Х	х		х	х	Х	х	х		х	х					
Мау	field West Labo	oratory - NA	TA # 1	261 Site #	25079				Х																
Exte	ernal Laboratory	<u> </u>																							
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1	BH01 0.0-0.1	Dec 02, 20	24		Soil	N24-[De0004138	Х				Х	Х			Х		Х	Х						
2	BH06 0.15- 0.25	Dec 02, 20	24		Soil	N24-[De0004139							x			x			х					
3	SS1-1	Dec 02, 20	24		Soil	N24-[De0004140	Х									X			X					
4	SS1-2	Dec 02, 20	24		Soil	N24-[De0004141								Х		X								
5	SS1-3	Dec 02, 20	24		Soil	N24-[De0004142	Х							Х		X								
6	SS1-4	Dec 02, 20	24		Soil	N24-[De0004143		<u> </u>		<u> </u>						X			X					
7	SS1-5	Dec 02, 20	24		Soil	N24-[De0004144	Х									X			X					
8	SS1-6	Dec 02, 20	24		Soil	N24-[De0004145	Х									X			X					
9	SS1-7	Dec 02, 20	24		Soil	N24-[De0004146										X			X					
10	SS1-9	Dec 02, 20	24		Soil	N24-[De0004147	Х	<u> </u>						Х		X								
11	SS1-10	Dec 02, 20	24		Soil	N24-[De0004148										Х			Х					

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Sample Detail							Asbestos - WA guidelines	Asbestos Absence /Presence*	CANCELLED*	HOLD*	pH (1:5 Aqueous extract at 25 °C as rec.)	Organochlorine Pesticides	Organochlorine Pesticides	Metals M8	Moisture Set	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	Eurofins Suite B7					
Mel	bourne Laborate	ory - N	NATA # 1261 S	Site # 1254							Х	Х	Х	Х	Х	X	Х	х	х					
Syd	ney Laboratory	- NAT	TA # 1261 Site	# 18217			Х		Х	Х		Х	Х	Х	Х	X		Х	Х					
Мау	field West Labo	ratory	y - NATA # 126	61 Site # 25079				Х																
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13	SS2-1	Dec	02, 2024	Soil	N24-D	e0004150	X							Х		X								
14	SS2-2	Dec	02, 2024	Soil	N24-D	e0004151	X							Х		X								
15	SS2-3	Dec	02, 2024	Soil	N24-D	e0004152	X							X		X								
16	SS2-4	Dec	02, 2024	Soil	N24-D	e0004153	X									X			X					
17	SS2-5	Dec	02, 2024	Soil	N24-D	e0004154										X			X					
18	SS2-6	Dec	02, 2024	Soil	N24-D	e0004155	X						X	X		X								
19	SS2-7	Dec	02, 2024	Soil	N24-D	e0004156	X						X			X			Х					
20	SS2-8	Dec	02, 2024	Soil	N24-D	e0004157	X						X			X			Х					
21	SS2-9	Dec	02, 2024	Soil	N24-D	e0004158						<u> </u>		X		X								
22	SS3-1	Dec	02, 2024	Soil	N24-D	e0004159	Х					<u> </u>		Х	<u> </u>	X								
23	SS3-2	Dec	02, 2024	Soil	N24-D	e0004160						<u> </u>		Х	<u> </u>	X								
24	SS3-3	Dec	02, 2024	Soil	N24-D	e0004161						<u> </u>		<u> </u>		X			X					
25	SS3-4	Dec	02, 2024	Soil	N24-D	e0004162						<u> </u>		Х	<u> </u>	X								
26	SS3-6	Dec	02, 2024	Soil	N24-D	e0004163								Х		Х								

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Co Ac	ompany Name: Idress:	Qualt 2 Mu Mayfi NSW	test rray Dwyer C ield West ' 2304	ircuit							Order No Report # Phone: Fax:			o.: #:	5.: 1166792 02 4968 4468 02 4960 9775					Received: Due: Priority: Contact Name:	Dec 3, 2024 Dec 10, 202 5 Day Emma Cole	12:40 PM 4 man					
Project Name: DSI - STATION LANE LOCHINVAR Project ID: NEW24P-0254																			Eurofi	ns Analytical Servio	ces Manager :	Andrew Black					
Sample Detail							Asbestos - WA guidelines	Asbestos Absence /Presence*	CANCELLED*	HOLD*	pH (1:5 Aqueous extract at 25 °C as rec.)	Organochlorine Pesticides	Organochlorine Pesticides	Metals M8	Moisture Set	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	Eurofins Suite B7								
Mell	ourne Laborate	ory - N	NATA # 1261	Site # 1254							х	Х	х	х	Х	х	х	Х	х								
Syd	ney Laboratory	- NAT	TA # 1261 Sit	te # 18217			Х		Х	Х		Х	Х	Х	Х	X		Х	х								
Мау	field West Labo	ratory	y - NATA # 1	261 Site # 25079				X																			
27	SS3-7	Dec	02, 2024	Soil	N24-D	e0004164								Х		X											
28	D1.2.12.24	Dec	02, 2024	Soil	N24-D	e0004165										X			X								
29	BH01 0.5-0.6	Dec	02, 2024	Soil	N24-D	e0004166				Х																	
30	BH01 0.9-1.0	Dec	02, 2024	Soil	N24-D	e0004167				Х																	
31	BH01 1.15- 1.25	Dec	02, 2024	Soil	N24-D	e0004168				х																	
32	BH02 0.0-0.1	Dec	02, 2024	Soil	N24-D	e0004169				Х																	
33	BH02 0.5-0.6	Dec	02, 2024	Soil	N24-D	e0004170				Х																	
34	BH02 0.8-0.9	Dec	02, 2024	Soil	N24-D	e0004171				Х																	
35	BH03 0.0-0.1	Dec	02, 2024	Soil	N24-D	e0004172				Х																	
36	BH03 0.4-0.5	Dec	02, 2024	Soil	N24-D	e0004173				Х																	
37	BH04 0.0-0.1	Dec	02, 2024	Soil	N24-D	e0004174				Х																	
38	BH05 0.0-0.1	Dec	02, 2024	Soil	N24-D	e0004175				Х																	
39	BH06 0.0-0.15	Dec	02, 2024	Soil	N24-D	e0004176				Х																	
40	BH07 0.0-0.1	Dec	02, 2024	Soil	N24-D	e0004177				Х																	

	-		Eurofins Environ	Jrofins Environment Testing Australia Pty Ltd													y Ltd	Eurofins Environment Testing NZ Ltd					
	eurofin	S	ABN: 50 005 085 52	1										ABN: 91 05 0159 898			NZBN: 9429046024954						
web: w email:	ww.eurofins.com.au EnviroSales@eurofinsar	wiendoutine Gebelong Categoria 6 Monterey Road 19/8 Lewalan Street 179 Magowar Road Unit 1,2 Darde Dandenong South Grovedale Girraween Mitchell VIC 3175 VIC 3216 NSW 2145 ACT 2911 +61 3 8564 5000 +61 3 8564 5000 +61 2 900 8400 +61 2 6113 85 nz.com NATA# 1261 NATA# 1261 NATA# 1261 NATA# 1261 Site# 1254 Site# 25403 Site# 18217 Site# 25466				Street	1/21 Smallwood Place Murarrie QLD 4172 T: +61 7 3902 4600 NATA# 1261 Site# 20794 & 2780		Newc 1/2 Fr Mayfie NSW 2 +61 2 NATA# Site# 2	1/2 Frost Drive Mayfield West NSW 2304 +61 2 4968 8448 NATA# 1261 Site# 25079			h 8 Banks shpool 6106 8 6253 A# 2377 # 2370 8	sia Road 4444 ≰ 2554		Auc 35 C Pen Auc +64 IAN	kland D'Rorke Road rose, kland 1061 9 526 4551 Z# 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			
Cc Ac	ompany Name: Idress:	Qualte 2 Mur Mayfie NSW	est rray Dwyer Circ eld West 2304	cuit								Or Re Ph Fa	der N port # one: x:	o.: #:	1166792 02 4968 4468 02 4960 9775					Received: Due: Priority: Contact Name:	Dec 3, 2024 12:40 PM Dec 10, 2024 5 Day Emma Coleman		
Project Name: DSI - STATION LANE LOCHINVAR Project ID: NEW24P-0254																			Eurofi	ns Analytical Servi	ces Manager :	Andrew Black	
Sample Detail								Asbestos Absence /Presence*	CANCELLED*	HOLD*	pH (1:5 Aqueous extract at 25 °C as rec.)	Organochlorine Pesticides	Organochlorine Pesticides	Metals M8	Moisture Set	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	Eurofins Suite B7				
Mel	bourne Laborate	ory - N	IATA # 1261 S	ite # 1254							х	Х	х	Х	Х	Х	Х	Х	х				
Syd	ney Laboratory	- NAT	A # 1261 Site	# 18217			Х		Х	х		Х	х	х	х	Х		Х	x				
Мау	field West Labo	ratory	/ - NATA # 126	61 Site # 25079				Х															
41	BH07 0.5-0.6	Dec (02, 2024	Soil	N24-D	De0004178				Х													
42	SS1-8	Dec (02, 2024	Soil	N24-D	De0004179				Х													
43	SS3-5	Dec (02, 2024	Soil	N24-D	De0004180				Х													
44	T.2.12.24	Dec (02, 2024	Soil	N24-D	De0004181				Х													
45	ASB1	Dec (02, 2024	Buildin Materia	g N24-D als	De0004191		х															
46	BH03 0.5-0.6	Dec (02, 2024	Soil	N24-D	De0004232				Х													
47	D.2.12.24	Dec (02, 2024	Soil	N24-D	De0004233				Х													
48	BH05 0.1-0.2	Dec (02, 2024	Soil	N24-D	De0004234			Х														
Tes	t Counts						15	1	1	18	1	5	5	13	27	27	1	14	14				


