
Detailed Contamination Assessment

39, 39A and 41 Brocklesby
Road, Medowie NSW

NEW23P-0009-AB
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Executive Summary

Qualtest Laboratory NSW Pty Ltd (Qualtest) has carried out a Detailed Contamination Assessment (DCA) for McCloy Project Management Pty Ltd (McCloy), for the site located at 39, 39A and 41 Brocklesby Road, Medowie NSW (the Site). The site location is shown on Figure 1, Appendix A.

The site comprises Lot 2 DP508780, Lot 300 DP625002 and Lot 301 DP625002 and is about 5.1ha in area. The site is currently zoned RU2 Rural Landscape and is proposed to be rezoned to R2 – Low Density Residential.

Qualtest completed a Preliminary Contamination Assessment (PCA) on the site, ref: NEW23P-0009-AAv1, dated 8 February 2023 (Qualtest, 2023). The PCA identified five Areas of Environmental Concern (AECs) for the site relating to: 1. Current and former buildings across the site; 2. Filling and stockpiling on the site; 3. Storage of equipment/waste materials; 4. Septic tanks/effluent disposal; and, 5. Former cropping/orchards.

The Preliminary Conceptual Site Model (CSM) indicated that there was a potential for soil and surface water contamination, to exist on the site and potentially complete exposure pathways could exist to current and future site users and the environment. Based on this, it was recommended that a Detailed Contamination Assessment was carried out.

The purpose of this DCA was to support the DA submission to Port Stephens Council (Council) as part of the rezoning application.

The objectives of the DCA were to:

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

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

- Collection of soil samples from 20 test pit locations, and 54 surface soil locations;
- Laboratory analysis of soil samples for identified contaminants of potential concern; and,
- Data assessment and preparation of this Detailed Contamination Assessment Report.

Based on the results of the Detailed Contamination Assessment it is considered the site can be made suitable for the proposed re zoning, with the following recommendations:

- If the septic/infiltration area is proposed to be decommissioned on Lot 301, the septic tank and effluent disposal area will require decommissioning in accordance with relevant guidelines and the area assessed, prior to the proposed development.
- Management of SP1 (20m³), located in the south eastern portion of Lot 301 (39 Brocklesby Road), including:
 - Preparation of an Asbestos management plan (AMP), and placement of SP1 below surface soils, Qualtest recommends placement at depths greater than 0.5m below final site surface levels; or

- Preparation of an Asbestos Removal Plan (ARP) and disposal of SP1 offsite in accordance with the NSW EPA (2014) Waste Classification Guidelines.
- Removal of waste materials for aesthetic purposes and disposal offsite in accordance with the NSW EPA (2014) Waste Classification Guidelines; and/or
- Hazardous materials in buildings (if any) are removed in accordance with relevant laws and guidelines, and clearances provided by appropriately qualified and licensed person/consultant; and,
- An unexpected find procedure is developed and included in the Construction Environmental Management Plan for the subdivision works.

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 residential subdivision.

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).

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Figure 2 – Lot Location Plan

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Figure 4B – Sample Locations – Eastern Portion

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

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1.0 Introduction

Qualtest Laboratory NSW Pty Ltd (Qualtest) has carried out a Detailed Contamination Assessment (DCA) for McCloy Project Management Pty Ltd (McCloy), for the site located at 39, 39A and 41 Brocklesby Road, Medowie NSW (the Site). The site location is shown on Figure 1, Appendix A.

The site comprises Lot 2 DP508780, Lot 300 DP625002 and Lot 301 DP625002 and is about 5.1ha in area. The site is currently zoned RU2 Rural Landscape and is proposed to be rezoned to R2 – Low Density Residential.

Qualtest completed a Preliminary Contamination Assessment (PCA) on the site, ref: NEW23P-0009-AAv1, dated 8 February 2023 (Qualtest, 2023). The PCA identified five Areas of Environmental Concern (AECs) for the site relating to: 1. Current and former buildings across the site; 2. Filling and stockpiling on the site; 3. Storage of equipment/waste materials; 4. Septic tanks/effluent disposal; and, 5. Former cropping/orchards.

The Preliminary Conceptual Site Model (CSM) indicated that there was a potential for soil and surface water contamination, to exist on the site and potentially complete exposure pathways could exist to current and future site users and the environment. Based on this, it was recommended that a Detailed Contamination Assessment was carried out.

The purpose of this DCA was to support the DA submission to Port Stephens Council (Council) as part of the rezoning application.

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

1.1 Objectives

The objectives of the DCA were to:

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

1.2 Scope of Works

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

- Collection of soil samples from 20 test pit locations, and 54 surface soil locations;
- Laboratory analysis of soil samples for identified contaminants of potential concern; and,
- Data assessment and preparation of this Detailed Contamination Assessment Report.

2.0 Site Description

2.1 Site Identification

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

Table 2.1: Summary of Site Details

Site Address:	39, 39A and 41 Brocklesby Road, Medowie, NSW
Approximate site area and dimensions:	Approx. 5.1 ha Approx. 135m wide (north to south) by 365m long (east to west) at its widest and longest points
Title Identification Details:	Lot 2 DP508780, Lot 300 DP625002 and Lot 301 DP625002 within the Port Stephens local government area, Parish of Stowell, County of Gloucester
Current Zoning	RU2 Rural Landscape
Current Ownership:	Private Individuals and Brocklesby Road Pty Limited
Current Occupier:	Residential Landuse
Previous and Current Landuse:	Farming/Residential Landuse
Proposed Landuse:	Proposed to be rezoned to R2 - Low Density Residential
Adjoining Site Uses:	North – rural residential and bushland East – Brocklesby Road, followed by residential South – rural residential and Bushland West – Residential
Site Coordinates for approx. centre of site:	32°44'44.52"S 151°52'29.17"E

2.2 Topography and Drainage

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

The site was observed to be relatively flat, with a slight mound in the centre of the site. Gentle slopes were observed to the east and west from the centre of the site. Rain falling on the site would be expected to infiltrate into the site soils.

Excess surface water which falls on the eastern portion of the site is expected to flow into municipal stormwater drains located on Brocklesby Road, located offsite along the eastern

boundary. Excess surface water which falls on the western portion of the site is expected to flow into a newly constructed open drain located offsite along the western boundary. Both stormwater drains are expected to discharge to Moffats Swamp, located 1.5km to the east of the site.

2.3 Regional Geology

The 1:100,000 Nelson Bay Coastal Quaternary Geological Maps indicates that the site is underlain Permian to Triassic sedimentary rocks, including extensive coal measures (Sydney Basin).

2.4 Hydrogeology

Groundwater beneath the site is anticipated to be present in an unconfined aquifer within residual soils/weathered rock at depths greater than 3m below ground surface (bgs).

Groundwater flow direction is anticipated to flow to the east discharging to Moffats Swamp located 1.5km to the east. Moffats Swamp drains towards Port Stephens located about 6km east 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 is provided in the PCA (Qualtest, 2023).

Table 2.2 – Groundwater Bore Search

Bore ID	Installation Date	Purpose	Approx. Distance and Gradient from the site	Final Depth (m)	Water Bearing Zones (m)
GW013016	01/01/1956	General Use	Central southern portion of the site	47.90	-

2.5 Acid Sulfate Soils

Reference to the Acid Sulfate Soil online database from State of NSW and Department of Planning, Industry and Environment, 2022 (<https://espade.environment.nsw.gov.au>) the site is located within an area of "no known occurrence" of acid sulfate soils" (ASS).

3.0 Previous Reports

Qualtest carried out a Preliminary Contamination Assessment (PCA) for the site (Qualtest 2023).

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

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

- Desktop study and site history review;

- Site walkover;
- Data assessment and preparation of a Preliminary Contamination Assessment Report.

The site history indicated that the majority of the site has been used for large scale cropping/orchards from at least the 1950's to the 1990's. From the 1990's the site has been used as rural residential properties, including agistment of horses and some small areas of gardens/fruit trees.

Materials and equipment were observed stored in and around onsite sheds and dwellings and areas of fill and fill stockpiles were also observed across the site. Buildings constructed of potential ACM were observed on the site, including the eaves of the residential dwelling at 39A Brocklesby Road and/or cladding of residential dwelling at 41 Brocklesby Road.

Five Areas of Environmental Concern (AECs) were identified based on the site history and site observations. The AECs related to: 1. Current and former buildings across the site; 2. Filling and stockpiling on the site; 3. Storage of equipment/waste materials; 4. Septic Tanks; 5. Former cropping/orchards.

The Preliminary Conceptual Site Model (CSM) indicated that there was a potential for soil and surface water contamination, to exist on the site and potentially complete exposure pathways could exist to current and future site users and the environment.

Based on the above, it was recommended that a Detailed Contamination Assessment (DCA), comprising intrusive investigations in the AECs identified be carried out. Given the age of the buildings on site it was also recommended that a Hazardous Materials Survey (HMS) be carried out by a suitably qualified consultant, prior to refurbishment and/or demolition of the structures.

4.0 Preliminary Conceptual Site Model

Based on the results of the PCA, a Preliminary Conceptual Site Model (CSM) was developed, and is shown below in Table 4.1

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
1. Current and former buildings across 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	Medium to High	- Top-down leaks/spills, flakes/fibres onto soil. - Leaching of soil contaminants to surface water and groundwater.	- Surface Soils - Surface water - Groundwater - Sediments	- Current site visitors - Future construction workers & site users - Soil biota/plants and transitory wildlife - Surface and ground water depended ecosystems - Offsite surface water and groundwater – Moffats swamp, located 1.5km to the east of the site.	- Direct dermal contact with contaminated soil and/or surface water - Ingestion of contaminated soil and/or surface water - Inhalation of asbestos fibres, or contaminated soil (as dust) - Leaching of soil contaminants to surface water and/or groundwater - Surface water and groundwater discharge to Moffats swamp, located 1.5km to the east of the site.	- Potentially complete exposure pathway for current site visitors, future construction workers and site users. - Potentially complete exposure pathway for ecological receptors. - Potentially complete exposure pathway for soil contaminants to leach to surface water. - Likely incomplete exposure pathway for soil contaminants to leach to groundwater due to depth of groundwater (>3m bgs and likely clayey subsoils).	Exposure pathways would be incomplete if soils are found to not be contaminated via sampling & analysis. It is recommended that a Hazardous Materials Survey is carried out on the existing site building.
2. Filling and stockpiling on the site Potential use of imported fill of unknown quality and origin.	TRH, BTEX, PAH, OCPs, Metals, Asbestos	Low to medium	- Importation of potentially contaminated fill. - Leaching of soil contaminants to underlying soils, surface water and groundwater.	- Fill soils - Underlying soils - Surface water - Groundwater - Sediments		- Direct dermal contact with contaminated soil and/or surface water - Ingestion of contaminated soil - Inhalation of asbestos fibres, or contaminated soil (as dust) - Inhalation of hydrocarbon vapours - Leaching of soil contaminants to surface water and/or groundwater - Surface water and groundwater discharge to Moffats swamp, located 1.5km to the east of the site.		Exposure pathways would be incomplete if soils are found to not be contaminated via sampling & analysis.
3. Storage of equipment/waste materials across the site Stored equipment 205L metal and plastic drums (empty), timber, metal, plastic, bricks, tyres, trailers, sheets of corrugated potential ACM, bath tubs and small quantities of paints, fuels, degreasers.	TRH, BTEX, PAH, Metals, Asbestos, OCPs (CoPCs dependent on material/waste type)	Low to Medium	- Top-down leaks/spills, flakes/fibres onto soil. - Leaching of soil contaminants to surface water and groundwater.	- Aesthetics - Surface soils - Surface water - Groundwater - Sediments		Surface water and groundwater discharge to Moffats swamp, located 1.5km to the east of the site.		
4. Septic tanks located on the site Septic tank soak aways and adsorption trenches, potential leaks of effluent	Microbiological, heavy metals, TRH, BTEX and PAH	Low to medium	- Subsurface leaks from tank - Subsurface & surface leaks from pipes	- Soil - Surface water - Sediment - Groundwater	- Current site visitors - Future construction workers & site users	- Direct dermal contact with contaminated soil and/or surface water - Ingestion of contaminated soil and/or surface water	Potentially complete exposure pathway for current site visitors, future construction workers and site users.	Exposure pathway would be incomplete if soils and surface water are found to not be contaminated

AEC	COPC	Likelihood of Contamination	Mechanism of Contamination	Potentially Affected Media	Human & Ecological Receptors	Potential mechanisms of exposure	Potential & Complete Exposure Pathways	Comments
			and/or trenches		• Soil biota/plants and transitory wildlife • Surface and ground water depended ecosystems • Offsite surface water and groundwater – Moffats swamp, located 1.5km to the east of the site.	• Leaching of soil contaminants to surface water and/or groundwater • Surface water and groundwater discharge to Moffats Swamp, located 1.5km to the east of the site.	• Potentially complete exposure pathway for ecological receptors. • Potentially complete exposure pathway for soil contaminants to leach to surface water. • Likely incomplete exposure pathway for soil contaminates to leach to groundwater due to depth of groundwater (>3m bgs and likely clayey subsoils).	via sampling & analysis.
5. Former Cropping/Orchards • Potential for pesticide herbicide and other farming related contamination	TRH, BTEX, PAH, OCPs, OPPs, herbicides, metals	Low	• Top-down leaks/spills, flakes/fibres onto soil. • Leaching of soil contaminants to surface water and groundwater	• Soils • Groundwater • Surface water • Sediments				

5.0 Data Quality Objectives

5.1 Step 1 – State the Problem

There is a potential for soil contamination to exist from past land use with plausible complete exposure pathways to human and ecological receptors. Should contamination exist, the site may not be suitable for the intended use without remediation and/or management.

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

5.2 Step 2 – Identify the 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 the 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 2 DP508780, Lot 300 DP625002 and Lot 301 DP625002 within the Port Stephens local government area. The site is located at 39,

39A and 41 Brocklesby Road, Medowie NSW, and the site area is about 5.1ha (refer to Figure 1, 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 2m bgs.

Temporally the study boundary is the date of sampling, 21 to the 22 March 2023.

5.5 Step 5 – Develop the Analytical Approach

The analytical approach can be defined as: -

- If the laboratory quality assurance/ quality control data are within the acceptable ranges, the data will be considered suitable for use;
- If the COPCs are reported above the adopted criteria and/or at elevated levels (where no criteria are available) then it will be considered whether further assessment, remediation and/or management measures are required;
- Where practical and/or appropriate, the 95% Upper Confidence Limit (UCL) of the 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.

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 5.1ha in area. The NSW EPA (2022) Sampling Design Part 1 – Application, Contaminated Land Guidelines recommend a minimum of 63 sample locations to characterise a site of 5.1ha. Based on the configuration of the site (3 separate lots each with dwellings and sheds), and the AECs identified in the Preliminary Contamination Assessment (Qualtest, 2023), a total of 74 sampling locations were adopted.

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

- Soil samples were collected from 20 test pits (TP01-1, TP02-1, TP06-2, TP66-2 to TP74-2, TP03-3, TP04-3, TP07-4 to TP10-4 and TP12-5, TP13-5) excavated in areas targeting the AECs listed in the Preliminary Contamination Assessment (Qualtest, 2023); and,
- Surface soil samples were collected from 54 locations (SS14-1 to SS19-1, SS21-1 to SS46-1, SS75-2 to SS77-2, SS47-3 to SS55-3, SS56-5 to SS65-5) targeting current and former buildings, stockpiling on site, storage of equipment/waste material and former cropping/orchards.

The location of the samples in relation to the identified AECs is shown in Table 6.1 below. The sampling locations are shown on Figure 4A and 4B, Appendix A.

Table 6.1 AECs and Sampling Locations

AEC	Samples Collected
1. Current and former buildings across the site	TP01-1 to TP02-1, SS14-1 to SS19-1 and SS21-1 to SS46-1
2. Filling and stockpiling on the site	TP06-2, TP69-2 to TP71-2 – Collected from SP1 (approx. 20m ³), TP66-2 to TP68-2 – Collected from SP2 to SP7 (approx. 30m ³ total), TP72-2 to TP74-2 Collected from SP8 (approx. 6m ³), SS75-2 to SS77-2 Collected from SP9 footprint (<50m ²).
3. Storage of equipment/waste materials across the site	TP03-3 to TP04-3, and SS47-3 to SS55-3
4. Septic tanks located on the site	TP07-4 to TP10-4. It is noted that no assessment was carried out in the vicinity of the transpiration bed at Lot 301 (39 Brockelsby Road) as the infiltration system was recently installed, still in use and consisted of a number of pipes that could not be damaged.
5. Former cropping/orchards	TP12-5 to TP13-5 and SS56-5 to SS65-5

6.2 Soil Sampling

The test pits (TP01-1 to TP02-1, TP03-3 to TP04-3, TP07-4 to TP10-4 and TP12-5 to TP13-5), fill mound/stockpiles (TP06-2, TP66-2 to TP74-2) and surface samples (SS14-1 to SS18-1, SS24-1 to

SS46-1, SS75-2 to SS77-2, SS47-3 to SS55-3, SS56-5 to SS65-5) were excavated across the site using a 2.7 tonne excavator with a 0.45m wide bucket. Surface samples SS19-1, SS21-1 to SS23-1 were collected using hand tools.

The test pits were excavated to 0.5m into natural soils or a maximum depth of 2.0m (or prior refusal). For the majority of test pit locations, soil samples were collected at the surface and then about 0.5m intervals to the base of fill material (i.e. 0.5m, 1.0m, 1.5m etc). Additional samples were collected where there was evidence of potential contamination such as odours, staining, waste materials etc.

The surface samples were collected from surface (0.0m) to approximately 0.2m bgs.

The samples were collected directly from the excavator bucket and/or hand tools, using a clean pair of nitrile gloves per sample. Samples to be tested for asbestos were assessed using the gravimetric method, comprising of collection of a 10L sample, screening through a 6.7mm sieve, and weighing of potential ACM fragments retained on the sieve (if any).

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

The soil samples were placed into 250mL laboratory supplied glass jars for laboratory analysis and a plastic zip-lock bag for asbestos %w/w analysis. An additional zip-lock bag was collected for headspace screening using a photoionisation detector (PID). 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 MGT laboratory under chain of custody conditions. Soil samples were selected for analysis based on field observations, and providing representative sampling across the site. The samples were analysed for the following:

AEC	Samples	Analysis
1. Current and former buildings across the site	TP01-1 to TP02-1, SS14-1 to SS19-1 and SS21-1 to SS46-1	TRH, BTEX, PAH – 2 primary samples Metals – 33 primary samples Asbestos (gravimetric)– 34 primary samples Asbestos %w/w – 25 primary samples OCPs/OPPs – 5 primary samples
2. Filling and stockpiling on the site	TP6-2, TP66-2 to TP74-2 and SS75-2 to SS77-2	TRH, BTEX, PAH – 5 primary samples Metals – 13 primary samples Chromium Speciation – 4 primary samples Asbestos (gravimetric & %w/w)– 13 primary samples

AEC	Samples	Analysis
3. Storage of equipment/waste materials across the site	TP03-3 to TP04-3, and SS47-3 to SS55-3	TRH, BTEX, PAH – 2 primary samples Metals – 11 primary samples Chromium Speciation – 1 primary samples Asbestos (gravimetric & %w/w) – 11 primary samples
4. Septic tanks located on the site	TP07-4 to TP10-4	Asbestos (gravimetric)– 4 primary samples Asbestos %w/w – 2 primary samples Microbiological – 5 primary samples
5. Former cropping/orchards	TP12-5 to TP13-5 and SS56-5 to SS65-5	TRH, BTEX, PAH – 1 primary sample Metals– 12 primary samples OCPs/OPPs – 10 primary samples Herbicides - 3 primary samples

7.0 Investigation Criteria

7.1 Soil Investigation Levels

7.1.1 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 EILs are associated with selected metals and organic compounds. The EILs 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 EIL. The EIL'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, low traffic, 50 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).

It is noted the ESLs for benzo(a)pyrene (ASC NEPM, 2013) were adopted from Canadian Soil Quality Guidelines (SQGs) presented in Environment Canada (2004), and were noted to have a low-reliability. The ESLs for benzo(a)pyrene in ASC NEPM (2013) were based on a review of Canadian SQGs by Dr Michael Warne, who completed the review in February 2010. Since the completion of Warne (2010) (which are included in the publication of ASC NEPM, 2013), the Canadian SQGs for benzo(a)pyrene were revised later in 2010 (CCME 2010a,b). Therefore, CRC Care Technical Note 39 assesses the benzo(a)pyrene ESL derivation, and derives a higher reliability ESL for benzo(a)pyrene in the Australian setting. The ESLs for benzo(a)pyrene derived by CRC Care (2017) are 33mg/kg for residential and open space land uses, and 172mg/kg for commercial/industrial land uses. These have been considered where benzo(a)pyrene concentrations exceed the ESL, but do not exceed the HIL, to mitigate against unwarranted remediation that is driven by low-reliability ESLs.

Based on the current and proposed site use (residential land use) the following investigation levels have been adopted:

- HIL A & HSL A – Residential; and,
- EIL A, ESL A – Urban Residential and Public Open Space.

7.1.2 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.

7.1.3 Adopted Soil Criteria

The adopted assessment criteria (for low density residential land use) are listed in Table 7.1.4 below.

Table 7.1.4: Adopted Soil Assessment Criteria

COC	HIL / HSL A (mg/kg) ^{1,2}	EIL / ESL A ³ (mg/kg)
TRH C6-C10 less BTEX (F1)	50	-
TRH >C10-C16 less Naphthalene (F2)	280	-
TRH >C6 - C10	-	180
TRH >C10 - C16	-	120
TRH >C16 - C34	-	1,300
TRH >C34 - C40	-	5,600
Benzo(a)pyrene (CRC Care)*	-	33
Carcinogenic PAH as B(a)p TEQ	3	-
Total PAHs	300	-
Arsenic	100	100
Cadmium	20	-
Chromium (III)	-	640 [^]
Chromium (VI)	100	-
Copper	6,000	180 [^]
Lead	300	1,100
Nickel	400	100 [^]
Mercury	40	-

COC	HIL / HSL A (mg/kg) ^{1,2}	EIL / ESL A ³ (mg/kg)
Zinc	7,400	440 [^]
Naphthalene	5	170
Benzene	0.7	50
Toluene	480	85
Ethylbenzene	NL	70
Total Xylene	110	105
DDT + DDE + DDD	240	180
Aldrin and Dieldrin (Total)*	6	-
Chlordanes - Total	50	-
Endosulfan	270	-
Endrin	10	-
Heptachlor	6	-
HCB	10	-
Methoxychlor	300	-
Toxaphene	20	-
Chlorpyrifos	160	-
2,4,5-T	600	-
2,4-D	900	-
MCPA	600	-
MCPB	600	-
Mecoprop	600	-
Asbestos – bonded and FA/AF	No visible asbestos for surface soils	-
Asbestos – FA and AF (Friable asbestos)	0.001%	-
Asbestos – bonded	0.01%	-
E.coli ⁴	100 MPN/g	-
Thermotolerant Coliforms ⁴	1000 MPN/g	-

Notes: _____

[^] Based on an average pH of 7, an average CEC of 8mg/kg, and Clay content 40%, and using Ambient

Background Concentration obtained from Olszowy et al (1995) using urban soils, old suburbs with low traffic, 50% 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

4 - NSW EPA (2000) Use and Disposal of Biosolids Products, Table 3.4 Initial Process Verification Standards, Table 3.5 Stabilisation Grade A Microbiological Standards

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

8.0 Quality Assurance/Quality Control

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

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

QC Sample	Type	Lab	Analysis
D.21.3.23	Duplicate of TP73-2_0.0-0.2	Eurofins	TRH, BTEX, PAHs, Metals
T.21.3.23	Triplicate of TP73-2_0.0-0.2	SGS	TRH, BTEX, PAHs, Metals
D.22.3.23	Duplicate of SS63-5	Eurofins	TRH, BTEX, PAHs, Metals
T.22.3.23	Triplicate of SS63-5	SGS	TRH, BTEX, PAHs, Metals
WB.22.3.23	Equipment wash blank	Eurofins	TRH, BTEX, PAHs, Metals

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

Table 5, Appendix B, presents the relative percentage differences (RPDs) between the primary, duplicate and triplicate samples. A review of the Qualtest QA / QC results indicates that RPDs were within the acceptable range with the exception of duplicate pair TP73-2_0.0-0.2/ D.21.3.23 for chromium (33%), copper (100%) and nickel (90%) and triplicate pair TP73-2_0.0-0.2/T.21.3.23 for chromium (33%), copper (158%), nickel (172%) and zinc (54%).

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

Table 5, Appendix B, presents the equipment wash blank results. The results show concentrations below the laboratory limit of reporting (LOR).

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

- Laboratory blank samples were free of contamination;
- Matrix spike recoveries were within the control limits with the exception of the following:
 - MCPA where Eurofins quoted Q08 which states "The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference." ; and
 - TRH analytes where SGS quoted which states "Recovery failed acceptance criteria due to the presence of significant concentration of analytes (i.e. the concentration of analyte exceeds the spike level)."

Based on the above, and as no elevated TRH was reported on the site, the recoveries are considered acceptable.

- Laboratory duplicate RPDs were recorded within the control limits, with the exception of the following:
- Eurofins duplicate RPDs for chromium and zinc RPDs, the laboratory 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 Q02 which states *"The duplicate %RPD is outside the recommended acceptance criteria. Further analysis indicates sample heterogeneity as the cause"*.
- SGS duplicate RPDs for nickel, lead and TRH analytes, the laboratory quotes 2 which states *"RPD failed acceptance criteria due to sample heterogeneity"*.

Based on the above, the RPDs are considered acceptable.

- Surrogates and laboratory control samples were within the laboratories acceptable range

Based on the above, and the data validation report in Appendix D, it is considered that the field and laboratory methods for soil sampling are appropriate and that the data obtained is usable and considered to reasonably represent the concentrations at the sampling points at the time of sampling.

9.0 Results

9.1 Subsurface Conditions

The soils observed during excavation are summarised below in Tables 9.1.1 (Test pits), 9.1.2 (Fill Mound and Stockpiles), 9.1.3 (Surface Samples). The borehole logs are presented in Appendix C.