Internal Quality Control Review and Glossary General

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

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

Units % w/w: F/fld F/mL g, kg g/kg L, mL L/min min	Percentage weight-for-weight basis, e.g. of asbestos in asbestos-containing finds in soil samples (% w/w) Airborne fibre filter loading as Fibres (N) per Fields counted (n) Airborne fibre reported concentration as Fibres per millilitre of air drawn over the sampler membrane (C) Mass, e.g. of whole sample (M) or asbestos-containing find within the sample (m) Concentration in grams per kilogram Volume, e.g. of air as measured in AFM (V = r x t) Airborne fibre sampling Flowrate as litres per minute of air drawn over the sampler membrane (r) Time (t), e.g. of air sample collection period
Calculations Airborne Fibre Concentration:	$C = \binom{A}{a} \times \binom{N}{n} \times \binom{1}{r} \times \binom{1}{t} = K \times \binom{N}{n} \times \binom{1}{v}$
Asbestos Content (as asbestos):	$\% w/w = \frac{(m \times P_A)}{M}$
Weighted Average (of asbestos):	$\mathscr{H}_{WA} = \sum \frac{(m \times P_A)_X}{x}$
Terms %asbestos	Estimated percentage of asbestos in a given matrix may be derived from knowledge or experience of the material, informed by HSG264 Appendix 2, else assumed to be 15% in accordance with WA DOH Appendix 2 (P _A). 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 of 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 oneo by nearing prior to analysis.
	Dispersion Statining. Fediningue required foi unequivocal identification of aboves index by FLW.
FA	Fiblow that 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, Asbestos: The Analysts Guide, 2 nd Edition (2021), ISBN: 9780616667079.
HSG264	UK HSE HSG264, Asbestos: The Survey Guide (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	Linit 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)].
	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
	Phase Contrast Microscopy. This is used for hore counting according to the MHM.
PLM	Polarised Light Microscopy. As used for Hibre 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	Omess outer was stated, Euronits are not responsible for sampling equipment of the sampling process.
Trace Analysis	Dempto Noconfic Autility.
	An analytical procedure is used to deter une presence on respirate nores (particularly asbestos) in a given sample matrix.
LIME	Unidentified Mineral Fibre Detected Fibrous minerals that are detected but have not been unequivocally identified by DLM 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, Guidelines for the Assessment, Remediation and Management of Asbestos- Contaminated Sites in Western Australia (updated 2021), including Appendix Four: Laboratory analysis
Weighted Average	Combined average %w/w asbestos content of all asbestos-containing finds in the given aliquot or total soil sample (%wA).



Comments

24-De0004138, 24-De0004144, 24-De0004145, 24-De0004147, 24-De0004149, 24-De0004150, 24-De0004153, 24-De0004155, 24-De0004157, 24-De0004157, 24-De0004159 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:

Laxman Dias	Senior Analyst-Asbestos
Anita Weinberg	Senior Analyst-Asbestos

Authorised by:

Sayeed Abu Bryce Keegan

Senior Analyst-Asbestos 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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Qualtest 2 Murray Dwyer Circuit Mayfield West NSW 2304

Emma Coleman

Report Project name Project ID Received Date

Attention:

1166792-S DSI - STATION LANE LOCHINVAR NEW24P-0254 Dec 03, 2024

Client Sample ID			BH01 0.0-0.1	BH06 0.15-0.25	SS1-1	SS1-2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N24- De0004138	N24- De0004139	N24- De0004140	N24- De0004141
Date Sampled			Dec 02, 2024	Dec 02, 2024	Dec 02, 2024	Dec 02, 2024
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fract	ions					
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	< 50	-
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 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	%	68	91	91	-
Total Recoverable Hydrocarbons - 2013 NEPM Fract	ions					
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	-
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	-



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.



Client Sample ID			BH01 0.0-0.1	BH06 0.15-0.25	SS1-1	SS1-2
Sample Matrix			Soil	Soil	Soil	Soil
			N24-	N24-	N24-	N24-
Eurofins Sample No.			De0004138	De0004139	De0004140	De0004141
Date Sampled			Dec 02, 2024	Dec 02, 2024	Dec 02, 2024	Dec 02, 2024
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
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	%	115	90	85	-
p-Terphenyl-d14 (surr.)	1	%	72	105	84	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	-	-
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	-	-
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	-	-
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	-	-
a-HCH	0.05	mg/kg	< 0.05	< 0.05	-	-
Aldrin	0.05	mg/kg	< 0.05	< 0.05	-	-
b-HCH	0.05	mg/kg	< 0.05	< 0.05	-	-
d-HCH	0.05	mg/kg	< 0.05	< 0.05	-	-
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	-	-
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	-	-
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	-	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	-	-
Endrin	0.05	mg/kg	< 0.05	< 0.05	-	-
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	-	-
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	-	-
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	-	-
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	-	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	-	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	-	-
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	-	-
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	-	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	-	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	-	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	-	-
	1	%	83	103	-	-
Tetrachioro-m-xylene (surr.)	1	%	112	98	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fract	ions					
IKH >C10-C16	50	mg/kg	< 50	< 50	< 50	-
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	-
	100	mg/kg	< 100	< 100	< 100	-
TRH >C10-C40 (total)"	100	тд/кд	< 100	< 100	< 100	-
	10	0/200	40			
Conductivity (1:5 aqueous extract at 25 °C as rec.)	10		43	-	-	-
Pri (1.5 Aqueous extract at 25 °C as rec.)	0.1		<i>d.1</i>	-	-	-
	0					
	2	mg/kg	3.3	2.0	11	3.8
Chaomium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Connor	5	mg/kg	00	53	30	30
	5	mg/kg	20		20	10
Leau	э	під/кд	02	1.1	01	וס



Client Sample ID			BH01 0.0-0.1	BH06 0.15-0.25	SS1-1	SS1-2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N24- De0004138	N24- De0004139	N24- De0004140	N24- De0004141
Date Sampled			Dec 02, 2024	Dec 02, 2024	Dec 02, 2024	Dec 02, 2024
Test/Reference	LOR	Unit				
Heavy Metals						
Mercury	0.1	mg/kg	0.4	< 0.1	0.2	0.2
Nickel	5	mg/kg	32	49	22	22
Zinc	5	mg/kg	33	33	85	81
Cation Exchange Capacity						
Cation Exchange Capacity	0.5	meq/100g	33	-	-	-
Sample Properties						
% Moisture	1	%	23	17	14	11

Client Sample ID			SS1-3	SS1-4	SS1-5	SS1-6
Sample Matrix			Soil	Soil	Soil	Soil
			N24-	N24-	N24-	N24-
Eurofins Sample No.			De0004142	De0004143	De0004144	De0004145
Date Sampled			Dec 02, 2024	Dec 02, 2024	Dec 02, 2024	Dec 02, 2024
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fract	ions					
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	< 50
TRH C10-C36 (Total)	50	mg/kg	-	< 50	< 50	< 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	%	-	109	89	109
Total Recoverable Hydrocarbons - 2013 NEPM Fract	ions					
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
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



Client Sample ID			SS1-3	SS1-4	SS1-5	SS1-6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N24- De0004142	N24- De0004143	N24- De0004144	N24- De0004145
Date Sampled			Dec 02, 2024	Dec 02, 2024	Dec 02, 2024	Dec 02, 2024
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Fluoranthene	0.5	mg/kg	-	< 0.5	1.2	< 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	0.7	< 0.5
Pyrene	0.5	mg/kg	-	< 0.5	1.1	< 0.5
Total PAH*	0.5	mg/kg	-	< 0.5	3.0	< 0.5
2-Fluorobiphenyl (surr.)	1	%	-	87	89	102
p-Terphenyl-d14 (surr.)	1	%	-	92	91	101
Total Recoverable Hydrocarbons - 2013 NEPM Fract	ions					
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
Heavy Metals						
Arsenic	2	mg/kg	5.4	4.1	5.0	3.6
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	46	34	43	41
Copper	5	mg/kg	24	20	24	32
Lead	5	mg/kg	75	120	40	160
Mercury	0.1	mg/kg	0.1	0.6	0.2	1.2
Nickel	5	mg/kg	29	20	33	41
Zinc	5	mg/kg	82	190	100	120
Sample Properties						
% Moisture	1	%	26	20	31	22

Client Sample ID			SS1-7	SS1-9	SS1-10	SS2-1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N24- De0004146	N24- De0004147	N24- De0004148	N24- De0004150
Date Sampled			Dec 02, 2024	Dec 02, 2024	Dec 02, 2024	Dec 02, 2024
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fract	ions					
TRH C6-C9	20	mg/kg	< 20	-	< 20	-
TRH C10-C14	20	mg/kg	< 20	-	< 20	-
TRH C15-C28	50	mg/kg	< 50	-	< 50	-
TRH C29-C36	50	mg/kg	< 50	-	< 50	-
TRH C10-C36 (Total)	50	mg/kg	< 50	-	< 50	-
втех						
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	-	113	-