Table 9.1.1 – Summary of Geotechnical Units and Soil Types – Test pits (TP01-1 to TP02-1, TP03-3 to TP04-3, TP07-4 to TP10-4 and TP12-5 to TP13-5)

Soil Type	Description	Depth Range (m bgs)
Fill	CLAY – medium plasticity, brown-dark brown, trace fine grained sand, root affected. CLAY – medium plasticity, orange-brown, trace fine grained sand, root affected. Sandy CLAY – low to medium plasticity, dark grey to dark brown with some brown, fine to medium grained sand, trace concrete, plastic, roof tile, geo fab, root affected.	0.0 to 0.4
Residual soil	CLAY – medium to high plasticity, orange-brown. CLAY – medium to high plasticity, red-grey with some orange-brown.	0.3/0.4 to 2.0

Table 9.1.2 – Summary of Geotechnical Units and Soil Types – Fill Mound and Stockpiles (TP06-2, TP66-2 to TP74-2)

Soil Type	Description	Depth Range (m bgs)
Fill	SAND – fine to medium grained, pale brown to pale grey, root affected. SAND - fine to coarse grained, dark grey to grey, trace glass, brick, concrete, potential asbestos containing material. CLAY – medium plasticity, orange-brown to red-brown, trace fine grained sand. Clayey Gravelly SAND – fine to medium grained, brown to grey, fine to medium grained angular gravel, fines of low plasticity, trace slag, concrete, asphalt.	0.0 to 0.4
Residual soil	CLAY – medium plasticity, orange-brown, trace fine grained sand. CLAY – medium to high plasticity, orange-brown to pale brown, becoming red-grey with depth.	0.3/0.4 to 0.5/0.6

Table 9.1.3 – Summary of Soils in Surface Samples

Sample ID	Material Description
SS15-1 to SS19-1, SS21-1 to SS23-1, SS27-1 to SS29-1, SS31-1 to SS46-1, SS51-3, SS53-3 to SS57-3, SS59-5, SS61-5 to SS65-5	Sandy CLAY – low plasticity, dark brown, fine to medium grained, root affected.
SS50-3, SS58-5	Clayey SAND – fine to medium grained, brown, fines of low plasticity, root affected.
SS24-1, SS30-1	Gravelly Sandy CLAY – low plasticity, brown to dark brown, fine to medium grained sand, fine to medium grained angular gravel.
SS26-1	SAND – fine to coarse grained, brown to dark brown, fines of low plasticity.
SS47-3 to SS49-3, SS52-3, SS60-5	CLAY – low to medium plasticity, brown, trace fine to medium grained sand.

No odours or stained soils were observed during sampling. Anthropogenic materials observed while excavating can be summarised below in Table 9.3

Table 9.1.4 – Summary of Anthropogenic Material

Sample ID	Anthropogenic Material Observed
SS75-2 to SS77-2 and TP10-4	Slag, roof tile, concrete and asphalt
TP72-2 to TP74-2 and SS55-3	Slag, concrete and asphalt
TP07-4 and TP10-4	Concrete, plastic, geo fab, roof tile,
TP71-2	Glass, brick, concrete, PACM
SS40-1 and SS45-1	Mulch
SS30-1 and SS36-1	Slag

Potential Asbestos Containing Material (PACM) was observed in TP71-2_0.0-0.2 during gravimetric asbestos testing.

9.2 PID Results

The results of PID screening of samples are included in Appendix E. The screening showed readings between 0.2ppmv and 17.1ppmv, which indicates a very low to low potential for volatile contamination.

9.3 Laboratory Results

Soil analytical results for the contamination assessment are summarised in Tables 1 to 4, 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 7.1. The analytical results indicated that concentrations of contaminants were reported below the adopted criteria, with the exception of:

- Concentrations of zinc exceeded the EIL (440mg/kg) in sample SS35-1 (960mg/kg); and
- A fragment of asbestos containing material (ACM) was identified (below the HIL of 0.01%) in TP1-71-2_0.0-0.2, collected from SP1.

10.0 Discussion of Exceedance

10.1 Zinc

Sample SS35 showed concentrations of zinc above the adopted ecological criteria (EIL). SS35 was located adjacent to the metal clad shed (Shed 4) in the south western portion of Lot 300 (39A Brocklesby Road), and the source of the zinc is considered to be due to weathering of galvanised metals. No other zinc concentrations above the adopted EIL were identified on the site. Based on this, the zinc exceedance appears to be localised. Therefore, it is considered that the zinc does not pose a risk to ecosystems, and remediation of the zinc would be a net adverse impact on the environment (use of machinery and vehicles to excavate and transport waste, disposal of waste to landfill).

10.2 ACM

A fragment of ACM was identified in TP-71-2_0.0-0.2, collected from SP1, located in the south eastern portion of Lot 301 (39 Brocklesby Road). SP1 was observed to be approximately 20m³ and consisted of gravelly sand, dark brown with some anthropogenic materials including ACM, tyres, terracotta pipe, plastics and bricks.

Concentrations of ACM were reported below the adopted criteria (0.01%) however, ACM cannot be present on the site surface. Based on this, SP1 will require management.

Options for management of SP1, include:

- Preparation of an Asbestos management plan (AMP), and placement of SP1 below surface soils, Qualtest recommends placement at depths greater than 0.5m below final site surface levels; or
- Preparation of an Asbestos Removal Plan (ARP) and disposal of SP1 offsite in accordance with the NSW EPA (2014) Waste Classification Guidelines.

11 Conceptual Site Model

Based on the results of the detailed contamination assessment, including sampling and analysis, carried out on the site, the Conceptual Site Model (CSM) has been updated and presented in Table 11.1.

Table 10.1 – Updated Conceptual Site Model Following Assessment

AEC	COPC	Mechanism of Contamination	Potentially Affected Media	Human & Ecological Receptors	Potential mechanisms of exposure	Sampling Completed	Potential & Complete Exposure Pathways
1. Current and former buildings across 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 onto soil. - Leaching of soil contaminants to surface water and groundwater.	- Surface Soils - Surface water - Groundwater - Sediments	- Current site visitors - Future construction workers & site users - Soil biota/plants and transitory wildlife - Surface and ground water depended ecosystems - Offsite surface water and groundwater – Moffats swamp, located 1.5km to the east of the site.	- Direct dermal contact with contaminated soil and/or surface water - Ingestion of contaminated soil and/or surface water - Inhalation of asbestos fibres, or contaminated soil (as dust) - Leaching of soil contaminants to surface water and/or groundwater - Surface water and groundwater discharge to Moffats swamp, located 1.5km to the east of the site.	TP01-1 to TP02-1, SS14-1 to SS19-1 and SS21-1 to SS46-1	- Incomplete exposure pathway for current site visitors, future construction workers and site users, as no contamination identified. - Incomplete exposure pathway for ecological receptors. Surface soil in SS35 slightly exceeded the adopted ecological criteria for zinc. The elevated zinc is considered to be localised to adjacent to Shed 4. Due to the localised nature of the elevated zinc, and that the exceedance was slight, the risk to plants and transitory wildlife is considered to be low. Based on this, no further remediation and/or management is considered to be required. - Incomplete exposure pathway for surface water receptor, Moffats swamp, due to localised nature of contamination and distance to Moffats swamp (1.5km). - Incomplete exposure pathway for soil contaminates to leach to groundwater due to depth of groundwater (>3m bgs and likely clayey subsoils).
2. Filling and stockpiling on the site Potential use of imported fill of unknown quality and origin.	TRH, BTEX, PAH, OCPs, Metals, Asbestos	- Importation of potentially contaminated fill. - Leaching of soil contaminants to underlying soils, surface water and groundwater.	- Fill soils - Underlying soils - Surface water - Groundwater - Sediments		- Direct dermal contact with contaminated soil and/or surface water - Ingestion of contaminated soil - Inhalation of asbestos fibres, or contaminated soil (as dust) - Inhalation of hydrocarbon vapours - Leaching of soil contaminants to surface water and/or groundwater - Surface water and groundwater discharge to Moffats swamp, located 1.5km to the east of the site.	TP06-2, TP66-2 to TP74-2 and SS75-2 to SS77-2	- Incomplete exposure pathway for current site visitors, future construction workers and site users, provided SP1 is managed in accordance with options provided in Section 10.2. - Incomplete exposure pathway for ecological receptors, as no contamination above EILs/ESLs identified. - Incomplete exposure pathway for surface water receptor, Moffats swamp, due to localised nature of contamination and distance to Moffats swamp (1.5km). - Incomplete exposure pathway for soil contaminates to leach to groundwater due to depth of groundwater (>3m bgs and likely clayey subsoils).
3. Storage of equipment/waste materials across the site Stored equipment 205L metal and plastic drums (empty), timber, metal, plastic, bricks, tyres, trailers, sheets of corrugated potential ACM, bath tubs	TRH, BTEX, PAH, Metals, Asbestos, OCPs (CoPCs dependent on material/waste type)	- Top-down leaks/spills, flakes/fibres onto soil. - Leaching of soil contaminants to surface	- Aesthetics - Surface soils - Surface water - Groundwater - Sediments			TP03-3 to TP04-3, and SS47-3 to SS55-3	- Incomplete exposure pathway for current site visitors, future construction workers and site users, as no contamination identified. - Incomplete exposure pathway for ecological receptors, as no contamination identified. - Incomplete exposure pathway for surface water receptor, Moffats swamp, due to

AEC	COPC	Mechanism of Contamination	Potentially Affected Media	Human & Ecological Receptors	Potential mechanisms of exposure	Sampling Completed	Potential & Complete Exposure Pathways
and small quantities of paints, fuels, degreasers.		water and groundwater.					localised nature of contamination and distance to Moffats swamp (1.5km). Incomplete exposure pathway for soil contaminants to leach to groundwater due to depth of groundwater (>3m bgs and likely clayey subsoils).
4. Septic tanks located on the site Septic tank soak aways and adsorption trenches, potential leaks of effluent	Microbiological, heavy metals, TRH, BTEX and PAH	- Subsurface leaks from tank - Subsurface & surface leaks from pipes and/or trenches	- Soil - Surface water - Sediment - Groundwater	- Current site visitors - Future construction workers & site users - Soil biota/plants and transitory wildlife - Surface and ground water depended ecosystems - Offsite surface water and groundwater – Moffats swamp, located 1.5km to the east of the site.	- Direct dermal contact with contaminated soil and/or surface water - Ingestion of contaminated soil and/or surface water - Leaching of soil contaminants to surface water and/or groundwater - Surface water and groundwater discharge to Moffats Swamp, located 1.5km to the east of the site.	TP07-4 to TP10-4	- Potentially complete exposure pathway for site users and future construction workers on Lot 301 as assessment of the septic infiltration area was carried out due to septic being in use and new pipework system. If septic/infiltration area is proposed to be decommissioned, the septic tanks and effluent disposal areas will require assessment and decommissioning in accordance with relevant guidelines. - Potentially complete exposure pathway for ecological receptors. - Incomplete exposure pathway for surface water receptor, Moffats swamp, due to localised nature of potential contamination and distance to Moffats swamp (1.5km). - Incomplete exposure pathway for soil contaminants to leach to groundwater due to depth of groundwater (>3m bgs and likely clayey subsoils).
5. Former Cropping/Orchards Potential for pesticide herbicide and other farming related contamination	TRH, BTEX, PAH, OCPs, OPPs, herbicides, metals	- Top-down leaks/spills, flakes/fibres onto soil. - Leaching of soil contaminants to surface water and groundwater	- Soils - Groundwater - Surface water - Sediments			TP12-5 to TP13-5 and SS56-5 to SS65-5	- Incomplete exposure pathway for current site visitors, future construction workers and site users, as no contamination identified. - Incomplete exposure pathway for ecological receptors. - Incomplete exposure pathway for surface water receptor, Moffats swamp, due to localised nature of contamination and distance to Moffats swamp (1.5km). - Incomplete exposure pathway for soil contaminants to leach to groundwater due to depth of groundwater (>3m bgs and likely clayey subsoils).

12 Conclusions and Recommendations

Based on the results of the Detailed Contamination Assessment it is considered the site can be made suitable for the proposed re zoning, with the following recommendations:

- If the septic/infiltration area is proposed to be decommissioned on Lot 301, the septic tank and effluent disposal area will require decommissioning in accordance with relevant guidelines and the area assessed, prior to the proposed development.
- Management of SP1 (20m³), located in the south eastern portion of Lot 301 (39 Brocklesby Road), including:
 - Preparation of an Asbestos management plan (AMP), and placement of SP1 below surface soils, Qualtest recommends placement at depths greater than 0.5m below final site surface levels; or
 - Preparation of an Asbestos Removal Plan (ARP) and disposal of SP1 offsite in accordance with the NSW EPA (2014) Waste Classification Guidelines.
- Removal of waste materials for aesthetic purposes and disposal offsite in accordance with the NSW EPA (2014) Waste Classification Guidelines; and/or
- Hazardous materials in buildings (if any) are removed in accordance with relevant laws and guidelines, and clearances provided by appropriately qualified and licensed person/consultant; and,
- An unexpected find procedure is developed and included in the Construction Environmental Management Plan for the subdivision works.

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 residential subdivision.

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).

13 Limitations

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

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

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

In preparing this report, current guidelines for assessment and management of contaminated land were followed. The conclusions reached in this report are dependent on the limitations

inherent in all subsurface investigations where horizontal and vertical variation in contaminant concentrations can occur. No subsurface assessment can accurately predict the contaminant concentration at all points.

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

14 References

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

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

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

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

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

ANZECC (2000) Australian and New Zealand Guidelines on Fresh and Marine Water Quality

ANZG (2018) Australian and New Zealand Guidelines on Fresh and Marine Water Quality

SEPP (Resilience and Hazards) 2021, Chapter 4

Qualtest (2023) Preliminary Contamination Assessment, ref: NEW23P-0009-AA dated 8 February 2023

APPENDIX A:

Figures



Image obtained from Google Earth

Client:	McCloy Group Pty Ltd	Drawing No:	FIGURE 1
Project:	Detailed Contamination Assessment	Project No:	NEW23P-0009-AB
Location:	39, 39A and 41 Brocklesby Road, Medowie NSW	Scale:	N.T.S.
Title:	Site Location Plan	Date:	20/01/2023



LEGEND:



Approximate Site/Lot Boundary

Image sourced from SIX maps

Client:	McCloy Group Pty Ltd	Drawing No:	FIGURE 2
Project:	Detailed Contamination Assessment	Project No:	NEW23P-0009-AB
Location:	39, 39A and 41 Brocklesby Road, Medowie	Scale:	N.T.S.
Title:	Lot Location Plan	Date:	20/01/2023



Lot 2 DP508780
(41 Brocklesby Road,

Drainage
line

Concrete Slab

Septic Tank

Septic
Infiltration Area
and Garden

Mulch
Stockpiles

Fruit
Trees/Orchard

Swale
Drain

Shed 6

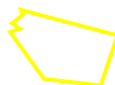
Fenced Garden
Area

Shed 7

Residential
Dwelling

SP9 - slag
concrete
tiles

LEGEND:



Approximate Lot Boundary

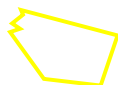


Image sourced from NearMaps

Client:	McCloy Group Pty Ltd	Drawing No:	FIGURE 3B
Project:	Detailed Contamination Assessment	Project No:	NEW22P-0009-AB
Location:	39, 39A and 41 Brocklesby Road, Medowie	Scale:	N.T.S.
Title:	Site Features Plan - 41 Brocklesby Road, Medowie	Date:	20/01/2023



LEGEND:



Approximate Site/Lot Boundary

Image sourced from NearMaps

Client:	McCloy Group Pty Ltd	Drawing No:	FIGURE 3C
Project:	Detailed Contamination Assessment	Project No:	NEW22P-0009-AB
Location:	39, 39A and 41 Brocklesby Road, Medowie	Scale:	N.T.S.
Title:	Former Site Features Plan	Date:	20/01/2023



Image sourced from NearMaps

LEGEND:

● Approximate Surface Sample Location

⊠ Approximate Testpit Location

⬡ Approximate Site/Lot Boundary

Client:	McCloy Group Pty Ltd	Drawing No:	FIGURE 4A
Project:	Detailed Contamination Assessment	Project No:	NEW22P-0009-AB
Location:	39, 39A and 41 Brocklesby Road, Medowie	Scale:	N.T.S.
Title:	Sample Locations - Eastern Portion	Date:	30/03/2023



Client:	McCloy Group Pty Ltd	Drawing No:	FIGURE 4B
Project:	Detailed Contamination Assessment	Project No:	NEW22P-0009-AB
Location:	39, 39A and 41 Brocklesby Road, Medowie	Scale:	N.T.S.
Title:	Sample Locations - Western Portion	Date:	30/03/2023

APPENDIX B:

Tables

					Field ID	TP01-1_0.0-0.2	TP02-1_0.0-0.2	SS14-1	SS15-1	SS16-1	SS17-1	SS18-1	SS19-1	SS22-1	SS23-1	SS24-1	SS25-1	SS26-1	SS27-1	SS28-1	SS29-1	
					Date	21/03/2023	21/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	
					AEC	Current																
Analytes		Units	LOR	HIL/HSL A ¹	EIL/ESL A ²																	
Metals	Arsenic	mg/kg	2	100	100	< 2	< 2	3.4	3.7	10	18	2.6	3.4	8.9	24	4.8	4.5	5	2.8	6	3.9	
	Cadmium	mg/kg	0.4	20		< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	0.7	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	
	Chromium (total)	mg/kg	5			23	16	17	18	13	34	19	20	32	24	11	8.3	13	19	16	26	
	Chromium (VI)	mg/kg	1	100		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Chromium (III)	mg/kg	5		640*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Copper	mg/kg	5	6000	180*	< 5	< 5	7.4	12	17	36	11	24	33	26	17	13	10	36	27	30	
	Lead	mg/kg	5	300	1100	6.4	11	8.9	12	19	20	19	22	47	44	22	13	77	25	57	27	
	Mercury	mg/kg	5	40		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
	Nickel	mg/kg	5	400	100*	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	7.9	< 5	8	< 5	< 5	< 5	< 5	14	
Zinc	mg/kg	5	7400	440*	9.6	15	9.7	93	100	270	71	110	200	120	110	50	140	90	250	190		
pH & CEC	pH (1:5 Aqueous extract)	pH units	0.1			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Cation Exchage Capacity	meq/100g	0.05			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
PAHs	Acenaphthene	mg/kg	0.5			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Acenaphthylene	mg/kg	0.5			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Anthracene	mg/kg	0.5			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Benz(a)anthracene	mg/kg	0.5			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Benzo(a)pyrene	mg/kg	0.5		33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Benzo(a)pyrene TEQ (medium bound)	mg/kg	0.6	3		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Benzo(b&j)fluoranthene	mg/kg	0.5			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Benzo(g,h,i)perylene	mg/kg	0.5			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Benzo(k)fluoranthene	mg/kg	0.5			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Chrysene	mg/kg	0.5			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Dibenz(a,h)anthracene	mg/kg	0.5			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Fluoranthene	mg/kg	0.5			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Fluorene	mg/kg	0.5			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Indeno(1,2,3-cd)pyrene	mg/kg	0.5			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Naphthalene	mg/kg	0.5		170	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Phenanthrene	mg/kg	0.5			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Pyrene	mg/kg	0.5			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total PAH	mg/kg	0.5	300		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
BTEX	Benzene	mg/kg	0.1	0.7	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Toluene	mg/kg	0.1	480	85	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Ethylbenzene	mg/kg	0.1	NL	70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Xylenes - Total	mg/kg	0.3	110	105	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
TRH	Naphthalene	mg/kg	0.5	5		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	TRH C6-C10	mg/kg	20		180	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	TRH C6-C10 less BTEX (F1)	mg/kg	20	50		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	TRH >C10-C16	mg/kg	50		120	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	TRH >C10-C16 less Naphthalene (F2)	mg/kg	50	280		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
	TRH >C16-C34	mg/kg	100		1300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
TRH >C34-C40		mg/kg	100		5600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

- Notes
- * EIL based on pH of 7 and CEC of 8mg/kg, and Clay content 40%, and using Ambient Background Concentration obtained from Olszowy et al (1995) using urban soils, new suburbs with low traffic , 50% percentile.
- ND Not detected
- NL Not limiting
- Result Concentration exceeds adopted HIL/HSL A
- Result Concentration exceeds the adopted EIL/ESL A

¹ ASC NEPM (2013) Health Investigation & Screening Levels, Residential, Clay 0m to <1m

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

					Field ID	SS30-1	SS31-1	SS32-1	SS33-1	SS34-1	SS35-1	SS36-1	SS37-1	SS38-1	SS39-1	SS40-1	SS41-1	SS42-1	SS43-1	SS44-1	SS45-1	SS46-1
					Date	22/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	21/03/2023	21/03/2023	21/03/2023	21/03/2023	21/03/2023	21/03/2023	21/03/2023	21/03/2023	21/03/2023
					AEC : and Former Buildings																	
Analytes		Units	LOR	HIL/HSL A ¹	EIL/ESL A ²																	
Metals	Arsenic	mg/kg	2	100	100	2.7	2.8	2.4	2	2.6	2.2	2.6	2.2	2.6	< 2	4.5	2.8	3.5	7.6	< 2	< 2	< 2
	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	0.5	< 0.4	< 0.4	< 0.4	< 0.4
	Chromium (total)	mg/kg	5			10	18	22	26	30	20	26	23	19	24	21	37	17	18	19	16	12
	Chromium (VI)	mg/kg	1	100		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Chromium (III)	mg/kg	5		640*	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Copper	mg/kg	5	6000	180*	61	11	10	6.5	21	14	8.8	17	< 5	< 5	10	12	7.4	< 5	< 5	6.1	< 5
	Lead	mg/kg	5	300	1100	29	18	19	22	40	21	17	14	10	5.9	15	21	12	6.9	5.9	9.9	5.5
	Mercury	mg/kg	5	40		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	Nickel	mg/kg	5	400	100*	< 5	< 5	< 5	< 5	5.9	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5
pH & CEC	Zinc	mg/kg	5	7400	440*	240	64	120	84	320	960	160	75	29	7.4	47	43	190	24	16	32	25
	pH (1:5 Aqueous extract)	pH units	0.1			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.3
	Cation Exchange Capacity	meq/100g	0.05			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10
PAHs	Acenaphthene	mg/kg	0.5			< 0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.5	-
	Acenaphthylene	mg/kg	0.5			< 0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.5	-
	Anthracene	mg/kg	0.5			< 0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.5	-
	Benz(a)anthracene	mg/kg	0.5			1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.5	-
	Benzo(a)pyrene	mg/kg	0.5		33	1.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.5	-
	Benzo(a)pyrene TEQ (medium bound)	mg/kg	0.6	3		< 5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.6	-
	Benzo(b&j)fluoranthene	mg/kg	0.5			0.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.5	-
	Benzo(g,h,i)perylene	mg/kg	0.5			< 5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.5	-
	Benzo(k)fluoranthene	mg/kg	0.5			0.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.5	-
	Chrysene	mg/kg	0.5			1.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.5	-
	Dibenz(a,h)anthracene	mg/kg	0.5			< 0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.5	-
	Fluoranthene	mg/kg	0.5			< 0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.5	-
	Fluorene	mg/kg	0.5			< 0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.5	-
	Indeno(1,2,3-cd)pyrene	mg/kg	0.5			1.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.5	-
	Naphthalene	mg/kg	0.5		170	< 0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.5	-
	Phenanthrene	mg/kg	0.5			< 0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.5	-
	Pyrene	mg/kg	0.5			1.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.5	-
	Total PAH	mg/kg	0.5	300		8.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.5	-
BTEX	Benzene	mg/kg	0.1	0.7	50	< 0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.1	-
	Toluene	mg/kg	0.1	480	85	< 0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.1	-
	Ethylbenzene	mg/kg	0.1	NL	70	< 0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.1	-
	Xylenes - Total	mg/kg	0.3	110	105	< 0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.3	-
TRH	Naphthalene	mg/kg	0.5	5		< 0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 0.5	-
	TRH C6-C10	mg/kg	20		180	< 20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 20	-
	TRH C6-C10 less BTEX (F1)	mg/kg	20	50		< 20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 20	-
	TRH >C10-C16	mg/kg	50		120	< 50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 50	-
	TRH >C10-C16 less Naphthalene (F2)	mg/kg	50	280		< 50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 50	-
	TRH >C16-C34	mg/kg	100		1300	180	-	-	-	-	-	-	-	-	-	-	-	-	-	-	180	-
		mg/kg	100		5600	130	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 100	-

Notes

* EIL based on pH of 7 and CEC of 8mg/kg, and Clay content 40%, and using Ambient Background Concentration obtained from Olszowy et al (1995) using urban soils, new suburbs with low traffic , 50% percentile.

ND Not detected

NL Not limiting

Result Concentration exceeds adopted HIL/HSL A

Result Concentration exceeds the adopted EIL/ESL A

¹ ASC NEPM (2013) Health Investigation & Screening Levels, Residential, Clay 0m to <1m

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



					Field ID	TP06-2_0.0-0.2	TP66-2_0.0-0.2	TP67-2_0.0-0.2	TP68-2_0.0-0.2	TP69-2_0.0-0.2	TP70-2_0.0-0.2	TP71-2_0.0-0.2	TP72-2_0.0-0.2	TP73-2_0.0-0.2	TP74-2_0.0-0.2	SS75-2	SS76-2	SS77-2	TP03-3_0.0-0.2	TP04-3_0.0-0.2	SS47-3	SS48-3	SS49-3	SS50-3						
					Date	21/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	21/03/2023	21/03/2023	21/03/2023	21/03/2023	21/03/2023	21/03/2023	21/03/2023	21/03/2023	21/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	21/03/2023			
					AEC														Filling and Stockpiling										Storage of Equipment/V	
Analytes		Units	LOR	HIL/HSL A ¹	EIL/ESL A ²																									
Metals	Arsenic	mg/kg	2	100	100	< 2	3.2	4.1	3.7	2.8	< 2	2.7	2.5	17	7.7	< 2	2.2	< 2	4.4	3.9	3.3	2.7	2.8	< 2						
	Cadmium	mg/kg	0.4	20		< 0.4	< 0.4	< 0.4	< 0.4	0.6	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			< 5	35	49	42	9.9	6.8	< 5	560*	400*	420*	35	410*	37	50	41	30	23	14	19						
	Chromium (VI)	mg/kg	1	100		-	-	-	-	-	-	-	<1	<1	<1	-	<1	-	-	-	-	-	-	-						
	Chromium (III)	mg/kg	5		640*	-	-	-	-	-	-	-	560	400	420	-	41	-	-	-	-	-	-	-						
	Copper	mg/kg	5	6000	180*	< 5	< 5	< 5	< 5	71	63	43	17	120	23	8.8	35	13	< 5	5.9	< 5	< 5	7	15						
	Lead	mg/kg	5	300	1100	< 5	9.3	8.6	8.6	220	180	110	22	16	24	7.1	9.6	7.6	9.7	15	8.5	11	35	7.8						
	Mercury	mg/kg	5	40		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1						
	Nickel	mg/kg	5	400	100*	< 5	< 5	7.3	6.6	6	< 5	< 5	13	74	14	< 5	7.3	< 5	6.6	6	< 5	< 5	< 5	< 5						
pH & CEC	Zinc	mg/kg	5	7400	440*	< 5	5.7	10	12	440	330	230	60	45	73	13	56	22	25	98	110	27	55	20						
	pH (1:5 Aqueous extract)	pH units	0.1			-	-	-	-	-	-	-	-	-	-	7.7	-	-	-	-	-	-	-	-						
	Cation Exchange Capacity	meq/100g	0.05			-	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-						
PAHs	Acenaphthene	mg/kg	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						
	Anthracene	mg/kg	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						
	Benzo(a)pyrene	mg/kg	0.5		33	< 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						
	Benzo(b&j)fluoranthene	mg/kg	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						
	Benzo(k)fluoranthene	mg/kg	0.5			< 0.5	-	-	< 0.5	-	-	< 0.5	-	< 0.5	-	< 0.5	-	-	-	-	-	-	-	< 0.5						
	Chrysene	mg/kg	0.5			< 0.5	-	-	< 0.5	-	-	< 0.5	-	< 0.5	-	< 0.5	-	-	-	-	-	-	-	< 0.5						
	Dibenz(a,h)anthracene	mg/kg	0.5			< 0.5	-	-	< 0.5	-	-	< 0.5	-	< 0.5	-	< 0.5	-	-	-	-	-	-	-	< 0.5						
	Fluoranthene	mg/kg	0.5			< 0.5	-	-	< 0.5	-	-	0.7	-	< 0.5	-	< 0.5	-	-	-	-	-	-	-	< 0.5						
	Fluorene	mg/kg	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						
	Naphthalene	mg/kg	0.5		170	< 0.5	-	-	< 0.5	-	-	< 0.5	-	< 0.5	-	< 0.5	-	-	-	-	-	-	-	< 0.5						
	Phenanthrene	mg/kg	0.5			< 0.5	-	-	< 0.5	-	-	< 0.5	-	< 0.5	-	< 0.5	-	-	-	-	-	-	-	< 0.5						
	Pyrene	mg/kg	0.5			< 0.5	-	-	< 0.5	-	-	0.7	-	< 0.5	-	< 0.5	-	-	-	-	-	-	-	< 0.5						
	Total PAH	mg/kg	0.5	300		< 0.5	-	-	< 0.5	-	-	1.4	-	< 0.5	-	< 0.5	-	-	-	-	-	-	-	< 0.5						
BTEX	Benzene	mg/kg	0.1	0.7	50	< 0.1	-	-	< 0.1	-	-	< 0.1	-	< 0.1	-	< 0.1	-	-	-	-	-	-	-	< 0.1						
	Toluene	mg/kg	0.1	480	85	< 0.1	-	-	< 0.1	-	-	< 0.1	-	< 0.1	-	< 0.1	-	-	-	-	-	-	-	< 0.1						
	Ethylbenzene	mg/kg	0.1	NL	70	< 0.1	-	-	< 0.1	-	-	< 0.1	-	< 0.1	-	< 0.1	-	-	-	-	-	-	-	< 0.1						
	Xylenes - Total	mg/kg	0.3	110	105	< 0.3	-	-	< 0.3	-	-	< 0.3	-	< 0.3	-	< 0.3	-	-	-	-	-	-	-	< 0.3						
TRH	Naphthalene	mg/kg	0.5	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						
	TRH C6-C10 less BTEX (F1)	mg/kg	20	50		< 20	-	-	< 20	-	-	< 20	-	< 20	-	< 20	-	-	-	-	-	-	-	< 20						
	TRH >C10-C16	mg/kg	50		120	< 50	-	-	< 50	-	-	< 50	-	< 50	-	< 50	-	-	-	-	-	-	-	< 50						
	TRH >C10-C16 less Naphthalene (F2)	mg/kg	50	280		< 50	-	-	< 50	-	-	< 50	-	< 50	-	< 50	-	-	-	-	-	-	-	< 50						
	TRH >C16-C34	mg/kg	100		1300	< 100	-	-	< 100	-	-	< 100	-	< 100	-	< 100	-	-	-	-	-	-	-	< 100						
TRH >C34-C40		mg/kg	100		5600	< 100	-	-	< 100	-	-	< 100	-	< 100	-	< 100	-	-	-	-	-	-	< 100							

Notes

* EIL based on pH of 7 and CEC of 8mg/kg, and Clay content 40%, and using Ambient Background Concentration obtained from Olszowy et al (1995) using urban soils, new suburbs with low traffic , 50% percentile.

ND Not detected

NL Not limiting

Result Concentration exceeds adopted HIL/HSL A

Result Concentration exceeds the adopted EIL/ESL A

¹ ASC NEPM (2013) Health Investigation & Screening Levels, Residential, Clay 0m to <1m

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



					Field ID	SS51-3	SS52-3	SS53-3	SS54-3	SS55-3	TP12-5_0.0-0.2	TP13-5_0.0-0.2	SS56-5	SS57-5	SS58-5	SS59-5	SS60-5	SS61-5	SS62-5	SS63-5	SS64-5	SS65-5
					Date	22/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	21/03/2023	21/03/2023	22/03/2023	21/03/2023	21/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	21/03/2023	21/03/2023
					AEC /aste	Former Cropping																
Analytes		Units	LOR	HIL/HSL A ¹	EIL/ESL A ²																	
Metals	Arsenic	mg/kg	2	100	100	2.6	4.5	3	2.3	4	3.7	2.9	2.8	2.8	< 2	4.3	2.5	2.2	< 2	< 2	3.1	4
	Cadmium	mg/kg	0.4	20		< 0.4	< 0.4	< 0.4	< 0.4	0.5	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	0.5	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4	< 0.4
	Chromium (total)	mg/kg	5			19	31	23	18	410*	24	23	15	16	17	23	22	16	18	13	16	23
	Chromium (VI)	mg/kg	1	100		-	-	-	-	<1	-	-	-	-	-	-	-	-	-	-	-	-
	Chromium (III)	mg/kg	5		640*	-	-	-	-	410	-	-	-	-	-	-	-	-	-	-	-	-
	Copper	mg/kg	5	6000	180*	9.6	13	19	5.5	38	16	27	78	5.3	11	13	7.5	20	16	14	7.4	8.6
	Lead	mg/kg	5	300	1100	10	20	13	9	23	15	13	5.9	5.1	8.6	16	11	16	8	12	11	15
	Mercury	mg/kg	5	40		< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	Nickel	mg/kg	5	400	100*	< 5	< 5	< 5	< 5	14	< 5	< 5	< 5	< 5	< 5	5.1	< 5	< 5	< 5	< 5	< 5	< 5
pH & CEC	Zinc	mg/kg	5	7400	440*	36	18	19	32	160	10	21	240	14	24	29	29	12	14	14	28	15
	pH (1:5 Aqueous extract)	pH units	0.1			-	-	-	-	7.6	-	-	-	-	-	-	-	-	-	-	-	-
PAHs	Cation Exchange Capacity	meq/100g	0.05			-	-	-	-	45	-	-	-	-	-	-	-	-	-	-	-	-
	Acenaphthene	mg/kg	0.5			-	-	-	-	< 0.5	-	-	-	< 0.5	-	-	-	-	-	-	-	-
	Acenaphthylene	mg/kg	0.5			-	-	-	-	< 0.5	-	-	-	< 0.5	-	-	-	-	-	-	-	-
	Anthracene	mg/kg	0.5			-	-	-	-	< 0.5	-	-	-	< 0.5	-	-	-	-	-	-	-	-
	Benz(a)anthracene	mg/kg	0.5			-	-	-	-	< 0.5	-	-	-	< 0.5	-	-	-	-	-	-	-	-
	Benzo(a)pyrene	mg/kg	0.5		33	-	-	-	-	< 0.5	-	-	-	< 0.5	-	-	-	-	-	-	-	-
	Benzo(a)pyrene TEQ (medium bound)	mg/kg	0.6	3		-	-	-	-	0.6	-	-	-	0.6	-	-	-	-	-	-	-	-
	Benzo(b&j)fluoranthene	mg/kg	0.5			-	-	-	-	< 0.5	-	-	-	< 0.5	-	-	-	-	-	-	-	-
	Benzo(g,h,i)perylene	mg/kg	0.5			-	-	-	-	< 0.5	-	-	-	< 0.5	-	-	-	-	-	-	-	-
	Benzo(k)fluoranthene	mg/kg	0.5			-	-	-	-	< 0.5	-	-	-	< 0.5	-	-	-	-	-	-	-	-
	Chrysene	mg/kg	0.5			-	-	-	-	< 0.5	-	-	-	< 0.5	-	-	-	-	-	-	-	-
	Dibenz(a,h)anthracene	mg/kg	0.5			-	-	-	-	< 0.5	-	-	-	< 0.5	-	-	-	-	-	-	-	-
	Fluoranthene	mg/kg	0.5			-	-	-	-	< 0.5	-	-	-	< 0.5	-	-	-	-	-	-	-	-
	Fluorene	mg/kg	0.5			-	-	-	-	< 0.5	-	-	-	< 0.5	-	-	-	-	-	-	-	-
	Indeno(1,2,3-cd)pyrene	mg/kg	0.5			-	-	-	-	< 0.5	-	-	-	< 0.5	-	-	-	-	-	-	-	-
	Naphthalene	mg/kg	0.5		170	-	-	-	-	< 0.5	-	-	-	< 0.5	-	-	-	-	-	-	-	-
	Phenanthrene	mg/kg	0.5			-	-	-	-	< 0.5	-	-	-	< 0.5	-	-	-	-	-	-	-	-
	Pyrene	mg/kg	0.5			-	-	-	-	< 0.5	-	-	-	< 0.5	-	-	-	-	-	-	-	-
	Total PAH	mg/kg	0.5	300		-	-	-	-	< 0.5	-	-	-	< 0.5	-	-	-	-	-	-	-	-
BTEX	Benzene	mg/kg	0.1	0.7	50	-	-	-	-	< 0.1	-	-	-	< 0.1	-	-	-	-	-	-	-	-
	Toluene	mg/kg	0.1	480	85	-	-	-	-	< 0.1	-	-	-	< 0.1	-	-	-	-	-	-	-	-
	Ethylbenzene	mg/kg	0.1	NL	70	-	-	-	-	< 0.1	-	-	-	< 0.1	-	-	-	-	-	-	-	-
	Xylenes - Total	mg/kg	0.3	110	105	-	-	-	-	< 0.3	-	-	-	< 0.3	-	-	-	-	-	-	-	-
TRH	Naphthalene	mg/kg	0.5	5		-	-	-	-	< 0.5	-	-	-	< 0.5	-	-	-	-	-	-	-	-
	TRH C6-C10	mg/kg	20		180	-	-	-	-	< 20	-	-	-	< 20	-	-	-	-	-	-	-	-
	TRH C6-C10 less BTEX (F1)	mg/kg	20	50		-	-	-	-	< 20	-	-	-	< 20	-	-	-	-	-	-	-	-
	TRH >C10-C16	mg/kg	50		120	-	-	-	-	< 50	-	-	-	< 50	-	-	-	-	-	-	-	-
	TRH >C10-C16 less Naphthalene (F2)	mg/kg	50	280		-	-	-	-	< 50	-	-	-	< 50	-	-	-	-	-	-	-	-
	TRH >C16-C34	mg/kg	100		1300	-	-	-	-	< 100	-	-	-	< 100	-	-	-	-	-	-	-	-
TRH >C34-C40		mg/kg	100		5600	-	-	-	-	< 100	-	-	-	< 100	-	-	-	-	-	-	-	-

- Notes
- *

EIL based on pH of 7 and CEC of 8mg/kg, and Clay content 40%, and using Ambient Background Concentration obtained from Olszowy et al (1995) using urban soils, new suburbs with low traffic , 50% percentile.
- ND

Not detected
- NL

Not limiting
- Result

Concentration exceeds adopted HIL/HSL A
- Result

Concentration exceeds the adopted EIL/ESL A

¹ ASC NEPM (2013) Health Investigation & Screening Levels, Residential, Clay 0m to <1m

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

					Field ID	SS23-1	SS24-1	SS29-1	SS36-1	SS44-1	TP12-5 0.0-0.2	SS56-5	SS57-5	SS58-5	SS59-5	SS60-5	SS61-5	SS62-5	SS63-5	SS64-5	SS65-5	
					Date	22/03/2023	22/03/2023	22/03/2023	22/03/2023	21/03/2023	21/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	21/03/2023	21/03/2023	
					AEC	AEC1 - Current and Former Buildings										AEC 5 - Former Cropping/Orchards						
Analyses		Units	LOR	HIL A ¹	EIL A ²																	
OCPs	4,4'-DDD	mg/kg	0.05			<0.05	<0.5	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	<0.05	
	4,4'-DDE	mg/kg	0.05		180	<0.05	<0.5	<0.05	0.26	<0.05	-	<0.05	<0.05	0.05	0.24	<0.05	<0.05	<0.05	<0.5	<0.05	<0.05	
	4,4'-DDT	mg/kg	0.05			<0.05	<0.5	<0.05	0.19	<0.05	-	<0.05	<0.05	<0.05	0.06	<0.05	<0.05	<0.05	<0.5	<0.05	<0.05	
	p-HCH	mg/kg	0.05			<0.05	<0.5	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	<0.05	
	Aldrin	mg/kg	0.05			<0.05	<0.5	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	<0.05	
	Aldrin and Dieldrin (Total)*	mg/kg	0.05	6		0.07	<0.5	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	0.08	<0.05	<0.05	<0.05	<0.5	<0.05	<0.05	
	b-HCH	mg/kg	0.05			<0.05	<0.5	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	<0.05	
	Chlordanes - Total	mg/kg	0.1	50		<0.1	<1	<0.1	<0.1	<0.1	-	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	<0.05	
	DDT + DDE + DDD (Total)*	mg/kg	0.05	240		<0.05	<0.5	<0.05	0.45	<0.05	-	<0.05	<0.05	0.05	0.3	<0.05	<0.05	<0.05	<0.5	<0.05	<0.05	
	d-HCH	mg/kg	0.05			<0.05	<0.5	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	<0.05	
	Dieldrin	mg/kg	0.05			0.07	<0.5	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	0.08	<0.05	<0.05	<0.05	<0.5	<0.05	<0.05	
	Endosulfan I	mg/kg	0.05		270	<0.05	<0.5	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	<0.05	
	Endosulfan II	mg/kg	0.05			<0.05	<0.5	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	<0.05	
	Endosulfan sulphate	mg/kg	0.05			<0.05	<0.5	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	<0.05	
	Endrin	mg/kg	0.05	10		<0.05	<0.5	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	<0.05	
	Endrin aldehyde	mg/kg	0.05			<0.05	<0.5	0.07	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	<0.05	
	Endrin ketone	mg/kg	0.05			<0.05	<0.5	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	<0.05	
	p-HCH (Lindane)	mg/kg	0.05			<0.05	<0.5	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	<0.05	
	Heptachlor	mg/kg	0.05	6		<0.05	<0.5	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	<0.05	
Heptachlor epoxide	mg/kg	0.05			<0.05	<0.5	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	<0.05		
Hexachlorobenzene (HCB)	mg/kg	0.05	10		<0.05	<0.5	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	<0.05		
Methoxychlor	mg/kg	0.05	300		<0.05	<0.5	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.05	<0.05		
Toxaphene	mg/kg	0.5	20		<0.5	<10	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.5	<0.5		
OPP	Azinphos-methyl	mg/kg	0.2			<0.2	<0.5	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	
	Bolstar	mg/kg	0.2			<0.2	<0.5	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	
	Chlorfenvinphos	mg/kg	0.2			<0.2	<0.5	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	
	Chlorpyrifos	mg/kg	0.2			<0.2	<0.5	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	
	Chlorpyrifos-methyl	mg/kg	0.2	160		<0.2	<0.5	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	
	Coumaphos	mg/kg	2			<2	<5	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<5	<2	<2	
	Demeton-O	mg/kg	0.2			<0.2	<0.5	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	
	Demeton-S	mg/kg	0.2			<0.2	<0.5	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	
	Diazinon	mg/kg	0.2			<0.2	<0.5	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	
	Dichlorvos	mg/kg	0.2			<0.2	<0.5	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	
	Dimethoate	mg/kg	0.2			<0.2	<0.5	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	
	Disulfoton	mg/kg	0.2			<0.2	<0.5	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	
	EPN	mg/kg	0.2			<0.2	<0.5	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	
	Ethion	mg/kg	0.2			<0.2	<0.5	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	
	Ethoprop	mg/kg	0.2			<0.2	<0.5	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	
	Ethyl parathion	mg/kg	0.2			<0.2	<0.5	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	
	Fenitrothion	mg/kg	0.2			<0.2	<0.5	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	
	Fensulfthion	mg/kg	0.2			<0.2	<0.5	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	
	Fenthion	mg/kg	0.2			<0.2	<0.5	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	
	Malathion	mg/kg	0.2			<0.2	<0.5	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	
	Merphos	mg/kg	0.2			<0.2	<0.5	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	
	Methyl parathion	mg/kg	0.2			<0.2	<0.5	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	
	Mevinphos	mg/kg	0.2			<0.2	<0.5	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	
	Monocrotophos	mg/kg	2			<2	<5	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<5	<2	<2	
	Naled	mg/kg	0.2			<0.2	<0.5	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	
	Omethoate	mg/kg	0.2			<2	<5	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<5	<2	<2	
	Phorate	mg/kg	0.2			<0.2	<0.5	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	
	Phirimphos-methyl	mg/kg	0.2			<0.2	<0.5	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	
	Pyrazophos	mg/kg	0.2			<0.2	<0.5	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2	
Ronnel	mg/kg	0.2			<0.2	<0.5	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2		
Terbufos	mg/kg	0.2			<0.2	<0.5	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2		
Tetrachlorvinphos	mg/kg	0.2			<0.2	<0.5	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2		
Toxuthion	mg/kg	0.2			<0.2	<0.5	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2		
Trichloronate	mg/kg	0.2			<0.2	<0.5	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.5	<0.2	<0.2		
Herbicides	2,4,5-T	mg/kg	0.5	600		-	-	-	-	-	<0.5	-	<0.5	-	<0.5	-	-	-	-	-	-	
	2,4,5-TP	mg/kg	0.5			-																

Notes
Result Concentration exceeds adopted HIL/HSL A
Result Concentration exceeds the adopted EIL/ESL A
1 ASC NEPM (2013) Health Investigation Levels, Residential, Clay 0m to <1m
2 NEPC (2013) Soil Ecological Investigation & Screening Levels, residential

Table 3: Asbestos Results
39, 39A and 41 Brocklesby Road, Medowie NSW



	Sample ID	TP01-1_0.0-0.2	TP02-1_0.0-0.2	SS14-1	SS15-1	SS16-1	SS17-1	SS18-1	SS19-1	SS21-1	SS22-1	SS23-1	SS24-1	SS25-1	SS26-1	SS27-1	SS28-1	SS29-1	SS30-1
	Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
	Sample Date	21/03/2023	21/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023
	AEC	AEC1																	
	HIL/HSL A																		
ACM weight (g)		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ACM weight (kg)		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Soil density (kg/L)		1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Soil Volume (L)		10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Asbestos Content (%)		15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
%w/w ACM in Soil	0.01	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	0.00
%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%

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

Table 3: Asbestos Results
39, 39A and 41 Brocklesby Road, Medowie NSW



	Sample ID	SS31-1	SS32-1	SS33-1	SS34-1	SS35-1	SS36-1	SS37-1	SS38-1	SS39-1	SS40-1	SS41-1	SS42-1	SS43-1	SS44-1	SS45-1	SS46-1	TP06-2_0.0-0.2	TP66-2_0.0-0.2
	Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
	Sample Date	22/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	21/03/2023	21/03/2023	21/03/2023	21/03/2023	21/03/2023	21/03/2023	21/03/2023	21/03/2023	21/03/2023	21/03/2023	22/03/2023
	AEC																		
	HIL/HSL A																		
ACM weight (g)		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ACM weight (kg)		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Soil density (kg/L)		1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Soil Volume (L)		10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Asbestos Content (%)		15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
%w/w ACM in Soil	0.01	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	0.00
%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%	<0.001%	<0.001%	<0.001%	<0.001%	<0.001%	<0.001%

Notes:
%w/w asbestos in soil calculated using: % asbestos cont
Result Exceeds adopted criteria
Criteria from ASC NEPM (2013) Table 7 - Health Screenir



	Sample ID	TP67-2_0.0-0.2	TP68-2_0.0-0.2	TP69-2_0.0-0.2	TP70-2-0.0-0.2	TP71-2_0.0-0.2	TP71-2_FRAG	TP72-2_0.0-0.2	TP73-2_0.0-0.2	TP74-2_0.0-0.2	SS75-2	SS76-2	SS77-2	TP03-3_0.0-0.2	TP04-3_0.0-0.3	SS47-3	SS48-3
	Matrix	Soil	Soil	Soil	Soil	Soil	Material	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
	Sample Date	22/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	21/03/2023	21/03/2023	21/03/2023	21/03/2023	21/03/2023	21/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023
	AEC	AEC2															
	HIL/HSL A																
ACM weight (g)		0	0	0	0	7	-	0	0	0	0	0	0	0	0	0	0
ACM weight (kg)		0	0	0	0	0.007	-	0	0	0	0	0	0	0	0	0	0
Soil density (kg/L)		1.8	1.8	1.8	1.8	1.8	-	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
Soil Volume (L)		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
%w/w ACM in Soil	0.01	0.00	0.00	0.00	0.00	0.01	Detected	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%	<0.001%	-	<0.001%	<0.001%	<0.001%	<0.001%	<0.001%	<0.001%	<0.001%	<0.001%	<0.001%	<0.001%

Notes:
%w/w asbestos in soil calculated using: % asbestos cont
Result Exceeds adopted criteria
Criteria from ASC NEPM (2013) Table 7 - Health Screenir

Table 3: Asbestos Results
39, 39A and 41 Brocklesby Road, Medowie NSW



	Sample ID	SS49-3	SS50-3	SS51-3	SS52-3	SS53-3	SS54-3	SS55-3	TP07-4_0.0-0.2	TP08-4_0.0-0.2	TP09-4_0.0-0.2	TP11-4_0.0-0.2	TP12-5_0.0-0.2	TP13-5_0.0-0.2	SS56-5	SS57-5	SS58-5	SS59-5
	Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
	Sample Date	22/03/2023	21/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	22/03/2023	21/03/2023	21/03/2023	21/03/2023	21/03/2023	21/03/2023	21/03/2023	22/03/2023	21/03/2023	21/03/2023	22/03/2023
	AEC	AEC3							AEC4				AEC5					
	HIL/HSL A																	
ACM weight (g)		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ACM weight (kg)		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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
Soil Volume (L)		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
%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
%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%	-	-	-	-

Notes:
%w/w asbestos in soil calculated using: % asbestos cont
Result Exceeds adopted criteria
Criteria from ASC NEPM (2013) Table 7 - Health Screenir



	Sample ID	SS60-5	SS61-5	SS62-5	SS63-5	SS64-5	SS65-5
	Matrix	Soil	Soil	Soil	Soil	Soil	Soil
	Sample Date	22/03/2023	22/03/2023	22/03/2023	22/03/2023	21/03/2023	21/03/2023
	AEC						
	HIL/HSL A						
ACM weight (g)		0	0	0	0	0	0
ACM weight (kg)		0	0	0	0	0	0
Soil density (kg/L)		1.8	1.8	1.8	1.8	1.8	1.8
Soil Volume (L)		10	10	10	10	10	10
Asbestos Content (%)		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
%w/w FA/AF in Soil	0.001	-	-	-	-	-	-

Notes:
%w/w asbestos in soil calculated using: % asbestos cont
Result Exceeds adopted criteria
Criteria from ASC NEPM (2013) Table 7 - Health Screenir

Table 4: Soil Analytical Results - Microbiological
39, 39A and 41 Brocklesby Road, Medowie NSW

				AEC	AEC 4 - Septic Tanks				
				Field ID	TP07-4_0.9-1.0	TP08-4_0.9-1.0	TP09-4_0.9-1.0	TP11-4_0.2-0.3	TP11-4_1.0-1.1
				Date	21/03/2023	21/03/2023	21/03/2023	21/03/2023	21/03/2023
Analytes	Units	LOR	Biosolids ¹						
Micro	E.coli	MPN per g soil	0.1	<100	<10	<10	<10	<10	<10
	Thermotolerant Coliforms	MPN per g soil	1	<1000	<10	10	10	350	<10

Notes

Result Concentrations exceeds Microbiological/Pathogen adopted criteria

¹ NSW EPA (2000) Use and Disposal of Biosolids Products, Table 3.4 Initial Process Verification Standards, Table 3.5 Stabilisation Grade A Microbiological Standards

Table 5 - Quality Control Results
39, 39A and 41 Brocklesby Road, Medowie NSW NSW