Sample Matrix Soil Soil Soil	
N24- N24- N24- N24-	
Eurofins Sample No. De0004146 De0004147 De0004148 De000	4150
Date Sampled Dec 02, 2024 Dec 02, 2024 Dec 02, 2024 Dec 02, 2024	2, 2024
Test/Reference LOR Unit	
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 0.7 - < 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 0.7 - < 0.5	-
Total PAH* 0.5 mg/kg 1.4 - < 0.5	-
2-Fluorobiphenyl (surr.) 1 % 121 - 102	-
p-Terphenyl-d14 (surr.) 1 % 92 - 93	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	
TRH >C10-C16 50 mg/kg < 50 - < 50	-
TRH >C16-C34 100 mg/kg < 100 - < 100	-
TRH >C34-C40 100 mg/kg < 100 - < 100	-
TRH >C10-C40 (total)* 100 mg/kg < 100 - < 100	-
Heavy Metals	
Arsenic 2 mg/kg 4.2 3.9 3.6	7.3
Cadmium 0.4 mg/kg < 0.4 < 0.4 < 0.4	0.4
Chromium 5 mg/kg 40 34 37	58
Copper 5 mg/kg 31 27 26	33
Lead 5 mg/kg 81 35 160	130
Mercury 0.1 mg/kg < 0.1 < 0.1 0.8	0.2
Nickel 5 mg/kg 41 35 26	26
Zinc 5 mg/kg 280 110 110	200
Sample Properties	
% Moisture 1 % 11 14 26	33



Client Sample ID			SS2-2	SS2-3	SS2-4	SS2-5
Sample Matrix			Soil	Soil	Soil	Soil
			N24-	N24-	N24-	N24-
Eurofins Sample No.			De0004151	De0004152	De0004153	De0004154
Date Sampled			Dec 02, 2024	Dec 02, 2024	Dec 02, 2024	Dec 02, 2024
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fract	ions					
TRH C6-C9	20	mg/kg	-	-	< 20	< 20
TRH C10-C14	20	mg/kg	-	-	< 20	< 20
TRH C15-C28	50	mg/kg	-	-	< 50	< 50
TRH C29-C36	50	mg/kg	-	-	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	-	-	< 50	< 50
втех						
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	%	-	-	86	91
Total Recoverable Hydrocarbons - 2013 NEPM Fract	ions					
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	%	-	-	133	74
p-Terphenyl-d14 (surr.)	1	%	-	-	99	74
Total Recoverable Hydrocarbons - 2013 NEPM Fract	ions					
TRH >C10-C16	50	mg/kg	-	-	< 50	< 50
TRH >C16-C34	100	mg/kg	-	-	< 100	< 100
TRH >C34-C40	100	mg/kg	-	-	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	-	-	< 100	< 100



Client Sample ID Sample Matrix Eurofins Sample No. Date Sampled			SS2-2 Soil N24- De0004151 Dec 02, 2024	SS2-3 Soil N24- De0004152 Dec 02, 2024	SS2-4 Soil N24- De0004153 Dec 02, 2024	SS2-5 Soil N24- De0004154 Dec 02, 2024
	LOR	Unit				
Heavy Metals		1				
Arsenic	2	mg/kg	5.5	3.7	3.0	3.9
Cadmium	0.4	mg/kg	< 0.4	< 0.4	0.4	< 0.4
Chromium	5	mg/kg	20	39	34	34
Copper	5	mg/kg	16	29	20	30
Lead	5	mg/kg	63	58	42	150
Mercury	0.1	mg/kg	0.2	< 0.1	< 0.1	0.4
Nickel	5	mg/kg	9.5	23	22	21
Zinc	5	mg/kg	120	340	470	190
Sample Properties						
% Moisture	1	%	5.3	16	19	20

Client Sample ID			SS2-6	SS2-7	SS2-8	SS2-9
Sample Matrix			Soil	Soil	Soil	Soil
			N24-	N24-	N24-	N24-
Eurofins Sample No.			De0004155	De0004156	De0004157	De0004158
Date Sampled			Dec 02, 2024	Dec 02, 2024	Dec 02, 2024	Dec 02, 2024
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fract	ions					
TRH C6-C9	20	mg/kg	-	< 20	< 20	-
TRH C10-C14	20	mg/kg	-	< 20	< 20	-
TRH C15-C28	50	mg/kg	-	< 50	< 50	-
TRH C29-C36	50	mg/kg	-	< 50	< 50	-
TRH C10-C36 (Total)	50	mg/kg	-	< 50	< 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	%	-	81	96	-
Total Recoverable Hydrocarbons - 2013 NEPM Fract	ions					
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	-



Client Sample ID			SS2-6	SS2-7	SS2-8	SS2-9	
Sample Matrix			Soil	Soil	Soil	Soil	
			N24-	N24-	N24-	N24-	
Eurofins Sample No.			De0004155	De0004156	De0004157	De0004158	
Date Sampled			Dec 02, 2024	Dec 02, 2024	Dec 02, 2024	Dec 02, 2024	
Test/Reference	LOR	Unit					
Polycyclic Aromatic Hydrocarbons							
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	%	-	95	91	-	
p-Terphenyl-d14 (surr.)	1	%	-	101	102	-	
Organochlorine Pesticides							
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-	
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-	
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-	
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-	
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-	
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-	
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-	
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-	
Dieldrin	0.05	mg/kg	< 0.05	0.24	< 0.05	-	
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-	
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-	
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-	
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-	
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-	
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-	
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-	
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-	
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-	
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-	
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-	
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-	
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	0.24	< 0.05	-	
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-	
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	0.24	< 0.1	-	
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-	
Dibutylchlorendate (surr.)	1	%	100	119	118	-	
Tetrachloro-m-xylene (surr.)	1	%	99	100	96	-	
Total Recoverable Hydrocarbons - 2013 NEPM Fract	ions						
TRH >C10-C16	50	mg/kg	-	< 50	< 50	-	
TRH >C16-C34	100	mg/kg	-	< 100	< 100	-	
TRH >C34-C40	100	mg/kg	-	< 100	< 100	-	
TRH >C10-C40 (total)*	100	mg/kg	-	< 100	< 100	-	
Heavy Metals							
Arsenic	2	mg/kg	4.9	97	6.1	4.1	
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4	
Chromium	5	mg/kg	60	110	43	52	
Copper	5	mg/kg	26	110	27	30	



Client Sample ID			SS2-6	SS2-7	SS2-8	SS2-9
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N24- De0004155	N24- De0004156	N24- De0004157	N24- De0004158
Date Sampled			Dec 02, 2024	Dec 02, 2024	Dec 02, 2024	Dec 02, 2024
Test/Reference	LOR	Unit				
Heavy Metals						
Lead	5	mg/kg	130	520	150	310
Mercury	0.1	mg/kg	0.2	0.5	0.3	< 0.1
Nickel	5	mg/kg	38	38	26	33
Zinc	5	mg/kg	250	390	140	260
Sample Properties						
% Moisture	1	%	24	21	22	27

Client Sample ID			SS3-1	SS3-2	SS3-3	SS3-4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N24- De0004159	N24- De0004160	N24- De0004161	N24- De0004162
Date Sampled			Dec 02, 2024	Dec 02, 2024	Dec 02, 2024	Dec 02, 2024
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fract	ions					
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	%	-	-	82	-
Total Recoverable Hydrocarbons - 2013 NEPM Fract	ions					
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	-
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	-



Client Sample ID			SS3-1	SS3-2	SS3-3	SS3-4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofine Sample No			N24-	N24-	N24-	N24-
Date Sampled			Dec 02, 2024		De0004101	De0004102
Date Sampled			Dec 02, 2024	Dec 02, 2024	Dec 02, 2024	Dec 02, 2024
Test/Reference	LOR	Unit			-	
Polycyclic Aromatic Hydrocarbons		1				
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	%	-	-	95	-
p-Terphenyl-d14 (surr.)	1	%	-	-	112	-
Total Recoverable Hydrocarbons - 2013 NEPM Fract	ions					
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	2.7	6.6	6.1	4.0
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	69	73	51	45
Copper	5	mg/kg	21	34	24	16
Lead	5	mg/kg	14	170	31	18
Mercury	0.1	mg/kg	< 0.1	0.2	< 0.1	< 0.1
Nickel	5	mg/kg	63	47	30	28
Zinc	5	mg/kg	61	94	140	50
Sample Properties						
% Moisture	1	%	21	16	19	24

Client Sample ID			SS3-6	SS3-7	D1.2.12.24
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			N24- De0004163	N24- De0004164	N24- De0004165
Date Sampled			Dec 02, 2024	Dec 02, 2024	Dec 02, 2024
Test/Reference	LOR	Unit			
Total Recoverable Hydrocarbons - 1999 NEPM Fract	ions				
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
втех					
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	%	-	-	99



Client Sample ID			SS3-6	SS3-7	D1.2.12.24
Sample Matrix			Soil	Soil	Soil
			N24-	N24-	N24-
Eurofins Sample No.			De0004163	De0004164	De0004165
Date Sampled			Dec 02, 2024	Dec 02, 2024	Dec 02, 2024
Test/Reference	LOR	Unit		-	
Total Recoverable Hydrocarbons - 2013 NEPM Fract	ions				
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
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	%	-	-	71
p-Terphenyl-d14 (surr.)	1	%	-	-	99
Total Recoverable Hydrocarbons - 2013 NEPM Fract	ions				
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	3.4	5.0	12
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	21	72	33
Copper	5	mg/kg	13	30	20
Lead	5	mg/kg	24	53	79
Mercury	0.1	mg/kg	< 0.1	< 0.1	0.2
Nickel	5	mg/kg	13	47	24
Zinc	5	mg/kg	73	87	86
Sample Properties					
% Moisture	1	%	6.8	18	14



Sample History

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

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Dec 05, 2024	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Dec 05, 2024	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Dec 05, 2024	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Sydney	Dec 05, 2024	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Dec 05, 2024	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Metals M8	Sydney	Dec 05, 2024	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Organochlorine Pesticides	Sydney	Dec 05, 2024	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8270)			
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
pH (1:5 Aqueous extract at 25 °C as rec.)	Melbourne	Dec 04, 2024	7 Days
- Method: LTM-GEN-7090 pH in soil by ISE			
Conductivity (1:5 aqueous extract at 25 °C as rec.)	Melbourne	Dec 04, 2024	7 Days
- Method: LTM-INO-4030 Conductivity			
Cation Exchange Capacity	Melbourne	Dec 05, 2024	28 Days
- Method: LTM-MET-3060 Cation Exchange Capacity by bases & Exchangeable Sodium Percentage			
% Moisture	Sydney	Dec 03, 2024	14 Days
- Method: LTM-GEN-7080 Moisture			