		Sample ID		TP73-2_0.0-0.2	D.21.3.23	RPD %	TP73-2_0.0-0.2	T.21.3.23	RPD %	SS63-5	D.22.3.23	RPD %	SS63-5	T.22.3.23	RPD %			WB.22.3.23
		Date		21/03/2023	21/03/2023		21/03/2023	21/03/2023		22/03/2023	22/03/2023		22/03/2023	22/03/2023				22/03/2023
		Type		Primary	Duplicate		Primary	Triplicate		Primary	Duplicate		Primary	Triplicate				Wash Blank
Analytes		Soil Units	LOR													Water Units	Water LOR	
Metals	Arsenic	mg/kg	2	17	13	27	17	9	62	< 2	< 2	0	< 2	2	0	mg/L	0.001	< 0.001
	Cadmium	mg/kg	0.4	< 0.4	< 0.4	0	< 0.4	<0.3	0	< 0.4	< 0.4	0	< 0.4	<0.3	0	mg/L	0.0002	< 0.0002
	Chromium	mg/kg	5	300	420	33	300	420	33	13	12	8	13	12	8	mg/L	0.001	< 0.001
	Copper	mg/kg	5	120	40	100	120	14	158	14	14	0	14	15	7	mg/L	0.001	< 0.001
	Lead	mg/kg	5	16	21	27	16	24	40	12	11	9	12	10	18	mg/L	0.001	< 0.001
	Mercury	mg/kg	5	< 0.1	< 0.1	0	< 0.1	<0.05	0	< 0.1	< 0.1	0	< 0.1	<0.05	0	mg/L	0.0001	< 0.0001
	Nickel	mg/kg	5	74	28	90	74	5.6	172	< 5	< 5	0	< 5	1.8	94	mg/L	0.001	< 0.001
	Zinc	mg/kg	5	45	57	24	45	78	54	14	12	15	14	13	7	mg/L	0.005	< 0.005
PAHs	Acenaphthene	mg/kg	0.5	< 0.5	< 0.5	0	< 0.5	<0.1	0	-	< 0.5	-	-	<0.1	-	mg/L	0.001	< 0.001
	Acenaphthylene	mg/kg	0.5	< 0.5	< 0.5	0	< 0.5	<0.1	0	-	< 0.5	-	-	<0.1	-	mg/L	0.001	< 0.001
	Anthracene	mg/kg	0.5	< 0.5	< 0.5	0	< 0.5	<0.1	0	-	< 0.5	-	-	<0.1	-	mg/L	0.001	< 0.001
	Benz(a)anthracene	mg/kg	0.5	< 0.5	< 0.5	0	< 0.5	<0.1	0	-	< 0.5	-	-	<0.1	-	mg/L	0.001	< 0.001
	Benzo(a)pyrene	mg/kg	0.5	< 0.5	< 0.5	0	< 0.5	<0.1	0	-	< 0.5	-	-	<0.1	-	mg/L	0.001	< 0.001
	Benzo(a)pyrene TEQ (medium bound)	mg/kg	0.6	0.6	0.6	0	0.6	0.36	67	-	0.6	-	-	<0.3	-	-	-	-
	Benzo(b&j)fluoranthene	mg/kg	0.5	< 0.5	< 0.5	0	< 0.5	<0.1	0	-	< 0.5	-	-	<0.1	-	mg/L	0.001	< 0.001
	Benzo(g,h,i)perylene	mg/kg	0.5	< 0.5	< 0.5	0	< 0.5	<0.1	0	-	< 0.5	-	-	<0.1	-	mg/L	0.001	< 0.001
	Benzo(k)fluoranthene	mg/kg	0.5	< 0.5	< 0.5	0	< 0.5	<0.1	0	-	< 0.5	-	-	<0.1	-	mg/L	0.001	< 0.001
	Chrysene	mg/kg	0.5	< 0.5	< 0.5	0	< 0.5	<0.1	0	-	< 0.5	-	-	<0.1	-	mg/L	0.001	< 0.001
	Dibenz(a,h)anthracene	mg/kg	0.5	< 0.5	< 0.5	0	< 0.5	<0.1	0	-	< 0.5	-	-	<0.1	-	mg/L	0.001	< 0.001
	Fluoranthene	mg/kg	0.5	< 0.5	< 0.5	0	< 0.5	0.2	86	-	< 0.5	-	-	<0.1	-	mg/L	0.001	< 0.001
	Fluorene	mg/kg	0.5	< 0.5	< 0.5	0	< 0.5	<0.1	0	-	< 0.5	-	-	<0.1	-	mg/L	0.001	< 0.001
	Indeno(1.2.3-cd)pyrene	mg/kg	0.5	< 0.5	< 0.5	0	< 0.5	<0.1	0	-	< 0.5	-	-	<0.1	-	mg/L	0.001	< 0.001
	Naphthalene	mg/kg	0.5	< 0.5	< 0.5	0	< 0.5	<0.1	0	-	< 0.5	-	-	<0.1	-	mg/L	0.001	< 0.001
	Phenanthrene	mg/kg	0.5	< 0.5	< 0.5	0	< 0.5	<0.1	0	-	< 0.5	-	-	<0.1	-	mg/L	0.001	< 0.001
	Pyrene	mg/kg	0.5	< 0.5	< 0.5	0	< 0.5	0.2	86	-	< 0.5	-	-	<0.1	-	mg/L	0.001	< 0.001
	Total PAH	mg/kg	0.5	< 0.5	< 0.5	0	< 0.5	<0.8	0	-	< 0.5	-	-	<0.8	-	mg/L	0.001	< 0.001
BTEX	Benzene	mg/kg	0.1	< 0.1	< 0.1	0	< 0.1	< 0.1	0	-	< 0.1	-	-	< 0.1	-	mg/L	0.001	< 0.001
	Toluene	mg/kg	0.1	< 0.1	< 0.1	0	< 0.1	< 0.1	0	-	< 0.1	-	-	< 0.1	-	mg/L	0.001	< 0.001
	Ethylbenzene	mg/kg	0.1	< 0.1	< 0.1	0	< 0.1	< 0.1	0	-	< 0.1	-	-	< 0.1	-	mg/L	0.001	< 0.001
	Xylenes - Total	mg/kg	0.3	< 0.3	< 0.3	0	< 0.3	< 0.3	0	-	< 0.3	-	-	< 0.3	-	mg/L	0.003	< 0.003
TRH	Naphthalene	mg/kg	0.5	< 0.5	< 0.5	0	< 0.5	<0.1	0	-	< 0.5	-	-	<0.1	-	mg/L	0.01	< 0.01
	TRH C6-C10	mg/kg	20	< 20	< 20	0	< 20	<25	0	-	< 20	-	-	<25	-	mg/L	0.02	< 0.02
	TRH C6-C10 less BTEX (F1)	mg/kg	20	< 20	< 20	0	< 20	<25	0	-	< 20	-	-	<25	-	mg/L	0.02	< 0.02
	TRH >C10-C16	mg/kg	50	< 50	< 50	0	< 50	<25	0	-	< 50	-	-	59	-	mg/L	0.05	< 0.05
	TRH >C10-C16 less Naphthalene (F2)	mg/kg	50	< 50	< 50	0	< 50	<25	0	-	< 50	-	-	59	-	mg/L	0.05	< 0.05
	TRH >C16-C34	mg/kg	100	< 100	< 100	0	< 100	<90	0	-	380	-	-	360	-	mg/L	0.1	< 0.1
	TRH >C34-C40	mg/kg	100	< 100	< 100	0	< 100	<120	0	-	130	-	-	<120	-	mg/L	0.1	< 0.1

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

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

APPENDIX C:

Test Pit Logs

ENGINEERING LOG - TEST PIT

CLIENT: McCLOY GROUP PTY LTD

PROJECT: PROPOSED REZONING

LOCATION: 39, 39A and 41 BROCKLESBY ROAD, MEDOWIE

TEST PIT NO:

TP01-1

PAGE:

1 OF 1

JOB NO:

NEW23P-0009

LOGGED BY:

TH

DATE:

21/3/23

EQUIPMENT TYPE: 2.7 Tonne Excavator

SURFACE RL:

TEST PIT LENGTH: 2.0 m WIDTH: 0.5 m

DATUM:

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations	
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result		
E	Not Encountered	E		0.5		CI	FILL: CLAY - medium plasticity, brown to dark brown, trace fine to medium grained sand, root affected.	M				FILL	
		0.20m											
		0.50m					CLAY - medium to high plasticity, orange-brown.	M < w _p					RESIDUAL SOIL
		E 0.60m					0.60m						
					Hole Terminated at 0.60 m								
				1.0									
				1.5									

LEGEND:

Water

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

Strata Changes

- Gradational or transitional strata
- Definitive or distinct strata change

Notes, Samples and Tests

- U₅₀ 50mm Diameter tube sample
- CBR Bulk sample for CBR testing
- E Environmental sample (Glass jar, sealed and chilled on site)
- ASS Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)
- B Bulk Sample

Field Tests

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

Consistency

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

UCS (kPa)

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

Moisture Condition

- D Dry
- M Moist
- W Wet
- W_p Plastic Limit
- W_L Liquid Limit

Density

- V Very Loose
- L Loose
- MD Medium Dense
- D Dense
- VD Very Dense

- Density Index <15%
- Density Index 15 - 35%
- Density Index 35 - 65%
- Density Index 65 - 85%
- Density Index 85 - 100%

ENGINEERING LOG - TEST PIT

CLIENT: McCLOY GROUP PTY LTD

PROJECT: PROPOSED REZONING

LOCATION: 39, 39A and 41 BROCKLESBY ROAD, MEDOWIE

TEST PIT NO:

TP02-1

PAGE:

1 OF 1

JOB NO:

NEW23P-0009

LOGGED BY:

TH

DATE:

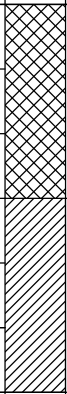
21/3/23

EQUIPMENT TYPE: 2.7 Tonne Excavator

SURFACE RL:

TEST PIT LENGTH: 2.0 m WIDTH: 0.5 m

DATUM:

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	
E	Not Encountered	E		0.5		CL	FILL: CLAY - medium plasticity, brown to dark brown, trace fine to medium grained sand, root affected.	M				FILL
		0.20m				0.30m	CLAY - medium to high plasticity, orange-brown.	M < w _p				RESIDUAL SOIL
		0.50m										
		E 0.60m										
						Hole Terminated at 0.60 m						
				1.0								
				1.5								

LEGEND:

Water

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

Strata Changes

-  Gradational or transitional strata
-  Definitive or distinct strata change

Notes, Samples and Tests

- U₅₀ 50mm Diameter tube sample
- CBR Bulk sample for CBR testing
- E Environmental sample (Glass jar, sealed and chilled on site)
- ASS Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)
- B Bulk Sample

Field Tests

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

Consistency

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

UCS (kPa)

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

Moisture Condition

- D Dry
- M Moist
- W Wet
- W_p Plastic Limit
- W_L Liquid Limit

Density

- V Very Loose
- L Loose
- MD Medium Dense
- D Dense
- VD Very Dense

- Density Index <15%
- Density Index 15 - 35%
- Density Index 35 - 65%
- Density Index 65 - 85%
- Density Index 85 - 100%

ENGINEERING LOG - TEST PIT

CLIENT: McCLOY GROUP PTY LTD

PROJECT: PROPOSED REZONING

LOCATION: 39, 39A and 41 BROCKLESBY ROAD, MEDOWIE

TEST PIT NO:

TP03-3

PAGE:

1 OF 1

JOB NO:

NEW23P-0009

LOGGED BY:

TH

DATE:

22/3/23

EQUIPMENT TYPE: 2.7 Tonne Excavator

SURFACE RL:

TEST PIT LENGTH: 2.0 m WIDTH: 0.5 m

DATUM:

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	
E	Not Encountered	E		0.5		CI	FILL: CLAY - medium plasticity, orange-brown, trace fine grained sand, root affected.	M < w _p				FILL
		0.20m										0.30m
		0.50m			CH							
		0.60m			0.60m	Hole Terminated at 0.60 m						
				1.0								
				1.5								

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

ENGINEERING LOG - TEST PIT

CLIENT: McCLOY GROUP PTY LTD

PROJECT: PROPOSED REZONING

LOCATION: 39, 39A and 41 BROCKLESBY ROAD, MEDOWIE

TEST PIT NO:

TP06-2

PAGE:

1 OF 1

JOB NO:

NEW23P-0009

LOGGED BY:

TH

DATE:

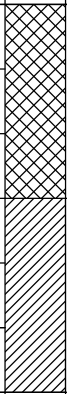
21/3/23

EQUIPMENT TYPE: 2.7 Tonne Excavator

SURFACE RL:

TEST PIT LENGTH: 2.0 m WIDTH: 0.5 m

DATUM:

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	
E	Not Encountered	E		0.5		SP	FILL: SAND - fine to medium grained, pale brown to pale grey, root affected.	D				FILL
		0.20m										
		0.50m					CLAY - medium plasticity, orange-brown, trace fine grained sand.	M < w _p				RESIDUAL SOIL
		E 0.60m										
							Hole Terminated at 0.60 m					

LEGEND:

Water

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

Strata Changes

-  Gradational or transitional strata
-  Definitive or distinct strata change

Notes, Samples and Tests

- U₅₀ 50mm Diameter tube sample
- CBR Bulk sample for CBR testing
- E Environmental sample (Glass jar, sealed and chilled on site)
- ASS Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)
- B Bulk Sample

Field Tests

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

Consistency

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

UCS (kPa)

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

Moisture Condition

- D Dry
- M Moist
- W Wet
- W_p Plastic Limit
- W_L Liquid Limit

Density

- V Very Loose
- L Loose
- MD Medium Dense
- D Dense
- VD Very Dense

- Density Index <15%
- Density Index 15 - 35%
- Density Index 35 - 65%
- Density Index 65 - 85%
- Density Index 85 - 100%

ENGINEERING LOG - TEST PIT

CLIENT: McCLOY GROUP PTY LTD

PROJECT: PROPOSED REZONING

LOCATION: 39, 39A and 41 BROCKLESBY ROAD, MEDOWIE

TEST PIT NO:

TP07-4

PAGE:

1 OF 1

JOB NO:

NEW23P-0009

LOGGED BY:

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DATE:

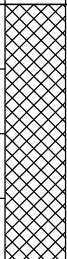
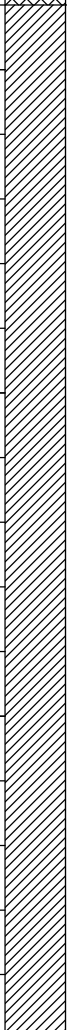
21/3/23

EQUIPMENT TYPE: 2.7 Tonne Excavator

SURFACE RL:

TEST PIT LENGTH: 2.0 m WIDTH: 0.5 m

DATUM:

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	
E	Not Encountered	0.20m				SC	FILL/TOPSOIL: Sandy CLAY - medium plasticity, dark brown, fine to medium grained sand, trace concrete, plastic, geofab, root affected.	D - M				FILL / TOPSOIL
		E 0.30m										
		0.90m		0.5		CH	CLAY - medium to high plasticity, orange-brown with some red. becoming red-grey	M < w _p				RESIDUAL SOIL
		E 1.00m		1.0								
		1.50m		1.5								
		E 1.60m										
		1.90m										
		E 2.00m		2.00m								

LEGEND:

Water

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

Strata Changes

-  Gradational or transitional strata
-  Definitive or distinct strata change

Notes, Samples and Tests

Hole Terminated at 2.00 m

- U₅₀ 50mm Diameter tube sample
- CBR Bulk sample for CBR testing
- E Environmental sample (Glass jar, sealed and chilled on site)
- ASS Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)
- B Bulk Sample

Field Tests

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

Consistency

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

UCS (kPa)

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

Moisture Condition

- D Dry
- M Moist
- W Wet
- W_p Plastic Limit
- W_L Liquid Limit

Density

- V Very Loose
- L Loose
- MD Medium Dense
- D Dense
- VD Very Dense

- Density Index <15%
- Density Index 15 - 35%
- Density Index 35 - 65%
- Density Index 65 - 85%
- Density Index 85 - 100%

ENGINEERING LOG - TEST PIT

CLIENT: McCLOY GROUP PTY LTD

PROJECT: PROPOSED REZONING

LOCATION: 39, 39A and 41 BROCKLESBY ROAD, MEDOWIE

TEST PIT NO:

TP08-4

PAGE:

1 OF 1

JOB NO:

NEW23P-0009

LOGGED BY:

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DATE:

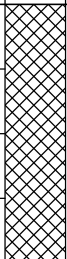
21/3/23

EQUIPMENT TYPE: 2.7 Tonne Excavator

SURFACE RL:

TEST PIT LENGTH: 2.0 m WIDTH: 0.5 m

DATUM:

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations	
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result		
E	Not Encountered	0.20m				CI	FILL/TOPSOIL: Sandy CLAY - low to medium plasticity, brown-dark brown, fine to medium grained sand, root affected.	M				FILL / TOPSOIL	
		E 0.30m											
								0.40m	CLAY - medium to high plasticity, pale brown to red-brown.	M < w _p			RESIDUAL SOIL
								0.5					
					</								

LEGEND:

Water

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

Strata Changes

-  Gradational or transitional strata
-  Definitive or distinct strata change

Notes, Samples and Tests

Hole Terminated at 2.00 m

- U₅₀ 50mm Diameter tube sample
- CBR Bulk sample for CBR testing
- E Environmental sample (Glass jar, sealed and chilled on site)
- ASS Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)
- B Bulk Sample

Field Tests

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

Consistency

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

UCS (kPa)

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

Moisture Condition

- D Dry
- M Moist
- W Wet
- W_p Plastic Limit
- W_L Liquid Limit

Density

- V Very Loose
- L Loose
- MD Medium Dense
- D Dense
- VD Very Dense

- Density Index <15%
- Density Index 15 - 35%
- Density Index 35 - 65%
- Density Index 65 - 85%
- Density Index 85 - 100%

ENGINEERING LOG - TEST PIT

CLIENT: McCLOY GROUP PTY LTD

PROJECT: PROPOSED REZONING

LOCATION: 39, 39A and 41 BROCKLESBY ROAD, MEDOWIE

TEST PIT NO:

TP09-4

PAGE:

1 OF 1

JOB NO:

NEW23P-0009

LOGGED BY:

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DATE:

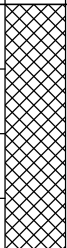
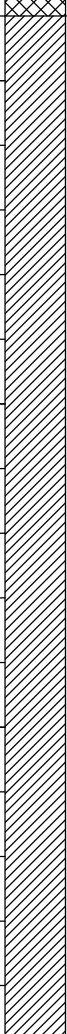
21/3/23

EQUIPMENT TYPE: 2.7 Tonne Excavator

SURFACE RL:

TEST PIT LENGTH: 2.0 m WIDTH: 0.5 m

DATUM:

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	
E	Not Encountered	0.20m				CL	FILL/TOPSOIL: Sandy CLAY - low plasticity, brown, fine grained sand, root affected.	D - M				FILL / TOPSOIL
		E 0.30m										
						CH	0.40m	CLAY - medium to high plasticity, orange-brown with some red.	M < w _p			RESIDUAL SOIL
		0.90m		0.5								
		E 1.00m		1.0								
		1.50m		1.5								
		E 1.60m										
		1.90m										
E 2.00m		2.00m										

LEGEND:

Water

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

Strata Changes

-  Gradational or transitional strata
-  Definitive or distinct strata change

Notes, Samples and Tests

- Hole Terminated at 2.00 m
- U₅₀ 50mm Diameter tube sample
 - CBR Bulk sample for CBR testing
 - E Environmental sample (Glass jar, sealed and chilled on site)
 - ASS Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)
 - B Bulk Sample
- ### Field Tests
- PID Photoionisation detector reading (ppm)
 - DCP(x-y) Dynamic penetrometer test (test depth interval shown)
 - HP Hand Penetrometer test (UCS kPa)

Consistency

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

UCS (kPa)

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

Moisture Condition

- D Dry
- M Moist
- W Wet
- W_p Plastic Limit
- W_L Liquid Limit

Density

- V Very Loose
- L Loose
- MD Medium Dense
- D Dense
- VD Very Dense

- Density Index <15%
- Density Index 15 - 35%
- Density Index 35 - 65%
- Density Index 65 - 85%
- Density Index 85 - 100%

ENGINEERING LOG - TEST PIT

CLIENT: McCLOY GROUP PTY LTD

PROJECT: PROPOSED REZONING

LOCATION: 39, 39A and 41 BROCKLESBY ROAD, MEDOWIE

TEST PIT NO:

TP11-4

PAGE:

1 OF 1

JOB NO:

NEW23P-0009

LOGGED BY:

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DATE:

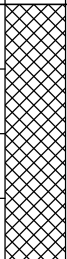
21/3/23

EQUIPMENT TYPE: 2.7 Tonne Excavator

SURFACE RL:

TEST PIT LENGTH: 2.0 m WIDTH: 0.5 m

DATUM:

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations	
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result		
E	Not Encountered	0.20m				CI	FILL/TOPSOIL: Sandy CLAY - low to medium plasticity, brown to dark brown with grey, fine to medium grained sand, trace roof tile, concrete, root affected.	D - M				FILL / TOPSOIL	
		E 0.30m											
								0.40m	CLAY - medium to high plasticity, orange-brown with some red.				RESIDUAL SOIL
						</							

LEGEND:

Water

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

Strata Changes

-  Gradational or transitional strata
-  Definitive or distinct strata change

Notes, Samples and Tests

Hole Terminated at 2.00 m

- U₅₀ 50mm Diameter tube sample
- CBR Bulk sample for CBR testing
- E Environmental sample (Glass jar, sealed and chilled on site)
- ASS Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)
- B Bulk Sample

Field Tests

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

Consistency

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

UCS (kPa)

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

Moisture Condition

- D Dry
- M Moist
- W Wet
- W_p Plastic Limit
- W_L Liquid Limit

Density

- V Very Loose
- L Loose
- MD Medium Dense
- D Dense
- VD Very Dense

- Density Index <15%
- Density Index 15 - 35%
- Density Index 35 - 65%
- Density Index 65 - 85%
- Density Index 85 - 100%

ENGINEERING LOG - TEST PIT

CLIENT: McCLOY GROUP PTY LTD

PROJECT: PROPOSED REZONING

LOCATION: 39, 39A and 41 BROCKLESBY ROAD, MEDOWIE

TEST PIT NO:

TP13-5

PAGE:

1 OF 1

JOB NO:

NEW23P-0009

LOGGED BY:

TH

DATE:

21/3/23

EQUIPMENT TYPE: 2.7 Tonne Excavator

SURFACE RL:

TEST PIT LENGTH: 2.0 m WIDTH: 0.5 m

DATUM:

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations				
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result					
E	Not Encountered	E		0.5		CL	FILL: CLAY - medium plasticity, brown to dark brown, trace fine to medium grained sand, root affected.	M				FILL				
		0.20m														
		0.50m												CLAY - medium to high plasticity, orange-brown.		RESIDUAL SOIL
		E 0.60m														
							Hole Terminated at 0.60 m									
				1.0												
				1.5												

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

ENGINEERING LOG - TEST PIT

CLIENT: McCLOY GROUP PTY LTD

PROJECT: PROPOSED REZONING

LOCATION: 39, 39A and 41 BROCKLESBY ROAD, MEDOWIE

TEST PIT NO:

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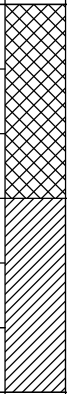
22/3/23

EQUIPMENT TYPE: 2.7 Tonne Excavator

SURFACE RL:

TEST PIT LENGTH: 2.0 m WIDTH: 0.5 m

DATUM:

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	
E	Not Encountered	E		0.5		CI	FILL: CLAY - medium plasticity, orange-brown to red-brown, trace fine grained sand	D - M				FILL
		0.20m				0.30m						RESIDUAL SOIL
		0.50m				CH	CLAY - medium to high plasticity, orange-brown to pale brown.	M < w _p				
		E 0.60m				0.60m	Hole Terminated at 0.60 m					
				1.0								
				1.5								

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

ENGINEERING LOG - TEST PIT

CLIENT: McCLOY GROUP PTY LTD

PROJECT: PROPOSED REZONING

LOCATION: 39, 39A and 41 BROCKLESBY ROAD, MEDOWIE

TEST PIT NO:

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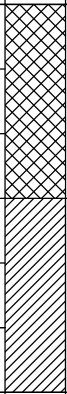
22/3/23

EQUIPMENT TYPE: 2.7 Tonne Excavator

SURFACE RL:

TEST PIT LENGTH: 2.0 m WIDTH: 0.5 m

DATUM:

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	
E	Not Encountered	E		0.5		CI	FILL: CLAY - medium plasticity, orange-brown to red-brown, trace fine grained sand	D - M				FILL
		0.20m				0.30m						RESIDUAL SOIL
		0.50m				CH	CLAY - medium to high plasticity, orange-brown to pale brown.	M < w _p				
		E 0.60m				0.60m	Hole Terminated at 0.60 m					
				1.0								
				1.5								

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

ENGINEERING LOG - TEST PIT

CLIENT: McCLOY GROUP PTY LTD

PROJECT: PROPOSED REZONING

LOCATION: 39, 39A and 41 BROCKLESBY ROAD, MEDOWIE

TEST PIT NO:

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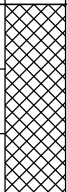
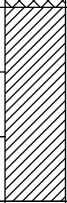
22/3/23

EQUIPMENT TYPE: 2.7 Tonne Excavator

SURFACE RL:

TEST PIT LENGTH: 2.0 m WIDTH: 0.5 m

DATUM:

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	
	Not Encountered	E		0.5		CI	FILL: CLAY - medium plasticity, orange-brown to red-brown, trace fine grained sand	D - M				FILL
		0.20m										
		0.50m				CH	CLAY - medium to high plasticity, orange-brown to pale brown.	M < w _p				RESIDUAL SOIL
		E 0.60m										
							Hole Terminated at 0.60 m					
				1.0								
				1.5								

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

ENGINEERING LOG - TEST PIT

CLIENT: McCLOY GROUP PTY LTD

PROJECT: PROPOSED REZONING

LOCATION: 39, 39A and 41 BROCKLESBY ROAD, MEDOWIE

TEST PIT NO:

TP69-2

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JOB NO:

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DATE:

22/3/23

EQUIPMENT TYPE: 2.7 Tonne Excavator

SURFACE RL:

TEST PIT LENGTH: 2.0 m WIDTH: 0.5 m

DATUM:

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	
E	Not Encountered	E		0.5		SP	FILL: SAND - fine to coarse grained, dark grey to grey, trace glass, brick, concrete, potential asbestos containing material.	D				FILL
		0.20m										
		0.40m				CI	CLAY: medium plasticity, brown-orange.	M < w _p				RESIDUAL SOIL
		E 0.50m										
							Hole Terminated at 0.50 m					

LEGEND:

Water

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

Strata Changes

-  Gradational or transitional strata
-  Definitive or distinct strata change

Notes, Samples and Tests

- U₅₀ 50mm Diameter tube sample
- CBR Bulk sample for CBR testing
- E Environmental sample (Glass jar, sealed and chilled on site)
- ASS Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)
- B Bulk Sample

Field Tests

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

Consistency

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

UCS (kPa)

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

Moisture Condition

- D Dry
- M Moist
- W Wet
- W_p Plastic Limit
- W_L Liquid Limit

Density

- V Very Loose
- L Loose
- MD Medium Dense
- D Dense
- VD Very Dense

- Density Index <15%
- Density Index 15 - 35%
- Density Index 35 - 65%
- Density Index 65 - 85%
- Density Index 85 - 100%

ENGINEERING LOG - TEST PIT

CLIENT: McCLOY GROUP PTY LTD

PROJECT: PROPOSED REZONING

LOCATION: 39, 39A and 41 BROCKLESBY ROAD, MEDOWIE

TEST PIT NO:

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22/3/23

EQUIPMENT TYPE: 2.7 Tonne Excavator

SURFACE RL:

TEST PIT LENGTH: 2.0 m WIDTH: 0.5 m

DATUM:

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	
E	Not Encountered	E		0.5		SP	FILL: SAND - fine to coarse grained, dark grey to grey, trace glass, brick, concrete, potential asbestos containing material.	D				FILL
		0.20m				0.30m	CLAY: medium plasticity, brown-orange.	M < w _p				RESIDUAL SOIL
		0.40m										
		E 0.50m			CI							
							Hole Terminated at 0.50 m					

LEGEND:

Water

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

Strata Changes

-  Gradational or transitional strata
-  Definitive or distinct strata change

Notes, Samples and Tests

- U₅₀ 50mm Diameter tube sample
- CBR Bulk sample for CBR testing
- E Environmental sample (Glass jar, sealed and chilled on site)
- ASS Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)
- B Bulk Sample

Field Tests

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

Consistency

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

UCS (kPa)

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

Moisture Condition

- D Dry
- M Moist
- W Wet
- W_p Plastic Limit
- W_L Liquid Limit

Density

- V Very Loose
- L Loose
- MD Medium Dense
- D Dense
- VD Very Dense

- Density Index <15%
- Density Index 15 - 35%
- Density Index 35 - 65%
- Density Index 65 - 85%
- Density Index 85 - 100%

ENGINEERING LOG - TEST PIT

CLIENT: McCLOY GROUP PTY LTD

PROJECT: PROPOSED REZONING

LOCATION: 39, 39A and 41 BROCKLESBY ROAD, MEDOWIE

TEST PIT NO:

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DATE:

22/3/23

EQUIPMENT TYPE: 2.7 Tonne Excavator

SURFACE RL:

TEST PIT LENGTH: 2.0 m WIDTH: 0.5 m

DATUM:

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations	
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result		
E	Not Encountered	E		0.5		SP	FILL: SAND - fine to coarse grained, dark grey to grey, trace glass, brick, concrete, potential asbestos containing material.	D				FILL	
		0.20m				0.30m	CLAY: medium plasticity, brown-orange.						
		0.40m			CI			D - M					RESIDUAL SOIL
		E 0.50m											
							Hole Terminated at 0.50 m						

LEGEND:

Water

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

Strata Changes

-  Gradational or transitional strata
-  Definitive or distinct strata change

Notes, Samples and Tests

- U₅₀ 50mm Diameter tube sample
- CBR Bulk sample for CBR testing
- E Environmental sample (Glass jar, sealed and chilled on site)
- ASS Acid Sulfate Soil Sample (Plastic bag, air expelled, chilled)
- B Bulk Sample

Field Tests

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

Consistency

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

UCS (kPa)

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

Moisture Condition

- D Dry
- M Moist
- W Wet
- W_p Plastic Limit
- W_L Liquid Limit

Density

- V Very Loose
- L Loose
- MD Medium Dense
- D Dense
- VD Very Dense

- Density Index <15%
- Density Index 15 - 35%
- Density Index 35 - 65%
- Density Index 65 - 85%
- Density Index 85 - 100%

ENGINEERING LOG - TEST PIT

CLIENT: McCLOY GROUP PTY LTD

PROJECT: PROPOSED REZONING

LOCATION: 39, 39A and 41 BROCKLESBY ROAD, MEDOWIE

TEST PIT NO:

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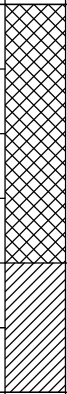
21/3/23

EQUIPMENT TYPE: 2.7 Tonne Excavator

SURFACE RL:

TEST PIT LENGTH: 2.0 m WIDTH: 0.5 m

DATUM:

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	
E	Not Encountered	E		0.5		SP	FILL: Clayey Gravelly SAND - fine to medium grained, brown to grey, fine to medium grained angular gravel, fines of low plasticity, trace slag, concrete, asphalt.	D - M				FILL
		0.20m										
		0.50m					CLAY - medium to high plasticity, orange-brown.	RESIDUAL SOIL				
		E 0.60m					0.60m					
							Hole Terminated at 0.60 m					
				1.0								
				1.5								

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

ENGINEERING LOG - TEST PIT

CLIENT: McCLOY GROUP PTY LTD

PROJECT: PROPOSED REZONING

LOCATION: 39, 39A and 41 BROCKLESBY ROAD, MEDOWIE

TEST PIT NO:

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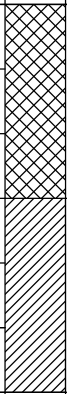
21/3/23

EQUIPMENT TYPE: 2.7 Tonne Excavator

SURFACE RL:

TEST PIT LENGTH: 2.0 m WIDTH: 0.5 m

DATUM:

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations	
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result		
E	Not Encountered	E		0.5		SP	FILL: Clayey Gravelly SAND - fine to medium grained, brown to grey, fine to medium grained angular gravel, fines of low plasticity, trace slag, concrete, asphalt.	D - M				FILL	
		0.20m										RESIDUAL SOIL	
		0.50m					CH	CLAY - medium to high plasticity, orange-brown.				M < w _p	
		E 0.60m					0.60m	Hole Terminated at 0.60 m					
				1.0									
				1.5									

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

ENGINEERING LOG - TEST PIT

CLIENT: McCLOY GROUP PTY LTD

PROJECT: PROPOSED REZONING

LOCATION: 39, 39A and 41 BROCKLESBY ROAD, MEDOWIE

TEST PIT NO:

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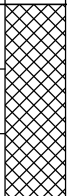
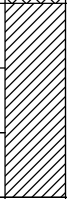
21/3/23

EQUIPMENT TYPE: 2.7 Tonne Excavator

SURFACE RL:

TEST PIT LENGTH: 2.0 m WIDTH: 0.5 m

DATUM:

Drilling and Sampling					Material description and profile information					Field Test		Structure and additional observations
METHOD	WATER	SAMPLES	RL (m)	DEPTH (m)	GRAPHIC LOG	CLASSIFICATION SYMBOL	MATERIAL DESCRIPTION: Soil type, plasticity/particle characteristics, colour, minor components	MOISTURE CONDITION	CONSISTENCY DENSITY	Test Type	Result	
E	Not Encountered	E		0.5		SP	FILL: Clayey Gravelly SAND - fine to medium grained, brown to grey, fine to medium grained angular gravel, fines of low plasticity, trace slag, concrete, asphalt.	D - M				FILL
		0.20m				0.30m						RESIDUAL SOIL
		0.50m				CH	CLAY - medium to high plasticity, orange-brown.	M < w _p				
		E 0.60m				0.60m	Hole Terminated at 0.60 m					
				1.0								
				1.5								

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

APPENDIX D:

Data Validation Report

QA/QC DATA VALIDATION REPORT**Job No: NEW23P-0009AB****Eurofins report: 974150S, 974150-AID,****SGS reports: SE245060, SE245327****1. SAMPLE HANDLING**

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

Sampling Handling was:

Satisfactory :	✓	Partially Satisfactory:	Unsatisfactory:
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2. PRECISION AND ACCURACY ASSESSMENT

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

Laboratory Precision and Accuracy was:

Satisfactory :	✓	Partially Satisfactory:	Unsatisfactory:
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3. FIELD QA/QC**Soil and Water Samples**

	Soil
No. Samples Analysed	73
No. of Duplicates	2
No. of Triplicates	2
No. of Wash Blanks	1
No. of Trip Blanks	0
No. of Trip Spikes	0

No. Days Sampling

Item	Soil
Number of Days Sampling	2
Number of Sampling Events	1

Field Duplicates

Item	Yes/No	Comments
Were an adequate number of field duplicates collected?	Yes	Duplicates collected at a rate of 1 per 20 samples.
Were RPDs within control limits? No Limit for 5-10 x EQL and 30% for >10 x EQL	No	RPDs were within the acceptable range with the exception of duplicate pair TP73-2_0.0-0.2/ D.21.3.23 for chromium (33%), copper (100%) and nickel (90%) and triplicate pair TP73-2_0.0-0.2/T.21.3.23 for chromium (33%), copper (158%), nickel (172%) and zinc (54%). These RPDs are considered to be due to the heterogeneous distribution of metal contaminants in surface soils as observed during sampling and are not considered to affect the overall data representativeness and usability. It is noted that low concentrations can exaggerate the percentage differences with respect to small total concentrations, therefore where results for primary and duplicate sample were less than 10 times the LOR, the RPDs have been disregarded.

Trip Blanks/Trip Spikes

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

Rinsate Samples

Item	Yes/No	Comments
Were an adequate number of rinsate samples used? (1 per day of using reusable sampling equipment – trowel, hand auger etc)	Yes	-
Were the rinsate samples free of contaminants? (If no, comment whether the contaminants present are also detected in the samples and whether they are common laboratory chemicals).	Yes	-

4. LABORATORY INTERNAL QUALITY CONTROL PROCEDURES

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

Item	Yes/No	Comments
B) Were the laboratory blanks and/or reagent blanks free of contamination?	Yes	-

Item	Yes/No	Comments
C) Were the spike recoveries within control limits? I: Organics/inorganics/metals (50% to 150%) II: Phenols (20% to 130%)	Yes	Matrix spike recoveries were within the control limits with the exception of the following: - MCPA where Eurofins quoted Q08 which states "The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference." - TRH analytes where SGS quoted 5 which states "Recovery failed acceptance criteria due to the presence of significant concentration of analytes (i.e. the concentration of analyte exceeds the spike level)." Based on the above, and as no elevated TRH was reported on the site, the recoveries are considered acceptable.
D) Were the RPDs of the laboratory duplicates within control limits?	Yes	Laboratory duplicate RPDs were recorded within the control limits, with the exception of the following: - Eurofins duplicate RPDs for chromium and zinc RPDs, the laboratory 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 Q02 which states "The duplicate %RPD is outside the recommended acceptance criteria. Further analysis indicates sample heterogeneity as the cause". - SGS duplicate RPDs for nickel, lead and TRH analytes, the laboratory quotes 2 which states "RPD failed acceptance criteria due to sample heterogeneity". Based on this, the RPDs are considered acceptable.
E) Were the surrogate recoveries within control limits?	Yes	-

Laboratory Internal QA/QC was:

Satisfactory :	✓	Partially Satisfactory:	Unsatisfactory:
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5. DATA USABILITY

Item	Yes/No	Comments
Was the data directly usable?	Yes	

QA/QC DATA VALIDATION REPORT

Was the data usable with the following corrections/modifications? (see comments)	NA	
Was the data not usable?	NA	

APPENDIX E:

Laboratory Documents

Company		Qualitest		Project No		NEW23P-0009		Project Manager		Libby Betz		Sampler(s)		Tom Hall	
Address		2 Murray Dwyer Circuit, Mayfield West NSW 2204		Project Name		Medowie Gardens		EDD Format		Excel		Handled over by			
Contact Name		Libby Betz		Analyses		M8		Asbestos (%w/w)		B7 (TRH, BTEX, PAHs, Metals)		B14 (OCPs/OPP)		pH & CEC	
Phone No		432189418										Thermotolerant Coliforms, E.coli		Herbicides	
Special Directions															
Purchase Order															
Quote ID No		180622QUAN-3													
No	Client Sample ID	Sampled Date/Time (dd/mm/yyyy hh:mm)	Matrix (Soils (S), Water (W))												
1	TP09-4_1.5-1.6	21/03/23	Soil												
2	TP09-4_1.9-2.0	21/03/23	Soil												
3	TP11-4_0.2-0.3	21/03/23	Soil												
4	TP11-4_1.0-1.1	21/03/23	Soil												
5	TP11-4_1.5-1.6	21/03/23	Soil												
6	TP11-4_1.9-2.0	21/03/23	Soil												
7	TP12-5_0.0-0.2	21/03/23	Soil												
8	TP12-5_0.5-0.6	21/03/23	Soil												
9	TP13-5_0.0-0.2	21/03/23	Soil												
10	TP13-5_0.5-0.6	21/03/23	Soil												
Method of Shipment				☐ Courier (#) ☐ Hand Delivered ☐ Postal											
Laboratory Use Only				Received By: <u>Libby Betz</u> Signature: <u>[Signature]</u> Date: <u>22/3/23</u> Time: <u>11:10 AM</u> Report No: <u>974150</u>											

- ☐ Sydney Laboratory
Unit F3 Bld F 16 Mars Road Lane Cove West NSW 2066
02 9390 8400 EnviroSampleNSW@eurofins.com
- ☐ Brisbane Laboratory
Unit 121 Smallwood Place Murarie QLD 4172
07 3902 4800 EnviroSampleQLD@eurofins.com
- ☐ Perth Laboratory
Unit 2 91 Leach Highway Kewdale WA 6105
08 9251 9900 EnviroSampleWA@eurofins.com
- ☐ Melbourne Laboratory
6 Mackenzie Road Dandenong South VIC 3175
03 8554 5000 EnviroSampleVIC@eurofins.com

Company		Qualitest		Project No		NEW23P-0009		Project Manager		Libby Betz		Sampler(s)		Tom Hall	
Address		2 Murray Dwyer Circuit, Mayfield West NSW 2204		Project Name		Medowie Gardens		EDD Format		Excel		Handed over by			
Contact Name		Libby Betz													
Phone No		432189418													
Special Directions															
Purchase Order															
Quote ID No		180622QUAN-3													
Client Sample ID		TP07-4_0.2-0.3		Sampled Date/Time		21/03/23		Matrix		Soil					
		TP07-4_0.9-1.0				21/03/23				Soil					
		TP07-4_1.5-1.6				21/03/23				Soil					
		TP07-4_1.9-2.0				21/03/23				Soil					
		TP08-4_0.2-0.3				21/03/23				Soil					
		TP08-4_0.9-1.0				21/03/23				Soil					
		TP08-4_1.5-1.6				21/03/23				Soil					
		TP08-4_1.9-2.0				21/03/23				Soil					
		TP09-4_0.2-0.3				21/03/23				Soil					
		TP09-4_0.9-1.0				21/03/23				Soil					
Method of Shipment		☐ Courier #) ☐ Hand Delivered		☐ Postal		Name		Signature		Date		Time		Temperature	
Laboratory Use Only		Received By		Received By		Signature		Signature		Date		Time		Report No	
		Received By		Received By		Signature		Signature		Date		Time		Report No	

Containers

500mL Plastic
250mL Plastic
125mL Plastic
200mL Amber Glass
40mL VOA vial
Microbiological
Jar (Glass or HDPE)
Other (Asbestos AS4984, WA Guidelines)

Required Turnaround Time (TAT)
Default will be 5 days if not ticked

☐ Overnight (reporting by 9am) ☐ Same day ☐ 1 day ☐ 2 days ☐ 3 days ☒ 5 days (Standard) ☐ Other

Sample Comments / Dangerous Goods Hazard Warning

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



CHAIN OF CUSTODY RECORD

Eurofins | Environment Testing Adv 50 005 065 521

☐ Sydney Laboratory
Unit F3 Bld F 16 Mars Road Lane Cove West NSW 2055
02 9900 8400 EnviroSampleNSW@eurofins.com

☐ Brisbane Laboratory
Unit 1 21 Smallwood Place Marano QLD 4172
07 3802 4600 EnviroSampleQLD@eurofins.com

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

☐ Melbourne Laboratory
6 Womersley Road Sandhurst South VIC 3175
03 6554 5000 EnviroSampleVIC@eurofins.com

3/5

Company		Qualitest		Project Name		NEW23P-0009		Project Manager		Libby Betz		Sample(s)		Tom Hall	
Address		2 Murray Dwyer Circuit, Mayfield West NSW 2304		Medowle Gardens				EDD Format ESMIL, EDOIS etc		Excel		Handed over by			
Contact Name		Libby Betz										Email for Invoice		libbybetz@qualitest.com.au emmacolman@qualitest.com.au	
Phone No		432189418										Email for Results		libbybetz@qualitest.com.au emmacolman@qualitest.com.au	
Special Directions															
Purchase Order															
Quote ID No		180622QUAN-3													
Analyses		Where metals are requested, please specify "Total" or "Filtered" SUITE code must be used to attract SUITE pricing.													
Client Sample ID		TP06-2, 0.0-0.2		M8		Asbestos (%w/w)		B7 (TRH, BTEX, PAHs, Metals)		B14 (OCPs/OPP)		pH & CEC		Herbicides	
Sampled Date/Time		21/03/23		X		X		X							
Matrix		Soil													
Client Sample ID		TP06-2, 0.5-0.6													
Sampled Date/Time		21/03/23													
Matrix		Soil													
Client Sample ID		TP12-2, 0.0-0.2		X		X									
Sampled Date/Time		21/03/23													
Matrix		Soil													
Client Sample ID		TP12-2, 0.5-0.6													
Sampled Date/Time		21/03/23													
Matrix		Soil													
Client Sample ID		TP13-2, 0.0-0.2		X		X									
Sampled Date/Time		21/03/23													
Matrix		Soil													
Client Sample ID		TP13-2, 0.5-0.6													
Sampled Date/Time		21/03/23													
Matrix		Soil													
Client Sample ID		DP13.23													
Sampled Date/Time		21/03/23													
Matrix		Soil													
Client Sample ID		TZ1.3.23													
Sampled Date/Time		21/03/23													
Matrix		Soil													
Client Sample ID		TP14-2, 0.0-0.2		X		X									
Sampled Date/Time		21/03/23													
Matrix		Soil													
Client Sample ID		TP14-2, 0.5-0.6													
Sampled Date/Time		21/03/23													
Matrix		Soil													
Method of Shipment		☐ Courier (#) ☐ Hand Delivered													
Laboratory Use Only		Received By		Received By		Signature		Signature		Date		Time		Temperature	
Received By		I PER ADL NTL DRW		I PER ADL NTL DRW		Signature		Signature		Date		Time		Report No	
Received By		I PER ADL NTL DRW		I PER ADL NTL DRW		Signature		Signature		Date		Time		Report No	

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☐ **Sydney Laboratory**
Unit F3 Bld F 16 Mars Road Lane Cove NSW 2061
02 9900 8400 EnviroSampleNSW@eurofins.com

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

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

6 Monterey Road, Llandanong South, VIC 3113
03 8564 5000 EnviroSampleVic@neurofilms.com

Company		Qualtest		Project No		NEW23P-0009		Project Manager		Libby Betz		Sampler(s)		Tom Hall	
Address		2 Murray Dwyer Circuit, Mayfield West NSW 2304		Project Name		Meadow Gardens		EOD Format ES&I, EC&IS etc		Excel		Handed over by			
Contact Name		Libby Betz		Analyses		M8		Asbestos (%w/w)		B7 (TRH, BTEX, PAHs, Metals)		B14 (OCPs/OPP's)		pH & CEC	
Phone No		432189418		Where metals are requested, please specify "Total" or "Filtered". SUITE code must be used to attract SUITE pricing.										Herbicides	
Special Directions															
Purchase Order															
Quote ID No		180622QUAN-3													
Client Sample ID		SS41-1		Sampled Date/Time (dd/mm/yyyy hh:mm)		21/03/23		Soil							
1		SS41-1		21/03/23		Soil									
2		SS40-1		21/03/23		Soil									
3		SS45-1		21/03/23		Soil									
4		SS42-1		21/03/23		Soil									
5		SS43-1		21/03/23		Soil									
6		SS58-5		21/03/23		Soil									
7		SS50-3		21/03/23		Soil									
8		TP01-1_0.0-0.2		21/03/23		Soil									
9		TP01-1_0.5-0.6		21/03/23		Soil									
10		TP02-1_0.0-0.2		21/03/23		Soil									
Method of Shipment		☐ Courier (#) ☐ Hand Delivered ☐ Postal		Name		Signature		Date		Time		Temperature		Report No	
Laboratory Use Only		Received By		Received By		Signature		Date		Time		Temperature		Report No	
		Received By		Received By		Signature		Date		Time		Temperature		Report No	

Q53009_F10 Modified by: Dr. R Symons Approved by: G. Jackson Approved on: 8 August 2016

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03 8564 5000 EnviroSampleVic@eurofins.com

Company						Project Name		Project Manager	
Qualitest						NEWZSP-0009		Medowie Gardens	
Address 2 Murray Dwyer Circuit, Mayfield West NSW 2304								EDD Formal ESSA, ECLAS etc	
Contact Name Libby Betz								Excel	
Phone No 432189418									
Special Directions									
Purchase Order									
Quote ID No 180622QUAN-3									
Analyses Where metals are requested, please specify "Total" or "Filtered" SUITE code must be used to attract SUITE pricing.									
M8									
Asbestos (%w/w)									
B7 (TRH, BTEX, PAHs, Metals)									
B14 (OCPs/OPPs)									
pH & CEC									
Herbicides									
No	Client Sample ID	Sampled Date/Time (dd/mm/yyyy hh:mm)	Matrix Soil (S) Water (W)						
1	SS75-2	21/03/23	Soil	X	X	X	X	X	X
2	SS76-2	21/03/23	Soil	X	X				
3	SS77-2	21/03/23	Soil	X	X				
4	SS77-5	21/03/23	Soil			X	X	X	X
5	SS65-5	21/03/23	Soil	X			X		
6	SS38-1	21/03/23	Soil	X	X				
7	SS64-5	21/03/23	Soil	X			X		
8	SS39-1	21/03/23	Soil	X	X				
9	SS44-1	21/03/23	Soil	X	X		X		
10	SS46-1	21/03/23	Soil	X	X		X		
Method of Shipment				☐ Courier #) ☐ Hand Delivered	☐ Postal	Name	Signature	Date	Time
Laboratory Use Only				Received By	Signature	Date	Time	Temperature	Report No
				Received By	Signature	Date	Time		

ANALYTICAL REPORT

REPORT CODE

AR-23-NV-003966-01

REPORT DATE

24/03/2023

For the attention of

Eurofins Environment Testing Australia Pty Ltd

Analytical Reports

6 Monterey Road

Dandenong South

3175 Melbourne

AUSTRALIA

Phone

Email EnviroReportsau@eurofins.com

Contact for your orders:

Ruvini Herath

Submission Reference:Merged from order
cau001-order-974150-230323.xml**Order code:**

EUAUTWU-00030036

Purchase Order Number:

974150

SAMPLE CODE

726-2023-00010510

Client Reference:

23-Ma0051680

Sample described as:

TP11-4_0.2-0.3

Reception Date:

23/03/2023

Analysis Starting Date:

23/03/2023

Sampled Date & Time:

21/03/2023 12:00

Reception temperature:

5.3

Analysis Ending Date:

24/03/2023

RESULTS

LOQ

VQ239 E.coli

Analysis Starting Date: 23/03/2023 14:00

E.Coli

<10

MPN/g

1

◆ VQ255 Thermotolerant Coliforms

Analysis Starting Date: 23/03/2023 14:00

Thermotolerant coliforms

350

MPN/g

1

SAMPLE CODE

726-2023-00010511

Client Reference:

23-Ma0051681

Sample described as:

TP11-4_1.0-1.1

Reception Date:

23/03/2023

Analysis Starting Date:

23/03/2023

Sampled Date & Time:

21/03/2023 12:00

Reception temperature:

5.3

Analysis Ending Date:

24/03/2023

RESULTS

LOQ

VQ239 E.coli

Analysis Starting Date: 23/03/2023 14:00

E.Coli

<10

MPN/g

1

◆ VQ255 Thermotolerant Coliforms

Analysis Starting Date: 23/03/2023 14:00

Thermotolerant coliforms

<10

MPN/g

1

Eurofins Food Testing Australia Pty Ltd

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<https://www.eurofins.com.au/food-testing>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.
Accreditation Number 20293

SAMPLE CODE 726-2023-00010512

Client Reference: 23-Ma0051689
Sample described as: TP07-4_0.9-1.0
Reception Date: 23/03/2023
Analysis Starting Date: 23/03/2023
Sampled Date & Time: 21/03/2023 12:00

Reception temperature: 5.3
Analysis Ending Date: 24/03/2023

RESULTS

LOQ

VQ239 E.coli

Analysis Starting Date: 23/03/2023 14:00

E.Coli	<10	MPN/g	1
--------	-----	-------	---

◆ VQ255 Thermotolerant Coliforms

Analysis Starting Date: 23/03/2023 14:00

Thermotolerant coliforms	<10	MPN/g	1
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SAMPLE CODE 726-2023-00010513

Client Reference: 23-Ma0051693
Sample described as: TP08-4_0.9-1.0
Reception Date: 23/03/2023
Analysis Starting Date: 23/03/2023
Sampled Date & Time: 21/03/2023 12:00

Reception temperature: 5.3
Analysis Ending Date: 24/03/2023

RESULTS

LOQ

VQ239 E.coli

Analysis Starting Date: 23/03/2023 14:00

E.Coli	<10	MPN/g	1
--------	-----	-------	---

◆ VQ255 Thermotolerant Coliforms

Analysis Starting Date: 23/03/2023 14:00

Thermotolerant coliforms	10	MPN/g	1
--------------------------	----	-------	---

SAMPLE CODE 726-2023-00010514

Client Reference: 23-Ma0051696
Sample described as: TP09-4_0.2-0.3
Reception Date: 23/03/2023
Analysis Starting Date: 23/03/2023
Sampled Date & Time: 21/03/2023 12:00

Reception temperature: 5.3
Analysis Ending Date: 24/03/2023

RESULTS

LOQ

VQ239 E.coli

Analysis Starting Date: 23/03/2023 14:00

E.Coli	<10	MPN/g	1
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◆ VQ255 Thermotolerant Coliforms

Analysis Starting Date: 23/03/2023 14:00

Thermotolerant coliforms	10	MPN/g	1
--------------------------	----	-------	---

LIST OF METHODS

VQ239 E.coli: AS 4276.21

VQ255 Thermotolerant Coliforms: AS 4276.21

Signature

Eurofins Food Testing Australia Pty Ltd

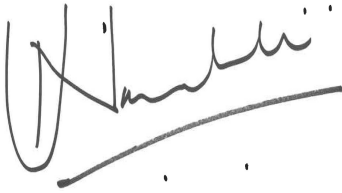
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AUSTRALIA

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

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.
Accreditation Number 20293





Nandhini Analyst Food Testing
Uthayakumaran Melbourne (AU)

EXPLANATORY NOTE

- ◆ Test is not accredited
- Test is subcontracted within Eurofins group and is accredited
- Test is subcontracted within Eurofins group and is not accredited
- Test is subcontracted outside Eurofins group and is accredited
- Test is subcontracted outside Eurofins group and is not accredited

N/A means Not applicable

Not Detected means not detected at or above the Limit of Quantification (LOQ)

LOQ Limit of Quantification

U Measurement Uncertainty

< Less than, ≤ Less than or equal to

> Greater than, ≥ Greater than or equal to

The tests are identified by a 5 digit code, full details can be provided on request.