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web: w email: I	ww.eurofinsanz.com	Melbourne 6 Monterey R Dandenong S VIC 3175 +61 3 8564 5 MATA# 1261 Site# 1254	Geelong toad 19/8 Lew South Grovedal VIC 3216 5000 +61 3 85 NATA# 1 Site# 254	ralan Street le 64 5000 261 403	Sydney 179 Magowar Road Girraween NSW 2145 +61 2 9900 8400 NATA# 1261 Site# 18217	Canberra Unit 1,2 Dacre Mitchell ACT 2911 +61 2 6113 80 NATA# 1261 Site# 25466	Street 91	Brisbane 1/21 Smallwood Place Murarrie QLD 4172 T: +61 7 3902 4600 NATA# 1261 Site# 20794 & 2780		od Place 4600 2780	Newc 1/2 Fr Mayfie NSW +61 2 NATAa Site#	astle ost Drive eld West 2304 4968 84 # 1261 25079	9 148	Peri 46-4 Wel WA +61 NAT Site	th 48 Banks shpool 6106 8 6253 7 A# 2377 # 2370 8	sia Road 4444 , ≩ 2554	I	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
Cc Ac	ompany Name: Idress:	Qualtest 2 Murray Dwye Mayfield West NSW 2304	er Circuit									Or Re Ph Fa	der N eport a ione: x:	o.: #:	116 02 4 02 4	6792 1968 4 1960 9	4468 9775			Received: Due: Priority: Contact Name:	Dec 3, 2024 Dec 10, 202 5 Day Emma Cole	12:40 PM 4 man
Pr Pr	oject Name: oject ID:	DSI - STATION NEW24P-0254	N LANE LOC	HINVAR															Eurofir	ns Analytical Servio	ces Manager :	Andrew Black
Sample Detail Melbourne Laboratory - NATA # 1261 Site # 1254								Asbestos Absence /Presence*	CANCELLED*	HOLD*	pH (1:5 Aqueous extract at 25 °C as rec.)	Organochlorine Pesticides	Organochlorine Pesticides	Metals M8	Moisture Set	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	Eurofins Suite B7			
Mell	bourne Laborate	ory - NATA # 12	261 Site # 12	254							Х	Х	X	Х	Х	X	Х	Х	x			
Syd	ney Laboratory	- NATA # 1261	Site # 18217	7			Х		Х	Х		Х	Х	х	Х	X		Х	x			
May	field West Labo	oratory - NATA	# 1261 Site	# 25079				Х														
Exte	ernal Laboratory	/	1																			
No	Sample ID	Sample Date	Sampling Time	Mat	rix L	AB ID																
1	BH01 0.0-0.1	Dec 02, 2024		Soil	N24-D	e0004138	Х				Х	Х			Х		Х	Х				
2	BH06 0.15- 0.25	Dec 02, 2024		Soil	N24-D	e0004139							х			x			х			
3	SS1-1	Dec 02, 2024		Soil	N24-D	e0004140	Х									Х			x			
4	SS1-2	Dec 02, 2024		Soil	N24-D	e0004141								Х		Х						
5	SS1-3	Dec 02, 2024		Soil	N24-D	e0004142	Х							Х		X						
6	SS1-4	Dec 02, 2024		Soil	N24-D	e0004143										Х			x			
7	SS1-5	Dec 02, 2024		Soil	N24-D	e0004144	Х									Х			x			
8	SS1-6	Dec 02, 2024		Soil	N24-D	e0004145	Х									х			x			
9	SS1-7	Dec 02, 2024		Soil	N24-D	e0004146										Х			x			
10	SS1-9	Dec 02, 2024		Soil	N24-D	e0004147	Х							Х		Х						
11	SS1-10	Dec 02, 2024		Soil	N24-D	e0004148										X			x			

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web: www.eurofinsanz.com email: EnviroSales@eurofins.c	Melbourn 6 Montere Dandenon VIC 3175 +61 3 856 tom NATA# 125 Site# 1254	e y Road g South 4 5000 S1	Geelong 19/8 Lewalan Street Grovedale VIC 3216 +61 3 8564 5000 NATA# 1261 Site# 25403	Sydney Canberra 179 Magowar Road Unit 1,2 Dacre Street Girraween Mitchell NSW 2145 ACT 2911 +61 2 9900 8400 +61 2 6113 8091 NATA# 1261 NATA# 1261 Site# 18217 Site# 25466		Street 91	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		Pert 46-4 Wels WA +61 NAT/ Site#	h 8 Banks shpool 6106 8 6253 4 A# 2377 ¥ 2370 8	ia Road 1444 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		
Company Name: Address:	Qualtest 2 Murray Dw Mayfield Wes NSW 2304	yer Cir st	cuit								Or Re Ph Fa	der Ne port # one: x:	0.: ¢:	116 02 4 02 4	6792 1968 4 1960 9	1468 9775			Received: Due: Priority: Contact Name:	Dec 3, 2024 Dec 10, 202 5 Day Emma Cole	12:40 PM 4 man
Project Name: Project ID:	DSI - STATIO NEW24P-02	ON LAI 54	NE LOCHINVAR															Eurofir	s Analytical Servio	ces Manager : /	Andrew Black
Sample Detail Melbourne Laboratory - NATA # 1261 Site # 1254						Asbestos - WA guidelines	Asbestos Absence /Presence*	CANCELLED*	HOLD*	pH (1:5 Aqueous extract at 25 °C as rec.)	Organochlorine Pesticides	Organochlorine Pesticides	Metals M8	Moisture Set	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	Eurofins Suite B7			
Melbourne Laborate	ory - NATA #	1261 \$	Site # 1254							х	Х	х	х	Х	Х	х	Х	Х			
Sydney Laboratory	- NATA # 126	51 Site	# 18217			х		Х	х		Х	х	х	х	х		Х	х			
Mayfield West Labo	oratory - NAT	A # 12	61 Site # 25079				Х														
12 SS1-11	Dec 02, 202	4	Soil	N24-D	e0004149	х															
13 SS2-1	Dec 02, 202	4	Soil	N24-D	e0004150	х							Х		х						
14 SS2-2	Dec 02, 2024	4	Soil	N24-D	e0004151	Х							Х		X						
15 SS2-3	Dec 02, 202	4	Soil	N24-D	e0004152	Х							Х		X						
16 SS2-4	Dec 02, 202	4	Soil	N24-D	e0004153	Х									X			X			
17 SS2-5	Dec 02, 202	4	Soil	N24-D	e0004154										X			X			
18 SS2-6	Dec 02, 202	4	Soil	N24-D	e0004155	Х						Х	Х		X						
19 SS2-7	Dec 02, 202	4	Soil	N24-D	e0004156	Х						Х			X			X			
20 SS2-8	Dec 02, 2024	4	Soil	N24-D	e0004157	Х					<u> </u>	Х			X			X			
21 SS2-9	Dec 02, 2024	4	Soil	N24-D	e0004158						<u> </u>		Х		X						
22 SS3-1	Dec 02, 2024	4	Soil	N24-D	e0004159	Х					<u> </u>		Х		X						
23 SS3-2	Dec 02, 2024	4	Soil	N24-D	e0004160						<u> </u>		Х		Х						
24 SS3-3	Dec 02, 202	4	Soil	N24-D	e0004161				<u> </u>						X			X			
25 SS3-4	Dec 02, 202	4	Soil	N24-D	e0004162								Х		Х						
26 SS3-6	Dec 02, 202	4	Soil	N24-D	e0004163								Х		Х						

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web: www.eurofinsanz.com email: EnviroSales@eurofins.co	Mell 6 Me Dan VIC +61 com NAT. Site	bourne onterey Road idenong South 3175 3 8564 5000 'A# 1261 # 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 Mitchell ACT 2911 +61 2 6113 80 NATA# 1261 Site# 25466	Street 91	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		Pert 46-4 Wels WA +61 NAT/ Site	h 8 Banks shpool 6106 8 6253 4 A# 2377 # 2370 8	ia Road 4444 42554		Aucl 35 O Penr Auck +64 S IANZ	land Rorke Road ose, land 1061 ∂ 526 4551 # 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		
Company Name: Address:	Qualtest 2 Murray Mayfield NSW 23	v Dwyer Circ West 04	cuit								Ore Re Ph Fai	der Ne port # one: x:	o.: #:	116 02 4 02 4	6792 1968 4 1960 9	468 9775			Received: Due: Priority: Contact Name:	Dec 3, 2024 Dec 10, 202 5 Day Emma Cole	. 12:40 PM !4 man
Project Name: Project ID:	DSI - ST NEW24F	ATION LAN P-0254	IE LOCHINVAR															Eurofir	s Analytical Servio	ces Manager :	Andrew Black
Sample Detail Melbourne Laboratory - NATA # 1261 Site # 1254							Asbestos Absence /Presence*	CANCELLED*	HOLD*	pH (1:5 Aqueous extract at 25 °C as rec.)	Organochlorine Pesticides	Organochlorine Pesticides	Metals M8	Moisture Set	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	Eurofins Suite B7			
Melbourne Laborat	ory - NAT	A # 1261 S	ite # 1254							х	х	Х	Х	Х	х	Х	х	х			
Sydney Laboratory	• - NATA #	# 1261 Site	# 18217			х		Х	Х		Х	Х	Х	Х	Х		х	х			
Mayfield West Labo	oratory - N	NATA # 126	1 Site # 25079				X														
27 SS3-7	Dec 02,	2024	Soil	N24-D	e0004164								Х		X						
28 D1.2.12.24	Dec 02,	2024	Soil	N24-D	e0004165										X			X			
29 BH01 0.5-0.6	Dec 02,	2024	Soil	N24-D	e0004166				Х												
30 BH01 0.9-1.0 31 BH01 1.15- 1.25	Dec 02, Dec 02,	2024 2024	Soil Soil	N24-D N24-D	e0004167 e0004168				x x												
32 BH02 0.0-0.1	Dec 02,	2024	Soil	N24-D	e0004169				Х												
33 BH02 0.5-0.6	Dec 02,	2024	Soil	N24-D	e0004170				Х												
34 BH02 0.8-0.9	Dec 02,	2024	Soil	N24-D	e0004171				х												
35 BH03 0.0-0.1	Dec 02,	2024	Soil	N24-D	e0004172				х												
36 BH03 0.4-0.5	Dec 02,	2024	Soil	N24-D	e0004173				х												
37 BH04 0.0-0.1	Dec 02,	2024	Soil	N24-D	e0004174				Х												
38 BH05 0.0-0.1	Dec 02,	2024	Soil	N24-D	e0004175				Х												
39 BH06 0.0-0.15	Dec 02,	2024	Soil	N24-D	e0004176				Х												
40 BH07 0.0-0.1	Dec 02,	2024	Soil	N24-D	e0004177				Х												