Information supplied by the client. This information can have an impact on the validity of results.

Samples are tested as received and the results relate only to the sample tested.

Analysis date is reported as the start date of extraction for a method.

The results may not be reproduced except in full, without a written approval from the laboratory.

Eurofins General Terms and Conditions apply.

END OF REPORT

Eurofins Food Testing Australia Pty Ltd

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Phone +61385645000

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

Accredited for compliance with ISO/IEC
17025 - Testing

NATA is a signatory to the ILAC Mutual
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medical testing, calibration, inspection,
proficiency testing scheme providers and
reference materials producers reports and
certificates.

Accreditation Number 20293



Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

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

Eurofins ARL Pty Ltd

ABN: 91 05 0159 898

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

Eurofins Environment Testing NZ Ltd

NZBN: 9429046024954

Auckland	Christchurch
35 O'Rourke Road Penrose, Auckland 1061 Tel: +64 9 526 45 51 IANZ# 1327	43 Detroit Drive Rolleston, Christchurch 7675 Tel: 0800 856 450 IANZ# 1290

Sample Receipt Advice

Company name:	Qualtest
Contact name:	Libby Betz
Project name:	MEDOWIE GARDENS
Project ID:	NEW23P-0009
Turnaround time:	5 Day
Date/Time received	Mar 22, 2023 11:10 AM
Eurofins reference	974150

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✓ All samples have been received as described on the above COC.
- ✓ COC has been completed correctly.
- ✓ Attempt to chill was evident.
- ✓ Appropriately preserved sample containers have been used.
- ✓ All samples were received in good condition.
- ✓ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ✓ Appropriate sample containers have been used.
- ✓ Sample containers for volatile analysis received with zero headspace.
- ✓ Split sample sent to requested external lab.
- ✓ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Extra sample : TP02-1_0.5-0.6

Contact

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

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

Results will be delivered electronically via email to Libby Betz - libbybetz@qualtest.com.au.

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

Qualtest
2 Murray Dwyer Circuit
Mayfield West
NSW 2304



NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Attention: Libby Betz
Report 974150-AID
Project Name **MEDOWIE GARDENS**
Project ID **NEW23P-0009**
Received Date Mar 22, 2023
Date Reported Apr 03, 2023

Methodology:

Asbestos Fibre
 Identification

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

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

Unknown Mineral
 Fibres

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

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

Subsampling Soil
 Samples

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

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

Bonded asbestos-
 containing material
 (ACM)

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

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

Limit of Reporting

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

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

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

Project Name MEDOWIE GARDENS
Project ID NEW23P-0009
Date Sampled Mar 21, 2023
Report 974150-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
TP12-5_0.0-0.2	23-Ma0051684	Mar 21, 2023	Approximate Sample 685g 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.
TP13-5_0.0-0.2	23-Ma0051686	Mar 21, 2023	Approximate Sample 604g 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.
TP06-2_0.0-0.2	23-Ma0051698	Mar 21, 2023	Approximate Sample 802g 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.
TP72-2_0.0-0.2	23-Ma0051700	Mar 21, 2023	Approximate Sample 945g Sample consisted of: Brown coarse-grained soil, brick, rocks and debris	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP73-2_0.0-0.2	23-Ma0051702	Mar 21, 2023	Approximate Sample 886g 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.
TP74-2_0.0-0.2	23-Ma0051705	Mar 21, 2023	Approximate Sample 855g Sample consisted of: Brown coarse-grained soil, rocks and debris	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
SS41-1	23-Ma0051707	Mar 21, 2023	Approximate Sample 542g 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.
SS40-1	23-Ma0051708	Mar 21, 2023	Approximate Sample 699g Sample consisted of: Brown coarse-grained soil, bitumen, brick, cement, organic debris and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
SS45-1	23-Ma0051709	Mar 21, 2023	Approximate Sample 656g 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.
SS42-1	23-Ma0051710	Mar 21, 2023	Approximate Sample 649g 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.
SS43-1	23-Ma0051711	Mar 21, 2023	Approximate Sample 715g 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.
SS50-3	23-Ma0051713	Mar 21, 2023	Approximate Sample 674g 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.
TP01-1_0.0-0.2	23-Ma0051714	Mar 21, 2023	Approximate Sample 725g 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.
TP02-1_0.0-0.2	23-Ma0051716	Mar 21, 2023	Approximate Sample 639g 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.
SS75-2	23-Ma0051717	Mar 21, 2023	Approximate Sample 702g 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.
SS76-2	23-Ma0051718	Mar 21, 2023	Approximate Sample 806g 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.
SS77-2	23-Ma0051719	Mar 21, 2023	Approximate Sample 753g 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.
SS38-1	23-Ma0051722	Mar 21, 2023	Approximate Sample 633g 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.
SS39-1	23-Ma0051724	Mar 21, 2023	Approximate Sample 686g 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.
SS44-1	23-Ma0051725	Mar 21, 2023	Approximate Sample 696g 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.
SS46-1	23-Ma0051726	Mar 21, 2023	Approximate Sample 715g 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.

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Mar 22, 2023	Indefinite

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

Project Name: MEDOWIE GARDENS
Project ID: NEW23P-0009

Order No.:
Report #: 974150
Phone: 02 4968 4468
Fax: 02 4960 9775

Received: Mar 22, 2023 11:10 AM
Due: Mar 29, 2023
Priority: 5 Day
Contact Name: Libby Betz

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - WA guidelines	E.coli (MPN)	HOLD	HOLD	pH (1:5 Aqueous extract at 25 °C as rec.)	Thermotolerant Coliforms (MPN)	Acid Herbicides	Metals M8	Suite B14: OCP/OPP	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7
Melbourne Laboratory - NATA # 1261 Site # 1254								X				X				X	
Sydney Laboratory - NATA # 1261 Site # 18217						X			X	X			X	X	X		X
External Laboratory							X				X						
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID												
1	TP09-4_1.5-1.6	Mar 21, 2023		Soil	N23-Ma0051678			X									
2	TP09-4_1.9-2.0	Mar 21, 2023		Soil	N23-Ma0051679			X									
3	TP11-4_0.2-0.3	Mar 21, 2023		Soil	N23-Ma0051680		X				X						
4	TP11-4_1.0-1.1	Mar 21, 2023		Soil	N23-Ma0051681		X				X						
5	TP11-4_1.5-1.6	Mar 21, 2023		Soil	N23-Ma0051682			X									
6	TP11-4_1.9-2.0	Mar 21, 2023		Soil	N23-Ma0051683			X									
7	TP12-5_0.0-0.2	Mar 21, 2023		Soil	N23-Ma0051684	X						X	X		X		

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Melbourne Laboratory - NATA # 1261 Site # 1254								X				X					X
Sydney Laboratory - NATA # 1261 Site # 18217						X			X	X			X	X	X		X
8	TP12-5_0.5-0.6	Mar 21, 2023		Soil	N23-Ma0051685				X								
9	TP13-5_0.0-0.2	Mar 21, 2023		Soil	N23-Ma0051686	X							X		X		
10	TP13-5_0.5-0.6	Mar 21, 2023		Soil	N23-Ma0051687				X								
11	TP07-4_0.2-0.3	Mar 21, 2023		Soil	N23-Ma0051688			X									
12	TP07-4_0.9-1.0	Mar 21, 2023		Soil	N23-Ma0051689		X				X						
13	TP07-4_1.5-1.6	Mar 21, 2023		Soil	N23-Ma0051690			X									
14	TP07-4_1.9-2.0	Mar 21, 2023		Soil	N23-Ma0051691			X									
15	TP08-4_0.2-0.3	Mar 21, 2023		Soil	N23-Ma0051692			X									
16	TP08-4_0.9-1.0	Mar 21, 2023		Soil	N23-Ma0051693		X				X						

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Melbourne Laboratory - NATA # 1261 Site # 1254								X				X					X
Sydney Laboratory - NATA # 1261 Site # 18217						X			X	X			X	X	X		X
17	TP08-4_1.5-1.6	Mar 21, 2023		Soil	N23-Ma0051694			X									
18	TP08-4_1.9-2.0	Mar 21, 2023		Soil	N23-Ma0051695			X									
19	TP09-4_0.2-0.3	Mar 21, 2023		Soil	N23-Ma0051696		X				X						
20	TP09-4_0.9-1.0	Mar 21, 2023		Soil	N23-Ma0051697			X									
21	TP06-2_0.0-0.2	Mar 21, 2023		Soil	N23-Ma0051698	X									X		X
22	TP06-2_0.5-0.6	Mar 21, 2023		Soil	N23-Ma0051699				X								
23	TP72-2_0.0-0.2	Mar 21, 2023		Soil	N23-Ma0051700	X							X		X		
24	TP72-2_0.5-0.6	Mar 21, 2023		Soil	N23-Ma0051701				X								
25	TP73-2_0.0-0.2	Mar 21, 2023		Soil	N23-Ma0051702	X									X		X

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Melbourne Laboratory - NATA # 1261 Site # 1254								X				X				X	
Sydney Laboratory - NATA # 1261 Site # 18217						X			X	X			X	X	X		X
26	TP73-2_0.5-0.6	Mar 21, 2023		Soil	N23-Ma0051703				X								
27	D21.3.23	Mar 21, 2023		Soil	N23-Ma0051704										X		X
28	TP74-2_0.0-0.2	Mar 21, 2023		Soil	N23-Ma0051705	X							X		X		
29	TP74-2_0.5-0.6	Mar 21, 2023		Soil	N23-Ma0051706				X								
30	SS41-1	Mar 21, 2023		Soil	N23-Ma0051707	X							X		X		
31	SS40-1	Mar 21, 2023		Soil	N23-Ma0051708	X							X		X		
32	SS45-1	Mar 21, 2023		Soil	N23-Ma0051709	X									X		X
33	SS42-1	Mar 21, 2023		Soil	N23-Ma0051710	X							X		X		
34	SS43-1	Mar 21, 2023		Soil	N23-Ma0051711	X							X		X		
35	SS58-5	Mar 21, 2023		Soil	N23-Ma0051712								X	X	X		
36	SS50-3	Mar 21, 2023		Soil	N23-Ma0051713	X									X		X
37	TP01-1_0.0-0.2	Mar 21, 2023		Soil	N23-Ma0051714	X							X		X		

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Melbourne Laboratory - NATA # 1261 Site # 1254								X				X				X	
Sydney Laboratory - NATA # 1261 Site # 18217						X			X	X			X	X	X		X
38	TP01-1_0.5-0.6	Mar 21, 2023		Soil	N23-Ma0051715				X								
39	TP02-1_0.0-0.2	Mar 21, 2023		Soil	N23-Ma0051716	X							X		X		
40	SS75-2	Mar 21, 2023		Soil	N23-Ma0051717	X				X					X	X	X
41	SS76-2	Mar 21, 2023		Soil	N23-Ma0051718	X							X		X		
42	SS77-2	Mar 21, 2023		Soil	N23-Ma0051719	X							X		X		
43	SS57-5	Mar 21, 2023		Soil	N23-Ma0051720							X		X	X		X
44	SS65-5	Mar 21, 2023		Soil	N23-Ma0051721								X	X	X		
45	SS38-1	Mar 21, 2023		Soil	N23-Ma0051722	X							X		X		
46	SS64-5	Mar 21, 2023		Soil	N23-Ma0051723								X	X	X		
47	SS39-1	Mar 21, 2023		Soil	N23-Ma0051724	X							X		X		
48	SS44-1	Mar 21, 2023		Soil	N23-Ma0051725	X							X	X	X		
49	SS46-1	Mar 21, 2023		Soil	N23-Ma0051726	X				X			X		X	X	
50	TP02-1_0.5-0.6	Mar 21, 2023		Soil	N23-Ma0051850				X								

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Project Name:	MEDOWIE GARDENS	Phone:	02 4968 4468	Priority:	5 Day
Project ID:	NEW23P-0009	Fax:	02 4960 9775	Contact Name:	Libby Betz

Eurofins Analytical Services Manager : Andrew Black

Sample Detail	Asbestos - W/A guidelines	E.coli (MPN)	HOLD	HOLD	pH (1:5 Aqueous extract at 25 °C as rec.)	Thermotolerant Coliforms (MPN)	Acid Herbicides	Metals M8	Suite B14: OCP/OPP	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7
Melbourne Laboratory - NATA # 1261 Site # 1254			X				X				X	
Sydney Laboratory - NATA # 1261 Site # 18217	X			X	X			X	X	X		X
Test Counts	21	5	19	19	2	5	2	19	5	26	2	7

Internal Quality Control Review and Glossary General

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

Holding Times

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

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

Units

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

Calculations

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

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

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

Terms

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

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	Yes

Asbestos Counter/Identifier:

Laxman Dias Senior Analyst-Asbestos

Authorised by:

Chamath JHM Annakkage Senior Analyst-Asbestos



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Qualtest
2 Murray Dwyer Circuit
Mayfield West
NSW 2304



NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Attention: **Libby Betz**

Report **974150-S**
 Project name **MEDOWIE GARDENS**
 Project ID **NEW23P-0009**
 Received Date **Mar 22, 2023**

Client Sample ID			TP11-4_0.2-0.3	TP11-4_1.0-1.1	TP12-5_0.0-0.2	TP13-5_0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23-Ma0051680	N23-Ma0051681	N23-Ma0051684	N23-Ma0051686
Date Sampled			Mar 21, 2023	Mar 21, 2023	Mar 21, 2023	Mar 21, 2023
Test/Reference	LOR	Unit				
Pathogens						
E.coli (MPN)	1	MPN/g	see attached	see attached	-	-
Thermotolerant Coliforms (MPN)	1	MPN/g	see attached	see attached	-	-
Acid Herbicides						
2,4-D	0.5	mg/kg	-	-	< 0.5	-
2,4-DB	0.5	mg/kg	-	-	< 0.5	-
2,4,5-T	0.5	mg/kg	-	-	< 0.5	-
2,4,5-TP	0.5	mg/kg	-	-	< 0.5	-
Actril (loxyneil)	0.5	mg/kg	-	-	< 0.5	-
Dicamba	0.5	mg/kg	-	-	< 0.5	-
Dichlorprop	0.5	mg/kg	-	-	< 0.5	-
Dinitro-o-cresol	0.5	mg/kg	-	-	< 0.5	-
Dinoseb	0.5	mg/kg	-	-	< 0.5	-
MCPA	0.5	mg/kg	-	-	< 0.5	-
MCPB	0.5	mg/kg	-	-	< 0.5	-
Mecoprop	0.5	mg/kg	-	-	< 0.5	-
Warfarin (surr.)	1	%	-	-	145	-
Heavy Metals						
Arsenic	2	mg/kg	-	-	3.7	2.9
Cadmium	0.4	mg/kg	-	-	< 0.4	< 0.4
Chromium	5	mg/kg	-	-	24	23
Copper	5	mg/kg	-	-	16	27
Lead	5	mg/kg	-	-	15	13
Mercury	0.1	mg/kg	-	-	< 0.1	< 0.1
Nickel	5	mg/kg	-	-	< 5	< 5
Zinc	5	mg/kg	-	-	10	21
Sample Properties						
% Moisture	1	%	-	-	19	12

Client Sample ID			TP07-4_0.9-1.0	TP08-4_0.9-1.0	TP09-4_0.2-0.3	TP06-2_0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23-Ma0051689	N23-Ma0051693	N23-Ma0051696	N23-Ma0051698
Date Sampled			Mar 21, 2023	Mar 21, 2023	Mar 21, 2023	Mar 21, 2023
Test/Reference	LOR	Unit				
Pathogens						
E.coli (MPN)	1	MPN/g	see attached	see attached	see attached	-
Thermotolerant Coliforms (MPN)	1	MPN/g	see attached	see attached	see attached	-
Heavy Metals						
Arsenic	2	mg/kg	-	-	-	< 2
Cadmium	0.4	mg/kg	-	-	-	< 0.4
Chromium	5	mg/kg	-	-	-	< 5
Copper	5	mg/kg	-	-	-	< 5
Lead	5	mg/kg	-	-	-	< 5
Mercury	0.1	mg/kg	-	-	-	< 0.1
Nickel	5	mg/kg	-	-	-	< 5
Zinc	5	mg/kg	-	-	-	< 5
Sample Properties						
% Moisture	1	%	-	-	-	1.3
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	-	-	< 20
TRH C10-C14	20	mg/kg	-	-	-	< 20
TRH C15-C28	50	mg/kg	-	-	-	< 50
TRH C29-C36	50	mg/kg	-	-	-	51
TRH C10-C36 (Total)	50	mg/kg	-	-	-	51
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	%	-	-	-	89
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	-	-	-	< 0.5
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	-	-	-	< 50
TRH C6-C10	20	mg/kg	-	-	-	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	-	-	-	< 20
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			TP07-4_0.9-1.0	TP08-4_0.9-1.0	TP09-4_0.2-0.3	TP06-2_0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23-Ma0051689	N23-Ma0051693	N23-Ma0051696	N23-Ma0051698
Date Sampled			Mar 21, 2023	Mar 21, 2023	Mar 21, 2023	Mar 21, 2023
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
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	%	-	-	-	97
p-Terphenyl-d14 (surr.)	1	%	-	-	-	82
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	-	-	-	< 50
TRH >C16-C34	100	mg/kg	-	-	-	< 100
TRH >C34-C40	100	mg/kg	-	-	-	< 100
TRH >C10-C40 (total)*	100	mg/kg	-	-	-	< 100

Client Sample ID			TP72-2_0.0-0.2	TP73-2_0.0-0.2	D21.3.23	TP74-2_0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23-Ma0051700	N23-Ma0051702	N23-Ma0051704	N23-Ma0051705
Date Sampled			Mar 21, 2023	Mar 21, 2023	Mar 21, 2023	Mar 21, 2023
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	2.5	17	13	7.7
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	640	300	420	600
Copper	5	mg/kg	17	120	40	23
Lead	5	mg/kg	22	16	21	24
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	13	74	28	14
Zinc	5	mg/kg	60	45	57	73
Sample Properties						
% Moisture	1	%	7.2	12	8.3	5.1
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	< 20	< 20	-
TRH C10-C14	20	mg/kg	-	< 20	< 20	-
TRH C15-C28	50	mg/kg	-	< 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	%	-	93	89	-

Client Sample ID			TP72-2_0.0-0.2	TP73-2_0.0-0.2	D21.3.23	TP74-2_0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23-Ma0051700	N23-Ma0051702	N23-Ma0051704	N23-Ma0051705
Date Sampled			Mar 21, 2023	Mar 21, 2023	Mar 21, 2023	Mar 21, 2023
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	-	< 0.5	< 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	%	-	98	78	-
p-Terphenyl-d14 (surr.)	1	%	-	90	81	-
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	-

Client Sample ID			SS41-1	SS40-1	SS45-1	SS42-1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23-Ma0051707	N23-Ma0051708	N23-Ma0051709	N23-Ma0051710
Date Sampled			Mar 21, 2023	Mar 21, 2023	Mar 21, 2023	Mar 21, 2023
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	2.8	4.5	< 2	3.5
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	0.5
Chromium	5	mg/kg	37	21	16	17
Copper	5	mg/kg	12	10	6.1	7.4
Lead	5	mg/kg	21	15	9.9	12
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Zinc	5	mg/kg	43	47	32	190

Client Sample ID			SS41-1	SS40-1	SS45-1	SS42-1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23-Ma0051707	N23-Ma0051708	N23-Ma0051709	N23-Ma0051710
Date Sampled			Mar 21, 2023	Mar 21, 2023	Mar 21, 2023	Mar 21, 2023
Test/Reference	LOR	Unit				
Sample Properties						
% Moisture	1	%	17	8.0	11	14
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	-	< 20	-
TRH C10-C14	20	mg/kg	-	-	< 20	-
TRH C15-C28	50	mg/kg	-	-	110	-
TRH C29-C36	50	mg/kg	-	-	120	-
TRH C10-C36 (Total)	50	mg/kg	-	-	230	-
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	%	-	-	117	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	-	-	< 0.5	-
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	-	-	< 50	-
TRH C6-C10	20	mg/kg	-	-	< 20	-
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	-	-	< 20	-
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	%	-	-	97	-
p-Terphenyl-d14 (surr.)	1	%	-	-	81	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	-	-	< 50	-
TRH >C16-C34	100	mg/kg	-	-	180	-
TRH >C34-C40	100	mg/kg	-	-	< 100	-
TRH >C10-C40 (total)*	100	mg/kg	-	-	180	-

Client Sample ID			SS43-1	SS58-5	SS50-3	TP01-1_0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23-Ma0051711	N23-Ma0051712	N23-Ma0051713	N23-Ma0051714
Date Sampled			Mar 21, 2023	Mar 21, 2023	Mar 21, 2023	Mar 21, 2023
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	7.6	< 2	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	18	17	19	23
Copper	5	mg/kg	< 5	11	15	< 5
Lead	5	mg/kg	6.9	8.6	7.8	6.4
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Zinc	5	mg/kg	24	24	20	9.6
Sample Properties						
% Moisture	1	%	9.0	23	8.4	14
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	-	< 20	-
TRH C10-C14	20	mg/kg	-	-	< 20	-
TRH C15-C28	50	mg/kg	-	-	< 50	-
TRH C29-C36	50	mg/kg	-	-	51	-
TRH C10-C36 (Total)	50	mg/kg	-	-	51	-
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	%	-	-	91	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	-	-	< 0.5	-
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	-	-	< 50	-
TRH C6-C10	20	mg/kg	-	-	< 20	-
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	-	-	< 20	-
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	-

Client Sample ID			SS43-1	SS58-5	SS50-3	TP01-1_0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23-Ma0051711	N23-Ma0051712	N23-Ma0051713	N23-Ma0051714
Date Sampled			Mar 21, 2023	Mar 21, 2023	Mar 21, 2023	Mar 21, 2023
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Pyrene	0.5	mg/kg	-	-	< 0.5	-
Total PAH*	0.5	mg/kg	-	-	< 0.5	-
2-Fluorobiphenyl (surr.)	1	%	-	-	98	-
p-Terphenyl-d14 (surr.)	1	%	-	-	84	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	-	-	< 50	-
TRH >C16-C34	100	mg/kg	-	-	< 100	-
TRH >C34-C40	100	mg/kg	-	-	< 100	-
TRH >C10-C40 (total)*	100	mg/kg	-	-	< 100	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	-	-
4,4'-DDD	0.05	mg/kg	-	< 0.05	-	-
4,4'-DDE	0.05	mg/kg	-	0.05	-	-
4,4'-DDT	0.05	mg/kg	-	< 0.05	-	-
a-HCH	0.05	mg/kg	-	< 0.05	-	-
Aldrin	0.05	mg/kg	-	< 0.05	-	-
b-HCH	0.05	mg/kg	-	< 0.05	-	-
d-HCH	0.05	mg/kg	-	< 0.05	-	-
Dieldrin	0.05	mg/kg	-	< 0.05	-	-
Endosulfan I	0.05	mg/kg	-	< 0.05	-	-
Endosulfan II	0.05	mg/kg	-	< 0.05	-	-
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	-	-
Endrin	0.05	mg/kg	-	< 0.05	-	-
Endrin aldehyde	0.05	mg/kg	-	< 0.05	-	-
Endrin ketone	0.05	mg/kg	-	< 0.05	-	-
g-HCH (Lindane)	0.05	mg/kg	-	< 0.05	-	-
Heptachlor	0.05	mg/kg	-	< 0.05	-	-
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	-	-
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	-	-
Methoxychlor	0.05	mg/kg	-	< 0.05	-	-
Toxaphene	0.5	mg/kg	-	< 0.5	-	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	< 0.05	-	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	0.05	-	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	< 0.1	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	< 0.1	-	-
Dibutylchloroendate (surr.)	1	%	-	144	-	-
Tetrachloro-m-xylene (surr.)	1	%	-	102	-	-
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	-	< 0.2	-	-
Bolstar	0.2	mg/kg	-	< 0.2	-	-
Chlorfenvinphos	0.2	mg/kg	-	< 0.2	-	-
Chlorpyrifos	0.2	mg/kg	-	< 0.2	-	-
Chlorpyrifos-methyl	0.2	mg/kg	-	< 0.2	-	-
Coumaphos	2	mg/kg	-	< 2	-	-
Demeton-S	0.2	mg/kg	-	< 0.2	-	-
Demeton-O	0.2	mg/kg	-	< 0.2	-	-
Diazinon	0.2	mg/kg	-	< 0.2	-	-
Dichlorvos	0.2	mg/kg	-	< 0.2	-	-
Dimethoate	0.2	mg/kg	-	< 0.2	-	-