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web: ww email: E	ww.eurofinsanz.com	om N	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 Mitchell ACT 2911 +61 2 6113 80 NATA# 1261 Site# 25466	9 Street	Brisb 1/21 S Murar QLD T: +61 NATA Site# 3	ane Smallwoo rie 4172 7 3902 # 1261 20794 &	od Place 4600 2780	Newca 1/2 Fro Mayfie NSW 2 +61 2 NATA# Site# 2	astle ost Drive Id West 2304 4968 84 1261 25079	48	Pert 46-4 Wels WA +61 NAT/ Site	h 8 Banks shpool 6106 8 6253 4 A# 2377 ¢ 2370 &	ia Road 1444 12554	_	Auc 35 C Pen Aucl +64 IAN	kland o'Rorke Roa rose, kland 1061 9 526 4551 2# 1327	Auckland (Focus) ad 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
Co Ad	mpany Name: dress:	Qualte 2 Murr Mayfie NSW 2	est ray Dwyer Circ eld West 2304	cuit								Ore Re Ph Fa	der Ne port # one: k:	0.: ¢:	116 02 4 02 4	6792 1968 4 1960 9	468 9775			Received: Due: Priority: Contact Name:	Dec 3, 2024 Dec 10, 202 5 Day Emma Cole	12:40 PM 4 man
Pro Pro	oject Name: oject ID:	DSI - S NEW2	STATION LAN 24P-0254	IE LOCHINVAR	8														Euro	fins Analytical Servio	ces Manager :	Andrew Black
Sample Detail Melbourne Laboratory - NATA # 1261 Site # 1254								Asbestos Absence /Presence*	CANCELLED*	HOLD*	pH (1:5 Aqueous extract at 25 °C as rec.)	Organochlorine Pesticides	Organochlorine Pesticides	Metals M8	Moisture Set	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	Eurofins Suite B7			
Melb	ourne Laborate	ory - N/	ATA # 1261 S	ite # 1254							Х	х	Х	Х	Х	х	х	х	Х			
Sydr	ney Laboratory	- NATA	A # 1261 Site	# 18217			X		Х	Х		Х	Х	Х	Х	Х		Х	X			
May	field West Labo	ratory	- NATA # 126	51 Site # 25079				X														
41	BH07 0.5-0.6	Dec 0	2, 2024	Soil	N24-E	e0004178				Х												
42	SS1-8	Dec 0	2, 2024	Soil	N24-E	e0004179				Х												
43	SS3-5	Dec 0	2, 2024	Soil	N24-E	e0004180				Х												
44	T.2.12.24	Dec 0	2, 2024	Soil	N24-E	e0004181				Х												
45	ASB1	Dec 0	2, 2024	Buildin Materia	g N24-D als	e0004191		x														
46	BH03 0.5-0.6	Dec 0	2, 2024	Soil	N24-E	e0004232	-			Х												
47	D.2.12.24	Dec 0	2, 2024	Soil	N24-E	e0004233				Х												
48	BH05 0.1-0.2	Dec 0	2, 2024	Soil	N24-E	e0004234			Х													
Test	Counts						15	1	1	18	1	5	5	13	27	27	1	14	14			



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

I Inite

••••••	
APHA	American Public Health Association
CEC	Cation Exchange Capacity
сос	Chain of Custody
СР	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.
твто	Tributyltin oxide (bis-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					
Cation Exchange Capacity					
Cation Exchange Capacity	meq/100g	< 0.5	0.5	Pass	
Method Blank					
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					
TRH C6-C9	mg/kg	< 20	20	Pass	
Method Blank					
втех					
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					
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					
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					
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	
Method Blank Organochlorine Pesticides Organochlorine Pesticides 0.1 Chlordanes - Total mg/kg < 0.1	
Organochlorine Pesticides mg/kg < 0.1 Pass	
Chlordanes - Total mg/kg < 0.1 0.1 Pass	
4.4'-DDD mg/kg < 0.05 Pass	
4.4'-DDE mg/kg < 0.05 0.05 Pass	
4.4'-DDT mg/kg < 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 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	
a-HCH (Lindane) ma/kg < 0.05 Pass	
Heptachlor mg/kg < 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	
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	
TRH >C10-C16 mg/kg < 50 50 Pass	
TRH >C16-C34 mg/kg < 100 Pass	
TRH >C34-C40 mg/kg < 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 Factor	
Method Blank	
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	
TRH >C10-C16 mg/kg < 50 50 Pass	
TRH >C16-C34 mg/kg < 100 Pass	
TRH >C34-C40 mg/kg < 100 Pass	
I CS - % Recovery	
Conductivity (1:5 aqueous extract at 25 °C as rec.) % 97 70-130 Pass	
I CS - % Recovery	
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	
TRH C6-C9 % 96 70-130 Pass	
I CS - % Recovery	
BTEX	
Benzene % 87 70-130 Pass	
Toluene % 92 70-130 Pass	
Fibility 70 62 70 100 1d33 Ethylhenzene % 96 70-130 Pass	
m&n-Xylenes % 100 70-130 Page	
Number 70 100 70-130 FdSS Xylenes - Total* % QQ 70-130 Page	
1 CS - % Recovery	
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	
Naphthalene % 92 70-130 Pass	



Test	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
TRH C6-C10	%	96		70-130	Pass	
LCS - % Recovery						
Organochlorine Pesticides						
a-HCH	%	94		70-130	Pass	
g-HCH (Lindane)	%	82		70-130	Pass	
LCS - % Recovery						
Heavy Metals						
Arsenic	%	101		80-120	Pass	
Cadmium	%	106		80-120	Pass	
Chromium	%	105		80-120	Pass	
Copper	%	107		80-120	Pass	
Lead	%	104		80-120	Pass	
Mercury	%	106		80-120	Pass	
Nickel	%	105		80-120	Pass	
Zinc	%	108		80-120	Pass	
LCS - % Recovery			н I			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C10-C14	%	87		70-130	Pass	
LCS - % Recovery	, .		I I	1		
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	%	81		70-130	Pass	
Acenaphthylene	%	101		70-130	Pass	
Anthracene	%	98		70-130	Pass	
Benz(a)anthracene	%	92		70-130	Pass	
Benzo(a)pyrene	%	96		70-130	Pass	
Benzo(b&i)fluoranthene	%	99		70-130	Pass	
Benzo(a, h, i)pervlene	%	76		70-130	Pass	
Benzo(k)fluoranthene	%	91		70-130	Pass	
Chrysene	%	95		70-130	Pass	
Dibenz(a h)anthracene	%	99		70-130	Pass	
Fluoranthene	%	93		70-130	Pass	
Fluorene	%	88		70-130	Pass	
Indeno(1,2,3-cd)pyrepe	%	96		70-130	Pass	
Nanhthalene	%	90		70-130	Pass	
Phenanthrene	%	98		70-130	Pass	
Pyrene	%	96		70-130	Pass	
LCS - % Recovery	70	00		10 100	1 400	
Organochlorine Pesticides				1		
Chlordanes - Total	%	90		70-130	Pass	
	%	101		70-130	Pass	
4 4'-DDF	%	91		70-130	Pass	
4 4'-DDT	%	102		70-130	Pass	
Aldrin	%	87		70-130	Pass	
h-HCH	%	07		70-130	Pass	
снсн	%	01 01		70-130	Pass	
Dieldrin	%	88		70-130	Pass	
Endosulfan I	%	90		70-130	Pase	
Endosulfan II	70 0/2	02		70-130	Dass	
Endosulfan sulphate	/0 %	81 81		70-130	Pace	
Endrin	0/_	01		70-130	Pass	
	/0	70		70-130	Dace	
	/0	10		70-130	Page	
	/0	90		70-130	Pace	
Hentachlor enovide	/0 0/_	94 Q/		70-130	Pass	
	/0	04		10-130	1 033	



Test			Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Hexachlorobenzene			%	90		70-130	Pass	
Methoxychlor			%	118		70-130	Pass	
LCS - % Recovery								
Total Recoverable Hydrocarbons -	2013 NEPM Fract	ions						
TRH >C10-C16			%	83		70-130	Pass	
LCS - % Recovery								
Total Recoverable Hydrocarbons -	1999 NEPM Fract	ions						
TRH C10-C14			%	110		70-130	Pass	
LCS - % Recovery				1		1	-	
Total Recoverable Hydrocarbons -	2013 NEPM Fract	ions						
TRH >C10-C16	1		%	103		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 Fract	ions		Result 1				
TRH C6-C9	S24-No0084531	NCP	%	86		70-130	Pass	
TRH C10-C14	S24-No0085446	NCP	%	92		70-130	Pass	
Spike - % Recovery				-				
BTEX				Result 1				
Benzene	S24-No0084531	NCP	%	85		70-130	Pass	
Toluene	S24-No0084531	NCP	%	91		70-130	Pass	
Ethylbenzene	S24-No0084531	NCP	%	90		70-130	Pass	
m&p-Xylenes	S24-No0084531	NCP	%	93		70-130	Pass	
o-Xylene	S24-No0084531	NCP	%	90		70-130	Pass	
Xylenes - Total*	S24-No0084531	NCP	%	92		70-130	Pass	
Spike - % Recovery				1	1	1	-	
Total Recoverable Hydrocarbons -	2013 NEPM Fract	ions		Result 1				
Naphthalene	S24-No0084531	NCP	%	85		70-130	Pass	
TRH C6-C10	S24-No0084531	NCP	%	88		70-130	Pass	
Spike - % Recovery				I		1		
Polycyclic Aromatic Hydrocarbons	S			Result 1			_	
Acenaphthene	S24-De0004894	NCP	%	80		70-130	Pass	
Acenaphthylene	S24-De0004894	NCP	%	79		70-130	Pass	
Anthracene	S24-De0004894	NCP	%	95		70-130	Pass	
Benz(a)anthracene	S24-De0004894	NCP	%	79		70-130	Pass	
Benzo(a)pyrene	S24-De0004894	NCP	%	100		70-130	Pass	
Benzo(b&j)fluorantnene	S24-De0004894	NCP	%	85		70-130	Pass	
Benzo(g.n.i)perviene	S24-De0004894	NCP	%	89		70-130	Pass	
Chrysons	S24-De0004694		-70 0/	90		70-130	Pass	
Dibonz(a b)anthracono	S24-De0004694			00		 70-130	Pass	
Fluoranthene	S24-De0004894		/0 0/_	70		70-130	Pass	
Fluorene	S24-De0004894	NCP	%	86		 70-130	Pass	
Indepo(1.2.3-cd)pyrepe	S24-De0004894	NCP	%	84		70-130	Pass	
Naphthalene	S24-De0004894	NCP	%	86		70-130	Pass	
Phenanthrene	S24-De0002752	NCP	%	87		70-130	Pass	
Pyrene	S24-De0004894	NCP	%	77		70-130	Pass	
Spike - % Recovery				· · · ·	·	 		
Organochlorine Pesticides				Result 1				
Chlordanes - Total	S24-De0004894	NCP	%	103		70-130	Pass	
4.4'-DDD	S24-De0004894	NCP	%	80		 70-130	Pass	
4.4'-DDE	S24-De0004894	NCP	%	88		70-130	Pass	
4.4'-DDT	S24-De0004894	NCP	%	85		 70-130	Pass	
a-HCH	S24-De0002752	NCP	%	115		 70-130	Pass	
Aldrin	S24-De0004894	NCP	%	85		 70-130	Pass	



b-HCH S24-De0002752 NCP % 89 70-130 Pass d-HCH S24-De0004894 NCP % 77 70-130 Pass Dieldrin S24-De0004894 NCP % 87 70-130 Pass Endosulfan I S24-De0004894 NCP % 87 70-130 Pass Endosulfan I S24-De0004894 NCP % 93 70-130 Pass Endosulfan I S24-De0004894 NCP % 88 70-130 Pass Endosulfan II S24-De0004894 NCP % 88 70-130 Pass Endosulfan sulphate S24-De0002752 NCP % 88 70-130 Pass Endrin S24-De0002752 NCP % 90 70-130 Pass Endrin aldehyde S24-De0002752 NCP % 77 70-130 Pass Endrin ketone S24-De0004894 NCP % 73 70-130 Pass
d-HCH S24-De0004894 NCP % 77 70-130 Pass Dieldrin S24-De0004894 NCP % 87 70-130 Pass Endosulfan I S24-De0004894 NCP % 93 70-130 Pass Endosulfan I S24-De0004894 NCP % 93 70-130 Pass Endosulfan II S24-De0004894 NCP % 88 70-130 Pass Endosulfan sulphate S24-De0002752 NCP % 88 70-130 Pass Endrin S24-De0002752 NCP % 88 70-130 Pass Endrin S24-De0002752 NCP % 88 70-130 Pass Endrin aldehyde S24-De0002752 NCP % 77 70-130 Pass Endrin ketone S24-De0004894 NCP % 73 70-130 Pass
Dieldrin S24-De0004894 NCP % 87 70-130 Pass Endosulfan I S24-De0004894 NCP % 93 70-130 Pass Endosulfan I S24-De0004894 NCP % 88 70-130 Pass Endosulfan II S24-De0004894 NCP % 88 70-130 Pass Endosulfan sulphate S24-De0002752 NCP % 88 70-130 Pass Endrin S24-De0004894 NCP % 90 70-130 Pass Endrin S24-De0002752 NCP % 88 70-130 Pass Endrin aldehyde S24-De0002752 NCP % 77 70-130 Pass Endrin ketone S24-De0004894 NCP % 73 70-130 Pass
Endosulfan I S24-De0004894 NCP % 93 70-130 Pass Endosulfan II S24-De0004894 NCP % 88 70-130 Pass Endosulfan II S24-De0002752 NCP % 88 70-130 Pass Endosulfan sulphate S24-De0002752 NCP % 88 70-130 Pass Endrin S24-De0004894 NCP % 90 70-130 Pass Endrin S24-De0002752 NCP % 77 70-130 Pass Endrin aldehyde S24-De0002752 NCP % 77 70-130 Pass Endrin ketone S24-De0004894 NCP % 73 70-130 Pass
Endosulfan II S24-De0004894 NCP % 88 70-130 Pass Endosulfan sulphate S24-De0002752 NCP % 88 70-130 Pass Endrin S24-De0004894 NCP % 90 70-130 Pass Endrin S24-De0004894 NCP % 90 70-130 Pass Endrin aldehyde S24-De0002752 NCP % 77 70-130 Pass Endrin ketone S24-De0004894 NCP % 73 70-130 Pass
Endosulfan sulphate S24-De0002752 NCP % 88 70-130 Pass Endrin S24-De0004894 NCP % 90 70-130 Pass Endrin aldehyde S24-De0002752 NCP % 77 70-130 Pass Endrin ketone S24-De0002752 NCP % 73 70-130 Pass
Endrin S24-De0004894 NCP % 90 70-130 Pass Endrin aldehyde S24-De0002752 NCP % 77 70-130 Pass Endrin ketone S24-De0004894 NCP % 73 70-130 Pass
Endrin aldehyde S24-De0002752 NCP % 77 70-130 Pass Endrin ketone S24-De0004894 NCP % 73 70-130 Pass
Endrin ketone S24-De0004894 NCP % 73 70-130 Pass
a-HCH (Lindane) S24-De0002752 NCP % 103 70-130 Pass
Heptachlor S24-De0004894 NCP % 103 70-130 Pass
Heptachlor epoxide S24-De0004894 NCP % 101 70-130 Pass
Hexachlorobenzene S24-De0004894 NCP % 93 70-130 Pass
Methoxychlor S24-De0004894 NCP % 93 70-130 Pass
Spike - % Recovery
Total Recoverable Hydrocarbons - 2013 NFPM Fractions Result 1
TRH >C10-C16 S24-No0085446 NCP % 88 70-130 Pass
Snike - % Recovery
Heavy Metals Result 1
Arsenic R24-De0006962 NCP % 93 75-125 Pass
Cadmium R24-De0006962 NCP % 95 75-125 Pass
Chromium R24-De0006962 NCP % 101 75-125 Pass
Copper R24-De0006962 NCP % 98 75-125 Pass
Lead R24-De0006962 NCP % 95 75-125 Pass
Mercury R24-De0006962 NCP % 104 75-125 Pass
Nickel R24-De0006962 NCP % 96 75-125 Pass
Tip R24-De0006962 NCP % 108 75-125 Pass
Test Leb Semple ID QA Linite Desuit 1 Acceptance Pass Qualifying
Lab Sample ID Source Onits Result I Limits Limits Code
Duplicate
Result 1 Result 2 RPD
Conductivity (1:5 aqueous extract at 25 °C as rec.)M24-No0072162NCPuS/cm42471330%Pass
pH (1:5 Aqueous extract at 25 °C as rec.) M24-No0072162 NCP pH Units 8.1 8.0 pass 30% Pass
Duplicate
Cation Exchange Capacity Result 1 Result 2 RPD
Cation Exchange Capacity N24-De0004138 CP meq/100g 33 33 1.0 30% Pass
Duplicate
Polycyclic Aromatic Hydrocarbons Result 1 Result 2 RPD
Acenaphthene S24-De0004898 NCP mg/kg < 0.5 < 1 30% Pass
Acenaphthylene S24-De0004898 NCP mg/kg < 0.5 < 1 30% Pass
Anthracene S24-De0004898 NCP mg/kg < 0.5 < 1 30% Pass
Benz(a)anthracene S24-De0004898 NCP mg/kg < 0.5 < 1 30% Pass
Benzo(a)pyrene S24-De0004898 NCP mg/kg < 0.5 < 1 30% Pass
Benzo(b&j)fluoranthene S24-De0004898 NCP mg/kg < 0.5 < 1 30% Pass
Benzo(g.h.i)perylene S24-De0004898 NCP mg/kg < 0.5 < 0.5 < 1 30% Pass
Benzo(k)fluoranthene S24-De0004898 NCP mg/kg < 0.5 < 1 30% Pass
Chrysene S24-De0004898 NCP mg/kg < 0.5 < 1 30% Pass
Dibenz(a.h)anthracene S24-De0004898 NCP mg/kg < 0.5 < 1 30% Pass
Fluoranthene S24-De0004898 NCP mg/kg 0.5 < 0.5 5.0 30% Pass
Fluorene S24-De0004898 NCP mg/kg < 0.5 < 0.5 < 1 30% Pass
Indeno(1.2.3-cd)pyrene S24-De0004898 NCP mg/kg < 0.5 < 0.5 <1 30% Pass
Naphthalene S24-De0004898 NCP mg/kg < 0.5 < 0.5 < 1 30% Pass
Phenanthrene S24-De0004898 NCP mg/kg < 0.5 < 0.5 < 1 30% Pass
Pyrene S24-De0004898 NCP mg/kg 0.6 0.5 8.0 30% Pass