Client Sample ID			SS43-1	SS58-5	SS50-3	TP01-1_0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23-Ma0051711	N23-Ma0051712	N23-Ma0051713	N23-Ma0051714
Date Sampled			Mar 21, 2023	Mar 21, 2023	Mar 21, 2023	Mar 21, 2023
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Disulfoton	0.2	mg/kg	-	< 0.2	-	-
EPN	0.2	mg/kg	-	< 0.2	-	-
Ethion	0.2	mg/kg	-	< 0.2	-	-
Ethoprop	0.2	mg/kg	-	< 0.2	-	-
Ethyl parathion	0.2	mg/kg	-	< 0.2	-	-
Fenitrothion	0.2	mg/kg	-	< 0.2	-	-
Fensulfothion	0.2	mg/kg	-	< 0.2	-	-
Fenthion	0.2	mg/kg	-	< 0.2	-	-
Malathion	0.2	mg/kg	-	< 0.2	-	-
Merphos	0.2	mg/kg	-	< 0.2	-	-
Methyl parathion	0.2	mg/kg	-	< 0.2	-	-
Mevinphos	0.2	mg/kg	-	< 0.2	-	-
Monocrotophos	2	mg/kg	-	< 2	-	-
Naled	0.2	mg/kg	-	< 0.2	-	-
Omethoate	2	mg/kg	-	< 2	-	-
Phorate	0.2	mg/kg	-	< 0.2	-	-
Pirimiphos-methyl	0.2	mg/kg	-	< 0.2	-	-
Pyrazophos	0.2	mg/kg	-	< 0.2	-	-
Ronnel	0.2	mg/kg	-	< 0.2	-	-
Terbufos	0.2	mg/kg	-	< 0.2	-	-
Tetrachlorvinphos	0.2	mg/kg	-	< 0.2	-	-
Tokuthion	0.2	mg/kg	-	< 0.2	-	-
Trichloronate	0.2	mg/kg	-	< 0.2	-	-
Triphenylphosphate (surr.)	1	%	-	108	-	-

Client Sample ID			TP02-1_0.0-0.2	SS75-2	SS76-2	SS77-2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23-Ma0051716	N23-Ma0051717	N23-Ma0051718	N23-Ma0051719
Date Sampled			Mar 21, 2023	Mar 21, 2023	Mar 21, 2023	Mar 21, 2023
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	< 2	< 2	2.2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	16	35	440	37
Copper	5	mg/kg	< 5	8.8	35	13
Lead	5	mg/kg	11	7.1	9.6	7.6
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5	7.3	< 5
Zinc	5	mg/kg	15	13	56	22
Sample Properties						
% Moisture	1	%	14	10	7.4	5.3
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	< 20	-	-
TRH C10-C14	20	mg/kg	-	< 20	-	-
TRH C15-C28	50	mg/kg	-	< 50	-	-
TRH C29-C36	50	mg/kg	-	< 50	-	-
TRH C10-C36 (Total)	50	mg/kg	-	< 50	-	-

Client Sample ID			TP02-1_0.0-0.2	SS75-2	SS76-2	SS77-2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23-Ma0051716	N23-Ma0051717	N23-Ma0051718	N23-Ma0051719
Date Sampled			Mar 21, 2023	Mar 21, 2023	Mar 21, 2023	Mar 21, 2023
Test/Reference	LOR	Unit				
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	%	-	83	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	-	< 0.5	-	-
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	-	< 50	-	-
TRH C6-C10	20	mg/kg	-	< 20	-	-
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	-	< 20	-	-
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	%	-	84	-	-
p-Terphenyl-d14 (surr.)	1	%	-	83	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	-	< 50	-	-
TRH >C16-C34	100	mg/kg	-	< 100	-	-
TRH >C34-C40	100	mg/kg	-	< 100	-	-
TRH >C10-C40 (total)*	100	mg/kg	-	< 100	-	-
Conductivity (1:5 aqueous extract at 25 °C as rec.)	10	uS/cm	-	130	-	-
pH (1:5 Aqueous extract at 25 °C as rec.)	0.1	pH Units	-	7.7	-	-
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	-	8.0	-	-

Client Sample ID			SS57-5	SS65-5	SS38-1	SS64-5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23-Ma0051720	N23-Ma0051721	N23-Ma0051722	N23-Ma0051723
Date Sampled			Mar 21, 2023	Mar 21, 2023	Mar 21, 2023	Mar 21, 2023
Test/Reference	LOR	Unit				
Acid Herbicides						
2,4-D	0.5	mg/kg	< 0.5	-	-	-
2,4-DB	0.5	mg/kg	< 0.5	-	-	-
2,4,5-T	0.5	mg/kg	< 0.5	-	-	-
2,4,5-TP	0.5	mg/kg	< 0.5	-	-	-
Actril (loxynil)	0.5	mg/kg	< 0.5	-	-	-
Dicamba	0.5	mg/kg	< 0.5	-	-	-
Dichlorprop	0.5	mg/kg	< 0.5	-	-	-
Dinitro-o-cresol	0.5	mg/kg	< 0.5	-	-	-
Dinoseb	0.5	mg/kg	< 0.5	-	-	-
MCPA	0.5	mg/kg	< 0.5	-	-	-
MCPB	0.5	mg/kg	< 0.5	-	-	-
Mecoprop	0.5	mg/kg	< 0.5	-	-	-
Warfarin (surr.)	1	%	170	-	-	-
Heavy Metals						
Arsenic	2	mg/kg	2.8	4.0	2.6	3.1
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	16	23	19	16
Copper	5	mg/kg	5.3	8.6	< 5	7.4
Lead	5	mg/kg	5.1	15	10	11
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Zinc	5	mg/kg	14	15	29	28
Sample Properties						
% Moisture	1	%	7.9	11	18	14
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	-	-	-
TRH C10-C14	20	mg/kg	< 20	-	-	-
TRH C15-C28	50	mg/kg	< 50	-	-	-
TRH C29-C36	50	mg/kg	< 50	-	-	-
TRH C10-C36 (Total)	50	mg/kg	< 50	-	-	-
BTEX						
Benzene	0.1	mg/kg	< 0.1	-	-	-
Toluene	0.1	mg/kg	< 0.1	-	-	-
Ethylbenzene	0.1	mg/kg	< 0.1	-	-	-
m&p-Xylenes	0.2	mg/kg	< 0.2	-	-	-
o-Xylene	0.1	mg/kg	< 0.1	-	-	-
Xylenes - Total*	0.3	mg/kg	< 0.3	-	-	-
4-Bromofluorobenzene (surr.)	1	%	89	-	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	-	-	-
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	-	-	-
TRH C6-C10	20	mg/kg	< 20	-	-	-
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	-	-	-
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	-	-	-

Client Sample ID			SS57-5	SS65-5	SS38-1	SS64-5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23-Ma0051720	N23-Ma0051721	N23-Ma0051722	N23-Ma0051723
Date Sampled			Mar 21, 2023	Mar 21, 2023	Mar 21, 2023	Mar 21, 2023
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
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	%	90	-	-	-
p-Terphenyl-d14 (surr.)	1	%	93	-	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	-	-	-
TRH >C16-C34	100	mg/kg	< 100	-	-	-
TRH >C34-C40	100	mg/kg	< 100	-	-	-
TRH >C10-C40 (total)*	100	mg/kg	< 100	-	-	-
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
α-HCH	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
β-HCH	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
δ-HCH	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	-	< 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
γ-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	< 0.05	-	< 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	< 0.1	-	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1

Client Sample ID Sample Matrix Eurofins Sample No. Date Sampled Test/Reference	LOR	Unit	SS57-5 Soil N23- Ma0051720 Mar 21, 2023	SS65-5 Soil N23- Ma0051721 Mar 21, 2023	SS38-1 Soil N23- Ma0051722 Mar 21, 2023	SS64-5 Soil N23- Ma0051723 Mar 21, 2023
Organochlorine Pesticides						
Dibutylchlorendate (surr.)	1	%	125	111	-	91
Tetrachloro-m-xylene (surr.)	1	%	82	79	-	70
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	-	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	-	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Omethoate	2	mg/kg	< 2	< 2	-	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Triphenylphosphate (surr.)	1	%	97	92	-	81

Client Sample ID			SS39-1	SS44-1	SS46-1
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			N23-Ma0051724	N23-Ma0051725	N23-Ma0051726
Date Sampled			Mar 21, 2023	Mar 21, 2023	Mar 21, 2023
Test/Reference	LOR	Unit			
Heavy Metals					
Arsenic	2	mg/kg	< 2	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	24	19	12
Copper	5	mg/kg	< 5	< 5	< 5
Lead	5	mg/kg	5.9	5.9	5.5
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5	< 5
Zinc	5	mg/kg	7.4	16	25
Sample Properties					
% Moisture	1	%	12	13	11
Organochlorine Pesticides					
Chlordanes - Total	0.1	mg/kg	-	< 0.1	-
4,4'-DDD	0.05	mg/kg	-	< 0.05	-
4,4'-DDE	0.05	mg/kg	-	< 0.05	-
4,4'-DDT	0.05	mg/kg	-	< 0.05	-
a-HCH	0.05	mg/kg	-	< 0.05	-
Aldrin	0.05	mg/kg	-	< 0.05	-
b-HCH	0.05	mg/kg	-	< 0.05	-
d-HCH	0.05	mg/kg	-	< 0.05	-
Dieldrin	0.05	mg/kg	-	< 0.05	-
Endosulfan I	0.05	mg/kg	-	< 0.05	-
Endosulfan II	0.05	mg/kg	-	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	-
Endrin	0.05	mg/kg	-	< 0.05	-
Endrin aldehyde	0.05	mg/kg	-	< 0.05	-
Endrin ketone	0.05	mg/kg	-	< 0.05	-
g-HCH (Lindane)	0.05	mg/kg	-	< 0.05	-
Heptachlor	0.05	mg/kg	-	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	-
Methoxychlor	0.05	mg/kg	-	< 0.05	-
Toxaphene	0.5	mg/kg	-	< 0.5	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	< 0.05	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	< 0.05	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	< 0.1	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	< 0.1	-
Dibutylchloroendate (surr.)	1	%	-	140	-
Tetrachloro-m-xylene (surr.)	1	%	-	79	-
Organophosphorus Pesticides					
Azinphos-methyl	0.2	mg/kg	-	< 0.2	-
Bolstar	0.2	mg/kg	-	< 0.2	-
Chlorfenvinphos	0.2	mg/kg	-	< 0.2	-
Chlorpyrifos	0.2	mg/kg	-	< 0.2	-
Chlorpyrifos-methyl	0.2	mg/kg	-	< 0.2	-
Coumaphos	2	mg/kg	-	< 2	-
Demeton-S	0.2	mg/kg	-	< 0.2	-
Demeton-O	0.2	mg/kg	-	< 0.2	-
Diazinon	0.2	mg/kg	-	< 0.2	-
Dichlorvos	0.2	mg/kg	-	< 0.2	-

Client Sample ID			SS39-1	SS44-1	SS46-1
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			N23-Ma0051724	N23-Ma0051725	N23-Ma0051726
Date Sampled			Mar 21, 2023	Mar 21, 2023	Mar 21, 2023
Test/Reference	LOR	Unit			
Organophosphorus Pesticides					
Dimethoate	0.2	mg/kg	-	< 0.2	-
Disulfoton	0.2	mg/kg	-	< 0.2	-
EPN	0.2	mg/kg	-	< 0.2	-
Ethion	0.2	mg/kg	-	< 0.2	-
Ethoprop	0.2	mg/kg	-	< 0.2	-
Ethyl parathion	0.2	mg/kg	-	< 0.2	-
Fenitrothion	0.2	mg/kg	-	< 0.2	-
Fensulfothion	0.2	mg/kg	-	< 0.2	-
Fenthion	0.2	mg/kg	-	< 0.2	-
Malathion	0.2	mg/kg	-	< 0.2	-
Merphos	0.2	mg/kg	-	< 0.2	-
Methyl parathion	0.2	mg/kg	-	< 0.2	-
Mevinphos	0.2	mg/kg	-	< 0.2	-
Monocrotophos	2	mg/kg	-	< 2	-
Naled	0.2	mg/kg	-	< 0.2	-
Omethoate	2	mg/kg	-	< 2	-
Phorate	0.2	mg/kg	-	< 0.2	-
Pirimiphos-methyl	0.2	mg/kg	-	< 0.2	-
Pyrazophos	0.2	mg/kg	-	< 0.2	-
Ronnel	0.2	mg/kg	-	< 0.2	-
Terbufos	0.2	mg/kg	-	< 0.2	-
Tetrachlorvinphos	0.2	mg/kg	-	< 0.2	-
Tokuthion	0.2	mg/kg	-	< 0.2	-
Trichloronate	0.2	mg/kg	-	< 0.2	-
Triphenylphosphate (surr.)	1	%	-	99	-
Conductivity (1:5 aqueous extract at 25 °C as rec.)	10	uS/cm	-	-	73
pH (1:5 Aqueous extract at 25 °C as rec.)	0.1	pH Units	-	-	7.3
Cation Exchange Capacity					
Cation Exchange Capacity	0.05	meq/100g	-	-	10

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
Acid Herbicides	Melbourne	Mar 30, 2023	14 Days
- Method: LTM-ORG-2180 Phenoxy Acid Herbicides			
pH (1:5 Aqueous extract at 25 °C as rec.)	Sydney	Mar 29, 2023	7 Days
- Method: LTM-GEN-7090 pH by ISE			
Metals M8	Sydney	Mar 29, 2023	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Mar 29, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Mar 29, 2023	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Mar 29, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Sydney	Mar 29, 2023	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Mar 29, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
% Moisture	Sydney	Mar 27, 2023	14 Days
- Method: LTM-GEN-7080 Moisture			
Organochlorine Pesticides	Sydney	Mar 29, 2023	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Sydney	Mar 29, 2023	14 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Conductivity (1:5 aqueous extract at 25 °C as rec.)	Melbourne	Mar 30, 2023	7 Days
- Method: LTM-INO-4030 Conductivity			
Cation Exchange Capacity	Melbourne	Apr 03, 2023	28 Days
- Method: LTM-MET-3060 Cation Exchange Capacity by bases & Exchangeable Sodium Percentage			

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

Project Name: MEDOWIE GARDENS
Project ID: NEW23P-0009

Order No.:
Report #: 974150
Phone: 02 4968 4468
Fax: 02 4960 9775

Received: Mar 22, 2023 11:10 AM
Due: Mar 29, 2023
Priority: 5 Day
Contact Name: Libby Betz

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - WA guidelines	E.coli (MPN)	HOLD	HOLD	pH (1:5 Aqueous extract at 25 °C as rec.)	Thermotolerant Coliforms (MPN)	Acid Herbicides	Metals M8	Suite B14: OCP/OPP	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7
Melbourne Laboratory - NATA # 1261 Site # 1254								X				X					X
Sydney Laboratory - NATA # 1261 Site # 18217						X			X	X			X	X	X		X
External Laboratory							X				X						
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID												
1	TP09-4_1.5-1.6	Mar 21, 2023		Soil	N23-Ma0051678			X									
2	TP09-4_1.9-2.0	Mar 21, 2023		Soil	N23-Ma0051679			X									
3	TP11-4_0.2-0.3	Mar 21, 2023		Soil	N23-Ma0051680		X				X						
4	TP11-4_1.0-1.1	Mar 21, 2023		Soil	N23-Ma0051681		X				X						
5	TP11-4_1.5-1.6	Mar 21, 2023		Soil	N23-Ma0051682			X									
6	TP11-4_1.9-2.0	Mar 21, 2023		Soil	N23-Ma0051683			X									
7	TP12-5_0.0-0.2	Mar 21, 2023		Soil	N23-Ma0051684	X						X	X		X		

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Melbourne Laboratory - NATA # 1261 Site # 1254								X				X					X
Sydney Laboratory - NATA # 1261 Site # 18217						X			X	X			X	X	X		X
8	TP12-5_0.5-0.6	Mar 21, 2023		Soil	N23-Ma0051685				X								
9	TP13-5_0.0-0.2	Mar 21, 2023		Soil	N23-Ma0051686	X							X		X		
10	TP13-5_0.5-0.6	Mar 21, 2023		Soil	N23-Ma0051687				X								
11	TP07-4_0.2-0.3	Mar 21, 2023		Soil	N23-Ma0051688			X									
12	TP07-4_0.9-1.0	Mar 21, 2023		Soil	N23-Ma0051689		X				X						
13	TP07-4_1.5-1.6	Mar 21, 2023		Soil	N23-Ma0051690			X									
14	TP07-4_1.9-2.0	Mar 21, 2023		Soil	N23-Ma0051691			X									
15	TP08-4_0.2-0.3	Mar 21, 2023		Soil	N23-Ma0051692			X									
16	TP08-4_0.9-1.0	Mar 21, 2023		Soil	N23-Ma0051693		X				X						

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Melbourne Laboratory - NATA # 1261 Site # 1254								X				X					X
Sydney Laboratory - NATA # 1261 Site # 18217						X			X	X			X	X	X		X
17	TP08-4_1.5-1.6	Mar 21, 2023		Soil	N23-Ma0051694			X									
18	TP08-4_1.9-2.0	Mar 21, 2023		Soil	N23-Ma0051695			X									
19	TP09-4_0.2-0.3	Mar 21, 2023		Soil	N23-Ma0051696		X				X						
20	TP09-4_0.9-1.0	Mar 21, 2023		Soil	N23-Ma0051697			X									
21	TP06-2_0.0-0.2	Mar 21, 2023		Soil	N23-Ma0051698	X									X		X
22	TP06-2_0.5-0.6	Mar 21, 2023		Soil	N23-Ma0051699				X								
23	TP72-2_0.0-0.2	Mar 21, 2023		Soil	N23-Ma0051700	X							X		X		
24	TP72-2_0.5-0.6	Mar 21, 2023		Soil	N23-Ma0051701				X								
25	TP73-2_0.0-0.2	Mar 21, 2023		Soil	N23-Ma0051702	X									X		X

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Melbourne Laboratory - NATA # 1261 Site # 1254								X				X				X	
Sydney Laboratory - NATA # 1261 Site # 18217						X			X	X			X	X	X		X
26	TP73-2_0.5-0.6	Mar 21, 2023		Soil	N23-Ma0051703				X								
27	D21.3.23	Mar 21, 2023		Soil	N23-Ma0051704										X		X
28	TP74-2_0.0-0.2	Mar 21, 2023		Soil	N23-Ma0051705	X							X		X		
29	TP74-2_0.5-0.6	Mar 21, 2023		Soil	N23-Ma0051706				X								
30	SS41-1	Mar 21, 2023		Soil	N23-Ma0051707	X							X		X		
31	SS40-1	Mar 21, 2023		Soil	N23-Ma0051708	X							X		X		
32	SS45-1	Mar 21, 2023		Soil	N23-Ma0051709	X									X		X
33	SS42-1	Mar 21, 2023		Soil	N23-Ma0051710	X							X		X		
34	SS43-1	Mar 21, 2023		Soil	N23-Ma0051711	X							X		X		
35	SS58-5	Mar 21, 2023		Soil	N23-Ma0051712								X	X	X		
36	SS50-3	Mar 21, 2023		Soil	N23-Ma0051713	X									X		X
37	TP01-1_0.0-0.2	Mar 21, 2023		Soil	N23-Ma0051714	X							X		X		

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Melbourne Laboratory - NATA # 1261 Site # 1254								X				X				X	
Sydney Laboratory - NATA # 1261 Site # 18217						X			X	X			X	X	X		X
38	TP01-1_0.5-0.6	Mar 21, 2023		Soil	N23-Ma0051715				X								
39	TP02-1_0.0-0.2	Mar 21, 2023		Soil	N23-Ma0051716	X							X		X		
40	SS75-2	Mar 21, 2023		Soil	N23-Ma0051717	X				X					X	X	X
41	SS76-2	Mar 21, 2023		Soil	N23-Ma0051718	X							X		X		
42	SS77-2	Mar 21, 2023		Soil	N23-Ma0051719	X							X		X		
43	SS57-5	Mar 21, 2023		Soil	N23-Ma0051720							X		X	X		X
44	SS65-5	Mar 21, 2023		Soil	N23-Ma0051721								X	X	X		
45	SS38-1	Mar 21, 2023		Soil	N23-Ma0051722	X							X		X		
46	SS64-5	Mar 21, 2023		Soil	N23-Ma0051723								X	X	X		
47	SS39-1	Mar 21, 2023		Soil	N23-Ma0051724	X							X		X		
48	SS44-1	Mar 21, 2023		Soil	N23-Ma0051725	X							X	X	X		
49	SS46-1	Mar 21, 2023		Soil	N23-Ma0051726	X				X			X		X	X	
50	TP02-1_0.5-0.6	Mar 21, 2023		Soil	N23-Ma0051850				X								

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Melbourne Laboratory - NATA # 1261 Site # 1254															X				X				X	
Sydney Laboratory - NATA # 1261 Site # 18217													X			X	X			X	X	X		X
Test Counts													21	5	19	19	2	5	2	19	5	26	2	7

Internal Quality Control Review and Glossary

General

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

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

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

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

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	mg/L: milligrams per litre	µg/L: micrograms per litre
ppm: parts per million	ppb: parts per billion	%: Percentage
org/100 mL: Organisms per 100 millilitres	NTU: Nephelometric Turbidity Units	MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit		

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry 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 is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (<i>bis</i> -tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