Organochlorine Penticles Verter Reput 1 Result 2 RPD Image Image <th< th=""><th>Duplicate</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th></th<>	Duplicate									
Choloanes - Total S24-Depoldes NCP mg/kg < 0.01 < < 0.05 < < 1 30% Pass 44'-DDD S24-Depoldes NCP mg/kg < 0.05	Organochlorine Pesticides				Result 1	Result 2	RPD			
4.4-DDD S24-B000488 NCP mg/k < 0.06 < <1 30% Pass 4.4-DDT S24-B000488 NCP mg/k < 0.05	Chlordanes - Total	S24-De0004898	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
44-ODE S24-De004488 NCP mg/ng <0.05 <1 30% Pass Ad-ODT S24-De00488 NCP mg/ng <0.05	4.4'-DDD	S24-De0004898	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
44-IODT S24-De0002488 NCP mg/k < 0.005 < <1 30% Pass Aldrin S24-De00278 NCP mg/k < 0.05	4.4'-DDE	S24-De0004898	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
sHCH S24-be0003751 NCP mg/kg < 0.05 < <1 30% Pass Addin S24-be0004888 NCP mg/kg < 0.05	4.4'-DDT	S24-De0004898	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin S24-De0004888 NCP mg/kg < 0.05 < 0.05 < 0.1 30% Pass bHCH S24-De0004888 NCP mg/kg < 0.05	a-HCH	S24-De0002751	NCP	ma/ka	< 0.05	< 0.05	<1	30%	Pass	
bHCH S24-be0004888 NCP mgkg < 0.05 < 0.05 < 0.1 30% Pass cHCH S24-be0004898 NCP mgkg < 0.05	Aldrin	S24-De0004898	NCP	ma/ka	< 0.05	< 0.05	<1	30%	Pass	
d+ICH S24-De0004888 NCP mg/rg < 0.05 < 0.05 < 1 30% Pass Dieldrin S24-De0004888 NCP mg/rg < 0.05	b-HCH	S24-De0004898	NCP	ma/ka	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin S24-De0004898 NCP mg/kg < 0.05 < 1 30% Pass Endosulfan II S24-De0004898 NCP mg/kg < 0.05	d-HCH	S24-De0004898	NCP	ma/ka	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I S24-be0004898 NCP mg/kg < 0.05 < 0.05 < 1 30% Pass Endosulfan ulghate S24-be0004898 NCP mg/kg < 0.05	Dieldrin	S24-De0004898	NCP	ma/ka	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II S24-beo004898 NCP mgkg < 0.05 < 1 30% Pass Endosulfan sulphate S24-beo004898 NCP mgkg < 0.05	Endosulfan I	S24-De0004898	NCP	ma/ka	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate S24-De0004898 NCP mg/kg < 0.05 < 0.05 < 1 30% Pass Endrin S24-De0004898 NCP mg/kg < 0.05	Endosulfan II	S24-De0004898	NCP	ma/ka	< 0.05	< 0.05	<1	30%	Pass	
Endrin S24-De000488 NCP mg/kg < 0.05 < 1 30% Pass Endrin ladehyde S24-De0004888 NCP mg/kg < 0.05	Endosulfan sulphate	S24-De0004898	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde S24-De0004888 NCP mg/kg < 0.05 < 1 30% Pass Endrin ketone S24-De0004888 NCP mg/kg < 0.05	Endrin	S24-De0004898	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endmin ketone S24-De0004898 NCP mg/kg < 0.05 < 1 30% Pass g+HCH (Lindane) S24-De0002751 NCP mg/kg < 0.05	Endrin aldehvde	S24-De0004898	NCP	ma/ka	< 0.05	< 0.05	<1	30%	Pass	
g+ICH (Lindane) S24-De0002751 NCP mg/kg < 0.05 < 1 30% Pass Heptachlor epoxide S24-De0004898 NCP mg/kg < 0.05	Endrin ketone	S24-De0004898	NCP	ma/ka	< 0.05	< 0.05	<1	30%	Pass	
Beptachior S24-De0004888 NCP mg/kg < 0.05 < 1.05 < 1.05 Pass Heptachior epoxide S24-De0004888 NCP mg/kg < 0.05	g-HCH (Lindane)	S24-De0002751	NCP	ma/ka	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide S24-De0004888 NCP mg/kg < 0.05 < 0.1 30% Pass Hexachlorobenzene S24-De0004888 NCP mg/kg < 0.05	Heptachlor	S24-De0004898	NCP	ma/ka	< 0.05	< 0.05	<1	30%	Pass	
Hexachiorobenzene S24-De0004898 NCP mg/kg < 0.05 < 0.05 < 1 30% Pass Methoxychlor S24-De0004898 NCP mg/kg < 0.05	Heptachlor epoxide	S24-De0004898	NCP	ma/ka	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor S24-De0004888 NCP mg/kg < 0.05 < 0.15 < 1 30% Pass Toxaphene S24-De0004898 NCP mg/kg < 0.5	Hexachlorobenzene	S24-De0004898	NCP	ma/ka	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene S24-De0004898 NCP mg/kg < 0.5 < 1 30% Pass Duplicate Sample Properties N24-De0003861 NCP % 5.9 5.9 1.0 30% Pass Duplicate Result 1 Result 2 RPD Arsenic N24-De0004142 CP mg/kg 5.4 6.3 16 30% Pass Cadmium N24-De0004142 CP mg/kg 4.0.4 <.1	Methoxychlor	S24-De0004898	NCP	ma/ka	< 0.05	< 0.05	<1	30%	Pass	
Durplicate Description Other Orgence Other Other <td>Toxaphene</td> <td>S24-De0004898</td> <td>NCP</td> <td>ma/ka</td> <td>< 0.5</td> <td>< 0.5</td> <td><1</td> <td>30%</td> <td>Pass</td> <td></td>	Toxaphene	S24-De0004898	NCP	ma/ka	< 0.5	< 0.5	<1	30%	Pass	
Sample Properties N24-De000361 NCP % Moisture Result 1 Result 2 RPD New Duplicate	Duplicate								1	
% Moisture N24-De0003861 NCP % 5.9 5.9 1.0 30% Pass Duplicate Result 2 RPD Heavy Metals N24-De0004142 CP mg/kg 5.4 6.3 16 30% Pass Cadmium N24-De0004142 CP mg/kg 4.6 55 17 30% Pass Copper N24-De0004142 CP mg/kg 4.6 55 17 30% Pass Lead N24-De0004142 CP mg/kg 0.1 0.2 43 30% Fail Q02 Mickel N24-De0004142 CP mg/kg 29 36 22 30% Pass Licad N24-De0004142 CP mg/kg 28 130 46 30% Fail Q02 Diplicate Zinc N24-De0004154 CP mg/kg 2.0 2 2 30% Pass Diplicate	Sample Properties				Result 1	Result 2	RPD			
Duplicate Result 1 Result 2 RPD Result 2 Arsenic N24-De0004142 CP mg/kg 5.4 6.3 16 30% Pass Cadmium N24-De0004142 CP mg/kg 4.6 .55 17 30% Pass Chromium N24-De0004142 CP mg/kg 2.4 30 2.4 30% Pass Copper N24-De0004142 CP mg/kg 7.5 120 49 30% Fail Q02 Mercury N24-De0004142 CP mg/kg 0.1 0.2 43 30% Fail Q02 Mercury N24-De0004142 CP mg/kg 2.1 0.2 43 30% Fail Q02 Duplicate N24-De0004142 CP mg/kg 42 130 46 30% Fail Q02 Duplicate Total Recoverable Hydrocarbons - 1999 NEPM Fractions Result 1 Result 2 RPD Total Recoverable Hydrocarbons - 1999 NEPM Fractions	% Moisture	N24-De0003861	NCP	%	5.9	5.9	1.0	30%	Pass	
Heavy Metals Result 1 Result 1 Result 2 RPD Image: Constraint of the system	Duplicate		-							
Arsenic N24-De0004142 CP mg/kg 5.4 6.3 16 30% Pass Cadmium N24-De0004142 CP mg/kg <0.4	Heavy Metals				Result 1	Result 2	RPD			
Cadmium N24-De0004142 CP mg/kg <.0.4 <.1 30% Pass Chromium N24-De0004142 CP mg/kg 46 55 17 30% Pass Copper N24-De0004142 CP mg/kg 24 30 24 30% Pass Lead N24-De0004142 CP mg/kg 0.1 0.2 43 30% Fail Q02 Mercury N24-De0004142 CP mg/kg 29 36 22 30% Pass Nickel N24-De0004142 CP mg/kg 82 130 46 30% Fail Q02 Duplicate Total Recoverable Hydrocarbons - 1999 NEPM Fractions Result 1 Result 2 RPD Image: Compass	Arsenic	N24-De0004142	CP	ma/ka	5.4	6.3	16	30%	Pass	
Chromium N24-De0004142 CP mg/kg 46 55 17 30% Pass Copper N24-De0004142 CP mg/kg 24 30 24 30% Pass Lead N24-De0004142 CP mg/kg 75 120 49 30% Fail Q02 Mercury N24-De0004142 CP mg/kg 0.1 0.2 43 30% Fail Q15 Nickel N24-De0004142 CP mg/kg 29 36 22 30% Pass Zinc N24-De0004142 CP mg/kg 82 130 46 30% Fail Q02 Duplicate Total Recoverable Hydrocarbons - 1999 NEPM Fractions Result 1 Result 2 RPD	Cadmium	N24-De0004142	CP	ma/ka	< 0.4	< 0.4	<1	30%	Pass	
Copper N24-De0004142 CP mg/kg 24 30 24 30% Pass Lead N24-De0004142 CP mg/kg 75 120 49 30% Fail Q02 Mercury N24-De0004142 CP mg/kg 0.1 0.2 43 30% Fail Q15 Nickel N24-De0004142 CP mg/kg 29 36 22 30% Pass Zinc N24-De0004142 CP mg/kg 82 130 46 30% Fail Q02 Duplicate Total Recoverable Hydrocarbons - 1999 NEPM Fractions Result 1 Result 2 RPD Image: Comparity 2 130 46 30% Pass Duplicate Total Recoverable Hydrocarbons - 1999 NEPM Fractions Result 1 Result 2 RPD Image: Comparity 2 1 30% Pass 1 Duplicate Total Recoverable Hydrocarbons - 1999 NEPM Fractions Result 1 Result 2 RPD Image: Comparity 2 1 30% <t< td=""><td>Chromium</td><td>N24-De0004142</td><td>CP</td><td>ma/ka</td><td>46</td><td>55</td><td>17</td><td>30%</td><td>Pass</td><td></td></t<>	Chromium	N24-De0004142	CP	ma/ka	46	55	17	30%	Pass	
Lead N24-De0004142 CP mg/kg 75 120 49 30% Fail QQ2 Mercury N24-De0004142 CP mg/kg 0.1 0.2 43 30% Fail Q15 Nickel N24-De0004142 CP mg/kg 29 36 22 30% Pass Zinc N24-De0004142 CP mg/kg 82 130 46 30% Fail Q02 Duplicate Total Recoverable Hydrocarbons - 1999 NEPM Fractions Result 1 Result 2 RPD	Copper	N24-De0004142	CP	ma/ka	24	30	24	30%	Pass	
Mercury N24-De0004142 CP mg/kg 0.1 0.2 43 30% Fail Q15 Nickel N24-De0004142 CP mg/kg 29 36 22 30% Pass Zinc N24-De0004142 CP mg/kg 82 130 46 30% Fail Q02 Duplicate Total Recoverable Hydrocarbons - 1999 NEPM Fractions Result 1 Result 2 RPD C TRH C6-C9 N24-De0004154 CP mg/kg < 0.1	Lead	N24-De0004142	CP	ma/ka	75	120	49	30%	Fail	Q02
Nickel N24-De0004142 CP mg/kg 29 36 22 30% Pass Zinc N24-De0004142 CP mg/kg 82 130 46 30% Fail Q02 Duplicate	Mercury	N24-De0004142	СР	ma/ka	0.1	0.2	43	30%	Fail	Q15
Zinc N24-De0004142 CP mg/kg 82 130 46 30% Fail Q02 Duplicate Total Recoverable Hydrocarbons - 1999 NEPM Fractions Result 1 Result 2 RPD ////////////////////////////////////	Nickel	N24-De0004142	СР	ma/ka	29	36	22	30%	Pass	
Duplicate Result 1 Result 2 RPD Total Recoverable Hydrocarbons - 1999 NEPM Fractions Result 1 Result 2 RPD Image: Constraint of the second	Zinc	N24-De0004142	СР	ma/ka	82	130	46	30%	Fail	Q02
Total Recoverable Hydrocarbons - 1999 NEPM Fractions Result 1 Result 2 RPD Image: Control of the system of	Duplicate									
TRH C6-C9 N24-De0004154 CP mg/kg < 20 < 20 < 1 30% Pass Duplicate BTEX Result 1 Result 2 RPD Image: Constraint of the state of t	Total Recoverable Hydrocarbons -	1999 NEPM Fract	ions		Result 1	Result 2	RPD			
Duplicate Result 1 Result 2 RPD Image: Constraint of the system o	TRH C6-C9	N24-De0004154	CP	mg/kg	< 20	< 20	<1	30%	Pass	
BTEX Result 1 Result 2 RPD Image: constraint of the state state of the state of the state state of the state of the state	Duplicate									
Benzene N24-De0004154 CP mg/kg < 0.1 < 0.1 < 1 30% Pass Toluene N24-De0004154 CP mg/kg < 0.1	BTEX				Result 1	Result 2	RPD			
Toluene N24-De0004154 CP mg/kg < 0.1 < 0.1 < 1 30% Pass Ethylbenzene N24-De0004154 CP mg/kg < 0.1	Benzene	N24-De0004154	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene N24-De0004154 CP mg/kg < 0.1 < 1 30% Pass m&p-Xylenes N24-De0004154 CP mg/kg < 0.2	Toluene	N24-De0004154	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes N24-De0004154 CP mg/kg < 0.2 < 0.2 < 1 30% Pass o-Xylene N24-De0004154 CP mg/kg < 0.1	Ethylbenzene	N24-De0004154	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
o-Xylene N24-De0004154 CP mg/kg < 0.1 < 0.1 < 1 30% Pass Xylenes - Total* N24-De0004154 CP mg/kg < 0.3	m&p-Xylenes	N24-De0004154	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Xylenes - Total* N24-De0004154 CP mg/kg < 0.3 < 1 30% Pass Duplicate CP mg/kg < 0.3 < 0.3 < 1 30% Pass Total Recoverable Hydrocarbons - 2013 NEPM Fractors Result 1 Result 2 RPD Naphthalene N24-De0004154 CP mg/kg < 0.5 < 0.5 < 1 30% Pass TRH C6-C10 N24-De0004154 CP mg/kg < 20 < 20 < 1 30% Pass Duplicate N24-De0004154 CP mg/kg < 20 < 20 < 1 30% Pass TRH C6-C10 N24-De0004154 CP mg/kg < 20 < 20 < 1 30% Pass Duplicate Second Hydrocarbons - J99 NEPM Fractors Result 1 Result 2 RPD TRH C10-C14 N24-De0004161 CP mg/kg < 20 < 20 < 1 30% Pass TRH C15-C28 N24-De0004161	o-Xylene	N24-De0004154	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Duplicate Result 1 Result 2 RPD Result 2 Naphthalene N24-De0004154 CP mg/kg < 0.5	Xylenes - Total*	N24-De0004154	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Total Recoverable Hydrocarbons - 2013 NEPM Fractions Result 1 Result 2 RPD Image: Constraint of the system	Duplicate									
Naphthalene N24-De0004154 CP mg/kg < 0.5 < 0.5 < 1 30% Pass TRH C6-C10 N24-De0004154 CP mg/kg < 20	Total Recoverable Hydrocarbons - 2013 NEPM Fractions					Result 2	RPD			
TRH C6-C10 N24-De0004154 CP mg/kg < 20 < 20 < 1 30% Pass Duplicate Total Recoverable Hydrocarbons - 1999 NEPM Fractions TRH C10-C14 N24-De0004161 CP mg/kg < 20 < 20 < 1 30% Pass TRH C15-C28 N24-De0004161 CP mg/kg < 50 < 50 < 1 30% Pass TRH C29-C36 N24-De0004161 CP mg/kg < 50 < 50 < 1 30% Pass	Naphthalene	N24-De0004154	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate Total Recoverable Hydrocarbons - 1999 NEPM Fractions Result 1 Result 2 RPD Image: Colspan="6">Colspan="6">Colspan="6">Colspan="6">Colspan="6">Colspan="6">Colspan="6">Colspan="6"Col	TRH C6-C10	N24-De0004154	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Total Recoverable Hydrocarbons - 1999 NEPM Fractions Result 1 Result 2 RPD Image: Constraint of the state of	Duplicate									
TRH C10-C14 N24-De0004161 CP mg/kg < 20 < 20 < 1 30% Pass TRH C15-C28 N24-De0004161 CP mg/kg < 50	Total Recoverable Hydrocarbons -	1999 NEPM Fract	ions		Result 1	Result 2	RPD			
TRH C15-C28 N24-De0004161 CP mg/kg < 50 < 1 30% Pass TRH C29-C36 N24-De0004161 CP mg/kg < 50	TRH C10-C14	N24-De0004161	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C29-C36 N24-De0004161 CP ma/kg < 50 < 50 < 1 30% Pass	TRH C15-C28	N24-De0004161	СР	mg/kg	< 50	< 50	<1	30%	Pass	
	TRH C29-C36	N24-De0004161	CP	mg/kg	< 50	< 50	<1	30%	Pass	



Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			Result 1	Result 2	RPD				
TRH >C10-C16	N24-De0004161	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	N24-De0004161	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	N24-De0004161	CP	mg/kg	< 100	< 100	<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
Q02	The duplicate %RPD is outside the recommended acceptance criteria. Further analysis indicates sample heterogeneity as the cause
045	The DDD second descent Destination of Testinate O. Assertance Original and the lateral Overlag Destination of Observations of this second

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:

Andrew Black	Analytical Services Manager
Carroll Lee	Senior Analyst-Organic
Edward Lee	Senior Analyst-Organic
Emily Rosenberg	Senior Analyst-Metal
Joseph Edouard	Senior Analyst-Volatile
_uke Holt	Senior Analyst-Inorganic
Mary Makarios	Senior Analyst-Metal
Mary Makarios	Senior Analyst-Sample Properties
Mickael Ros	Senior Analyst-Metal
Roopesh Rangarajan	Senior Analyst-Organic
Roopesh Rangarajan	Senior Analyst-Sample Properties
Roopesh Rangarajan	Senior Analyst-Volatile
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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