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

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

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

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
- For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Acid Herbicides							
2.4-D	mg/kg	< 0.5			0.5	Pass	
2.4-DB	mg/kg	< 0.5			0.5	Pass	
2.4.5-T	mg/kg	< 0.5			0.5	Pass	
2.4.5-TP	mg/kg	< 0.5			0.5	Pass	
Actril (loxynil)	mg/kg	< 0.5			0.5	Pass	
Dicamba	mg/kg	< 0.5			0.5	Pass	
Dichlorprop	mg/kg	< 0.5			0.5	Pass	
Dinitro-o-cresol	mg/kg	< 0.5			0.5	Pass	
Dinoseb	mg/kg	< 0.5			0.5	Pass	
MCPA	mg/kg	< 0.5			0.5	Pass	
MCPB	mg/kg	< 0.5			0.5	Pass	
Mecoprop	mg/kg	< 0.5			0.5	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 C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g,h,i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a,h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-HCH	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-HCH	mg/kg	< 0.05			0.05	Pass	
d-HCH	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-HCH (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/kg	< 0.2			0.2	Pass	
Bolstar	mg/kg	< 0.2			0.2	Pass	
Chlorfenvinphos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos-methyl	mg/kg	< 0.2			0.2	Pass	
Coumaphos	mg/kg	< 2			2	Pass	
Demeton-S	mg/kg	< 0.2			0.2	Pass	
Demeton-O	mg/kg	< 0.2			0.2	Pass	
Diazinon	mg/kg	< 0.2			0.2	Pass	
Dichlorvos	mg/kg	< 0.2			0.2	Pass	
Dimethoate	mg/kg	< 0.2			0.2	Pass	
Disulfoton	mg/kg	< 0.2			0.2	Pass	
EPN	mg/kg	< 0.2			0.2	Pass	
Ethion	mg/kg	< 0.2			0.2	Pass	
Ethoprop	mg/kg	< 0.2			0.2	Pass	
Ethyl parathion	mg/kg	< 0.2			0.2	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Fenitrothion	mg/kg	< 0.2			0.2	Pass	
Fensulfothion	mg/kg	< 0.2			0.2	Pass	
Fenthion	mg/kg	< 0.2			0.2	Pass	
Malathion	mg/kg	< 0.2			0.2	Pass	
Merphos	mg/kg	< 0.2			0.2	Pass	
Methyl parathion	mg/kg	< 0.2			0.2	Pass	
Mevinphos	mg/kg	< 0.2			0.2	Pass	
Monocrotophos	mg/kg	< 2			2	Pass	
Naled	mg/kg	< 0.2			0.2	Pass	
Omethoate	mg/kg	< 2			2	Pass	
Phorate	mg/kg	< 0.2			0.2	Pass	
Pirimiphos-methyl	mg/kg	< 0.2			0.2	Pass	
Pyrazophos	mg/kg	< 0.2			0.2	Pass	
Ronnel	mg/kg	< 0.2			0.2	Pass	
Terbufos	mg/kg	< 0.2			0.2	Pass	
Tetrachlorvinphos	mg/kg	< 0.2			0.2	Pass	
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	Pass	
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	< 0.05			0.05	Pass	
LCS - % Recovery							
Acid Herbicides							
2,4-D	%	115			70-130	Pass	
2,4-DB	%	104			70-130	Pass	
2,4,5-T	%	90			70-130	Pass	
2,4,5-TP	%	73			70-130	Pass	
Actril (loxynil)	%	107			70-130	Pass	
Dicamba	%	127			70-130	Pass	
Dichlorprop	%	124			70-130	Pass	
Dinitro-o-cresol	%	106			70-130	Pass	
Dinoseb	%	111			70-130	Pass	
MCPA	%	122			70-130	Pass	
MCPB	%	108			70-130	Pass	
Mecoprop	%	107			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	101			80-120	Pass	
Cadmium	%	102			80-120	Pass	
Chromium	%	99			80-120	Pass	
Copper	%	97			80-120	Pass	
Lead	%	99			80-120	Pass	
Mercury	%	99			80-120	Pass	
Nickel	%	95			80-120	Pass	
Zinc	%	95			80-120	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	100			70-130	Pass	
TRH C10-C14	%	125			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	101			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Toluene	%	103			70-130	Pass	
Ethylbenzene	%	100			70-130	Pass	
m&p-Xylenes	%	100			70-130	Pass	
o-Xylene	%	99			70-130	Pass	
Xylenes - Total*	%	100			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	98			70-130	Pass	
TRH C6-C10	%	101			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	89			70-130	Pass	
Acenaphthylene	%	95			70-130	Pass	
Anthracene	%	82			70-130	Pass	
Benz(a)anthracene	%	82			70-130	Pass	
Benzo(a)pyrene	%	78			70-130	Pass	
Benzo(b&j)fluoranthene	%	77			70-130	Pass	
Benzo(g,h,i)perylene	%	71			70-130	Pass	
Benzo(k)fluoranthene	%	81			70-130	Pass	
Chrysene	%	81			70-130	Pass	
Dibenz(a,h)anthracene	%	79			70-130	Pass	
Fluoranthene	%	72			70-130	Pass	
Fluorene	%	86			70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	81			70-130	Pass	
Naphthalene	%	78			70-130	Pass	
Phenanthrene	%	80			70-130	Pass	
Pyrene	%	73			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	73			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	84			70-130	Pass	
4,4'-DDD	%	71			70-130	Pass	
4,4'-DDE	%	88			70-130	Pass	
4,4'-DDT	%	78			70-130	Pass	
α-HCH	%	79			70-130	Pass	
Aldrin	%	95			70-130	Pass	
β-HCH	%	85			70-130	Pass	
δ-HCH	%	77			70-130	Pass	
Dieldrin	%	82			70-130	Pass	
Endosulfan I	%	77			70-130	Pass	
Endosulfan II	%	71			70-130	Pass	
Endosulfan sulphate	%	76			70-130	Pass	
Endrin	%	83			70-130	Pass	
Endrin aldehyde	%	78			70-130	Pass	
Endrin ketone	%	76			70-130	Pass	
γ-HCH (Lindane)	%	84			70-130	Pass	
Heptachlor	%	89			70-130	Pass	
Heptachlor epoxide	%	85			70-130	Pass	
Hexachlorobenzene	%	89			70-130	Pass	
Methoxychlor	%	100			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Diazinon				%	82			70-130	Pass	
Dimethoate				%	90			70-130	Pass	
Ethion				%	96			70-130	Pass	
Fenitrothion				%	123			70-130	Pass	
Mevinphos				%	108			70-130	Pass	
LCS - % Recovery										
Conductivity (1:5 aqueous extract at 25 °C as rec.)				%	114			70-130	Pass	
Test	Lab Sample ID	QA Source		Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery										
Acid Herbicides					Result 1					
Actril (loxynil)	S23-Ma0058918	NCP	%	98				70-130	Pass	
Dichlorprop	S23-Ma0058918	NCP	%	121				70-130	Pass	
MCPA	M23-Ma0053670	NCP	%	64				70-130	Fail	Q08
Spike - % Recovery										
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					Result 1					
TRH C10-C14	S23-Ma0067174	NCP	%	121				70-130	Pass	
Spike - % Recovery										
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					Result 1					
TRH >C10-C16	S23-Ma0067174	NCP	%	128				70-130	Pass	
Spike - % Recovery										
Heavy Metals					Result 1					
Arsenic	N23-Ma0051702	CP	%	87				75-125	Pass	
Cadmium	N23-Ma0051702	CP	%	94				75-125	Pass	
Lead	N23-Ma0051702	CP	%	86				75-125	Pass	
Mercury	N23-Ma0051702	CP	%	95				75-125	Pass	
Zinc	N23-Ma0051702	CP	%	107				75-125	Pass	
Spike - % Recovery										
Organochlorine Pesticides					Result 1					
Chlordanes - Total	N23-Ma0051712	CP	%	91				70-130	Pass	
4,4'-DDD	N23-Ma0051712	CP	%	84				70-130	Pass	
4,4'-DDE	N23-Ma0051712	CP	%	95				70-130	Pass	
4,4'-DDT	N23-Ma0051712	CP	%	86				70-130	Pass	
a-HCH	N23-Ma0051712	CP	%	77				70-130	Pass	
Aldrin	N23-Ma0051712	CP	%	91				70-130	Pass	
b-HCH	N23-Ma0051712	CP	%	82				70-130	Pass	
d-HCH	N23-Ma0051712	CP	%	87				70-130	Pass	
Dieldrin	N23-Ma0051712	CP	%	88				70-130	Pass	
Endosulfan I	N23-Ma0051712	CP	%	89				70-130	Pass	
Endosulfan II	N23-Ma0051712	CP	%	95				70-130	Pass	
Endosulfan sulphate	N23-Ma0051712	CP	%	87				70-130	Pass	
Endrin	S23-Ma0070701	NCP	%	73				70-130	Pass	
Endrin aldehyde	N23-Ma0051712	CP	%	108				70-130	Pass	
Endrin ketone	N23-Ma0051712	CP	%	86				70-130	Pass	
g-HCH (Lindane)	N23-Ma0051712	CP	%	81				70-130	Pass	
Heptachlor	N23-Ma0051712	CP	%	85				70-130	Pass	
Heptachlor epoxide	N23-Ma0051712	CP	%	84				70-130	Pass	
Hexachlorobenzene	N23-Ma0051712	CP	%	81				70-130	Pass	
Methoxychlor	S23-Ma0070701	NCP	%	90				70-130	Pass	
Spike - % Recovery										
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					Result 1					
TRH C6-C9	N23-Ma0051717	CP	%	78				70-130	Pass	
Spike - % Recovery										
BTEX					Result 1					
Benzene	N23-Ma0051717	CP	%	77				70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Toluene	N23-Ma0051717	CP	%	75			70-130	Pass	
Ethylbenzene	N23-Ma0051717	CP	%	80			70-130	Pass	
m&p-Xylenes	N23-Ma0051717	CP	%	78			70-130	Pass	
o-Xylene	N23-Ma0051717	CP	%	80			70-130	Pass	
Xylenes - Total*	N23-Ma0051717	CP	%	78			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	N23-Ma0051717	CP	%	77			70-130	Pass	
TRH C6-C10	N23-Ma0051717	CP	%	79			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	N23-Ma0051726	CP	%	83			75-125	Pass	
Cadmium	N23-Ma0051726	CP	%	88			75-125	Pass	
Chromium	N23-Ma0051726	CP	%	92			75-125	Pass	
Copper	N23-Ma0051726	CP	%	85			75-125	Pass	
Lead	N23-Ma0051726	CP	%	94			75-125	Pass	
Mercury	N23-Ma0051726	CP	%	87			75-125	Pass	
Nickel	N23-Ma0051726	CP	%	84			75-125	Pass	
Zinc	N23-Ma0051726	CP	%	87			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Acid Herbicides				Result 1	Result 2	RPD			
2,4-D	S23-Ma0058919	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2,4-DB	S23-Ma0058919	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2,4,5-T	S23-Ma0058919	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2,4,5-TP	S23-Ma0058919	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Actril (loxynil)	S23-Ma0058919	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dicamba	S23-Ma0058919	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorprop	S23-Ma0058919	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dinitro-o-cresol	S23-Ma0058919	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dinoseb	S23-Ma0058919	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
MCPA	S23-Ma0058919	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
MCPB	S23-Ma0058919	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Mecoprop	S23-Ma0058919	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	S23-Ma0052103	NCP	%	7.4	6.9	8.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	N23-Ma0051686	CP	mg/kg	2.9	2.5	15	30%	Pass	
Cadmium	N23-Ma0051686	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	N23-Ma0051686	CP	mg/kg	23	21	8.3	30%	Pass	
Copper	N23-Ma0051686	CP	mg/kg	27	28	5.7	30%	Pass	
Lead	N23-Ma0051686	CP	mg/kg	13	13	1.3	30%	Pass	
Mercury	N23-Ma0051686	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	N23-Ma0051686	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	N23-Ma0051686	CP	mg/kg	21	20	6.3	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	N23-Ma0051698	CP	mg/kg	< 20	< 20	<1	30%	Pass	

Duplicate								
BTX				Result 1	Result 2	RPD		
Benzene	N23-Ma0051698	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Toluene	N23-Ma0051698	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Ethylbenzene	N23-Ma0051698	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
m&p-Xylenes	N23-Ma0051698	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
o-Xylene	N23-Ma0051698	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Xylenes - Total*	N23-Ma0051698	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	N23-Ma0051698	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	N23-Ma0051698	CP	mg/kg	< 20	< 20	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	S23-Ma0062512	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	S23-Ma0062512	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	S23-Ma0062512	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	S23-Ma0062512	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)pyrene	S23-Ma0062512	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b&j)fluoranthene	S23-Ma0062512	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g,h,i)perylene	S23-Ma0062512	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	S23-Ma0062512	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	S23-Ma0062512	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a,h)anthracene	S23-Ma0062512	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	S23-Ma0062512	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluorene	S23-Ma0062512	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	S23-Ma0062512	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	S23-Ma0062512	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	S23-Ma0062512	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	S23-Ma0062512	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	N23-Ma0051700	CP	mg/kg	2.5	2.8	11	30%	Pass
Cadmium	N23-Ma0051700	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	N23-Ma0051700	CP	mg/kg	640	650	1.3	30%	Pass
Copper	N23-Ma0051700	CP	mg/kg	17	23	30	30%	Pass
Lead	N23-Ma0051700	CP	mg/kg	22	30	30	30%	Pass
Mercury	N23-Ma0051700	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	N23-Ma0051700	CP	mg/kg	13	9.8	26	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD		
TRH C10-C14	N23-Ma0051704	CP	mg/kg	< 20	< 20	<1	30%	Pass
TRH C15-C28	N23-Ma0051704	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH C29-C36	N23-Ma0051704	CP	mg/kg	< 50	< 50	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
TRH >C10-C16	N23-Ma0051704	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C16-C34	N23-Ma0051704	CP	mg/kg	< 100	< 100	<1	30%	Pass
TRH >C34-C40	N23-Ma0051704	CP	mg/kg	< 100	< 100	<1	30%	Pass
Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	S23-Ma0062022	NCP	mg/kg	1.0	1.0	3.7	30%	Pass
4,4'-DDD	S23-Ma0062022	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDE	S23-Ma0062022	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDT	S23-Ma0062022	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
a-HCH	S23-Ma0062022	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass

Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Aldrin	S23-Ma0062022	NCP	mg/kg	0.73	0.88	19	30%	Pass
b-HCH	S23-Ma0062022	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
d-HCH	S23-Ma0062022	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dieldrin	S23-Ma0062022	NCP	mg/kg	1.2	1.3	7.3	30%	Pass
Endosulfan I	S23-Ma0062022	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	S23-Ma0062022	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	S23-Ma0062022	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	S23-Ma0062022	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	S23-Ma0062022	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	S23-Ma0062022	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-HCH (Lindane)	S23-Ma0062022	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	S23-Ma0062022	NCP	mg/kg	0.77	0.70	10	30%	Pass
Heptachlor epoxide	S23-Ma0062022	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	S23-Ma0062022	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	S23-Ma0062022	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Toxaphene	S23-Ma0062022	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Organophosphorus Pesticides				Result 1	Result 2	RPD		
Azinphos-methyl	S23-Ma0062022	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Bolstar	S23-Ma0062022	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorfenvinphos	S23-Ma0062022	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos	S23-Ma0062022	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos-methyl	S23-Ma0062022	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Coumaphos	S23-Ma0062022	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Demeton-S	S23-Ma0062022	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Demeton-O	S23-Ma0062022	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Diazinon	S23-Ma0062022	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Dichlorvos	S23-Ma0062022	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Dimethoate	S23-Ma0062022	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Disulfoton	S23-Ma0062022	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
EPN	S23-Ma0062022	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethion	S23-Ma0062022	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethoprop	S23-Ma0062022	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethyl parathion	S23-Ma0062022	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fenitrothion	S23-Ma0062022	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fensulfthion	S23-Ma0062022	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fenthion	S23-Ma0062022	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Malathion	S23-Ma0062022	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Merphos	S23-Ma0062022	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Methyl parathion	S23-Ma0062022	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Mevinphos	S23-Ma0062022	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Monocrotophos	S23-Ma0062022	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Naled	S23-Ma0062022	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Omethoate	S23-Ma0062022	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Phorate	S23-Ma0062022	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Pirimiphos-methyl	S23-Ma0062022	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Pyrazophos	S23-Ma0062022	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ronnel	S23-Ma0062022	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Terbufos	S23-Ma0062022	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tetrachlorvinphos	S23-Ma0062022	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tokuthion	S23-Ma0062022	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Trichloronate	S23-Ma0062022	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD		
TRH C6-C9	N23-Ma0051713	CP	mg/kg	< 20	< 20	<1	30%	Pass

Duplicate								
BTEX				Result 1	Result 2	RPD		
Benzene	N23-Ma0051713	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Toluene	N23-Ma0051713	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Ethylbenzene	N23-Ma0051713	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
m&p-Xylenes	N23-Ma0051713	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
o-Xylene	N23-Ma0051713	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Xylenes - Total*	N23-Ma0051713	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	N23-Ma0051713	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	N23-Ma0051713	CP	mg/kg	< 20	< 20	<1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	N23-Ma0051714	CP	mg/kg	< 2	< 2	<1	30%	Pass
Cadmium	N23-Ma0051714	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	N23-Ma0051714	CP	mg/kg	23	23	<1	30%	Pass
Copper	N23-Ma0051714	CP	mg/kg	< 5	< 5	<1	30%	Pass
Lead	N23-Ma0051714	CP	mg/kg	6.4	< 5	26	30%	Pass
Mercury	N23-Ma0051714	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	N23-Ma0051714	CP	mg/kg	< 5	< 5	<1	30%	Pass
Zinc	N23-Ma0051714	CP	mg/kg	9.6	9.8	1.8	30%	Pass
Duplicate								
Conductivity (1:5 aqueous extract at 25 °C as rec.)				Result 1	Result 2	RPD		
	M23-Ma0067335	NCP	uS/cm	220	210	3.0	30%	Pass
Duplicate								
Cation Exchange Capacity				Result 1	Result 2	RPD		
Cation Exchange Capacity	M23-Ma0056190	NCP	meq/100g	20	22	5.3	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	N23-Ma0051719	CP	mg/kg	< 2	< 2	<1	30%	Pass
Cadmium	N23-Ma0051719	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	N23-Ma0051719	CP	mg/kg	37	22	50	30%	Fail Q15
Copper	N23-Ma0051719	CP	mg/kg	13	16	15	30%	Pass
Lead	N23-Ma0051719	CP	mg/kg	7.6	7.8	3.8	30%	Pass
Mercury	N23-Ma0051719	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	N23-Ma0051719	CP	mg/kg	< 5	< 5	<1	30%	Pass
Zinc	N23-Ma0051719	CP	mg/kg	22	13	51	30%	Fail Q15
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	N23-Ma0051725	CP	mg/kg	< 2	2.1	10	30%	Pass
Cadmium	N23-Ma0051725	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	N23-Ma0051725	CP	mg/kg	19	18	5.9	30%	Pass
Copper	N23-Ma0051725	CP	mg/kg	< 5	< 5	<1	30%	Pass
Lead	N23-Ma0051725	CP	mg/kg	5.9	7.5	24	30%	Pass
Mercury	N23-Ma0051725	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	N23-Ma0051725	CP	mg/kg	< 5	< 5	<1	30%	Pass
Zinc	N23-Ma0051725	CP	mg/kg	16	22	31	30%	Fail Q15
Duplicate								
pH (1:5 Aqueous extract at 25 °C as rec.)				Result 1	Result 2	RPD		
	N23-Ma0051726	CP	pH Units	7.3	7.2	<1	30%	Pass

Comments

All micro analysed by; Eurofins Food Testing; accreditation number 20293; report reference AR-23-NV-003966-01

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	Yes

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
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference.
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Adam Bateup	Analytical Services Manager
Caitlin Breeze	Senior Analyst-Metal
Chamath JHM Annakkage	Senior Analyst-Asbestos
Edward Lee	Senior Analyst-Organic
Fang Yee Tan	Senior Analyst-Metal
Joseph Edouard	Senior Analyst-Organic
Maria Tian	Senior Analyst-Organic
Mary Makarios	Senior Analyst-Inorganic
Mickael Ros	Senior Analyst-Metal
Raymond Siu	Senior Analyst-Volatile
Roopesh Rangarajan	Senior Analyst-Organic
Ryan Phillips	Senior Analyst-Inorganic



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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~~20, 21, 22, 5~~

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Company		Qualitest		Project No		NEW23P-0009						Project Manager		Libby Betz		Sample(s)		Tom Hall			
Address		2 Murray Dwyer Circuit, Mayfield West NSW 2304		Project Name		Medowie Gardens						EOD Format		Excel		Handed over by					
Contact Name		Libby Betz		Analyse: (When needed time indicated please specify "Total or Filtered" SAMPLE CODES MUST BE USED TO IDENTIFY THE PROJECT		MB		Asbestos (%w/w)		B7 (TRH, BTEX, PAHs, Metals)		B14 (OCPS/OPPs)		pH & CEC		Herbicides		Containers Change container type & size if necessary.		Required Turnaround Time (TAT) Default with 4-5 days turn around	
Phone No		432189418																			
Special Directions																					
Purchase Order																					
Quote ID No		180622QUAN-3																			
No	Client Sample ID	Sampled Date/Time	Matrix (Soil/S) Water/W)																		
1	SS24-1	22/03/23	Soil	X	X			X													
2	SS26-1	22/03/23	Soil	X																	
3	SS18-1	22/03/23	Soil	X																	
4	SS25-1	22/03/23	Soil	X	X																
5	SS17-1	22/03/23	Soil	X	X																
6	SS15-1	22/03/23	Soil	X																	
7	SS35-1	22/03/23	Soil	X	X																
8	SS34-1	22/03/23	Soil	X	X																
9	SS36-1	22/03/23	Soil	X	X			X													
10	SS33-1	22/03/23	Soil	X	X																
				10	7			2										10	10		
Method of Shipment				☐ Courier (#) ☐ Hand Delivered ☐ Postal		Name		Signature		Date		Time									
Laboratory Use Only				Received By		PER ADL NTL DRW		Signature		Date		Time		Temperature							
				Received By		PER ADL NTL DRW		Signature		Date		Time		Report No							



CHAIN OF CUSTODY RECORD

Eurofins | Environmental Testing | ABN 50 005 085 571

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07 3902 4600 EnviroSampleQLD@eurofins.com

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Company		Qualitest		Project No		NEW23P-0009				Project Manager		Libby Betz				Sampler(s)		Tom Hall													
Address		2 Murray Dwyer Circuit, Mayfield West NSW 2304		Project Name		Medowie Gardens				EDD Format		Excel				Handed over by															
Contact Name		Libby Betz		Analyses Where metals are requested, please specify 'Total' or 'Filtered'. SUITE code must be used to attract SUITE pricing.		M8 Asbestos (%w/w) B7 (TRH, BTEX, PAHs, Metals) B14 (OCPs/OPPs) pH & CEC Herbicides								Email for Invoice		accounts@qualitest.com.au															
Phone No		432189418												Email for Results		libbybetz@qualitest.com.au emmacoleman@qualitest.com.au billyenow@qualitest.com.au															
Special Directions														Containers		Required Turnaround Time (TAT)															
Purchase Order														Change container type & size if necessary:		Default will be 5 days if not stated:															
Quote ID No		180622QUAN-3												500mL Plastic		250mL Plastic		125mL Plastic		200mL Amber Glass		40mL VOA vial		Microbiological		Jar (Glass or HDPE)		Other (Asbestos AS4964, WA Guidelines)		Sample Comments / Dangerous Goods Hazard Warning	
No		Client Sample ID		Sampled Date/Time		Matrix		Solid (S)		Water (W)																					
1		SS37-1		22/03/23		Soil		X		X																1		1			
2		SS32-1		22/03/23		Soil		X		X																1		1			
3		SS22-1		22/03/23		Soil		X																		1		1			
4		SS23-1		22/03/23		Soil		X				X														1		1			
5		SS53-3		22/03/23		Soil		X		X																1		1			
6		SS61-5		22/03/23		Soil		X				X														1		1			
7		SS62-5		22/03/23		Soil		X				X														1		1			
8		SS52-3		22/03/23		Soil		X		X																1		1			
9		SS54-3		22/03/23		Soil		X		X																1		1			
10		SS28-1		22/03/23		Soil				X		X		X												1		1			
								9		6		1		4												10		10			
Method of Shipment		☐ Courier (#) ☐ Hand Delivered ☐ Postal		Name		Signature		Date		Time		Temperature		Report No																	
Laboratory Use Only		Received By		PER ADL NTL DRW		Signature		Date		Time		Temperature		Report No																	
		Received By		PER ADL NTL DRW		Signature		Date		Time		Temperature		Report No																	

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REF ID: A66072

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



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Company		Qualtest		Project No		NEW23P-0009						Project Manager		Libby Betz								Sampler(s)		Tom Hall														
Address		2 Murray Dwyer Circuit, Mayfield West NSW 2304		Project Name		Medowie Gardens						EDD Format ESdat, EDuls etc		Excel								Handed over by																
Contact Name	Libby Betz			Analyse *When results are required, please specify "Total" or "Filtered". SUITE code must be used to allow SUITE pricing.	MB	Asbestos (%w/w) B7 (TRH, BTEX, PAHs, Metals) B14 (OCPS(OPPs)) pH & CEC Herbicides Asbestos (ID)														Email for Invoice	accounts@qualtest.com.au																	
Phone No	432189418																			Email for Results	libbybetz@qualtest.com.au emmacoleman@qualtest.com.au billysnow@qualtest.com.au																	
Special Directions																				Containers Change container type & size if necessary:																Required Turnaround Time (TAT) Default will be 5 days if not ticked.		
Purchase Order																				500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	Microbiological Jar (Glass or HDPE)	Other (Asbestos AS4954 WA Guidelines)	☐ Overnight (reporting by 9am)♦ ☐ Same day ♦ ☐ 1 day ♦ ☐ 2 days ♦ ☐ 3 days ♦ ☑ 5 days (Standard) ☐ Other(											
Quote ID No	180622QUAN-3																																					
No	Client Sample ID		Sampled Date/Time dd/mm/yyyy hh:mm:ss																	Matrix Solid (S) Water (W)																	Sample Comments / Dangerous Goods Hazard Warning	
1	TP67-2_0.5-0.6		22/03/23																	Soil																		
2	TP69-2_0.0-0.2		22/03/23	Soil	X	X															1 1																	
3	TP69-2_0.4-0.5		22/03/23	Soil																	1																	
4	TP71-2_0.0-0.2		22/03/23	Soil		X	X															1 1																
5	TP71-2_Frag		22/03/23	Material																	1																	
6	TP71-2_0.4-0.5		22/03/23	Soil																	X																	
7	TP70-2_0.0-0.2		22/03/23	Soil	X	X															1 1																	
8	TP70-2_0.4-0.5		22/03/23	Soil																	1																	
9	TP03-3_0.0-0.2		22/03/23	Soil	X	X															1 1																	
10	TP03-3_0.5-0.6		22/03/23	Soil																	1																	
					3	4	1															1		9 6														
Method of Shipment					☐ Courier (#) ☐ Hand Delivered ☐ Postal		Name	Signature								Date	Time																					
Laboratory Use Only	Received By				PER ADL NTL DRW		Signature		Date								Temperature		21.7																			
	Received By				PER ADL NTL DRW		Signature		Date								Report No		A7493																			

CHAIN OF CUSTODY RECORD

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☐ Melbourne Laboratory

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Company		Qualitest		Project No		NEW23P-0009		Project Manager		Libby Betz		Sampler(s)		Tom Hall		
Address		2 Murray Dwyer Circuit, Mayfield West NSW 2304		Project Name		Medowie Gardens		EPP/Finalist		Excel		Handed over by				
Contact Name		Libby Betz		Analyse (When multiple requested, please specify "Total" or "Filtered" - quite code modules need to attach to the analysis)		MB Asbestos (%w/w) B7 (TRH, BTEX, PAHs, Metals) B14 (OCs/OPPs) pH & CEC Herbicides Asbestos (ID)		CL10 - TRH, STEY, PAM, metal				Email for Invoice		accounts@qualitest.com.au		
Phone No		432189418										Email for Results		libbybetz@qualitest.com.au emmacoleman@qualitest.com.au billysnow@qualitest.com.au		
Special Directions												Containers		Required Turnaround Time (TAT)		
Purchase Order												Change container type & size if necessary 500mL Plastic 250mL Plastic 125mL Plastic 200mL Amber Glass 40mL VOA vial Microbiological Jar (Glass or HDPE) Other (Asbestos AS4954, WA Guidelines)		Default within 5 days if not stated ☐ Overnight (reporting by 9am) ☐ Same day ☐ 1 day ☐ 2 days ☐ 3 days ☒ 5 days (Standard) ☐ Other		
Quote ID No		180622QUAN-3														
No	Client Sample ID	Sampled Date Time	Matrix	Soil (s)	Water (mL)											
1	TP04-3_0.0-0.2	22/03/23	Soil	X	X											
2	TP04-3_0.5-0.6	22/03/23	Soil													
3	TP66-2_0.0-0.2	22/03/23	Soil	X	X											
4	TP66-2_0.5-0.6	22/03/23	Soil													
5	WB 22.3.23	22/03/23	Water													
6	D.22.3.23															
7	T.22.3.23															
8																
9																
10																
				2	2	1										
Method of Shipment				☐ Courier (#) ☐ Hand Delivered ☐ Postal		Name		Signature		Date		Time				
Laboratory Use Only				Received By		PER ADL NTL DRW		Signature		Date		Time		Temperature		
				Received By		PER ADL NTL DRW		Signature		Date		Time		Report No		

Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

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

Eurofins ARL Pty Ltd

ABN: 91 05 0159 898

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

Eurofins Environment Testing NZ Ltd

NZBN: 9429046024954

Auckland	Christchurch
35 O'Rourke Road Penrose, Auckland 1061 Tel: +64 9 526 45 51 IANZ# 1327	43 Detroit Drive Rolleston, Christchurch 7675 Tel: 0800 856 450 IANZ# 1290

Sample Receipt Advice

Company name:	Qualtest
Contact name:	Libby Betz
Project name:	MEDOWIE GARDENS
Project ID:	NEW23P-0009
Turnaround time:	5 Day
Date/Time received	Mar 23, 2023 2:10 PM
Eurofins reference	974973

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✓ All samples have been received as described on the above COC.
- ✓ COC has been completed correctly.
- ✓ Attempt to chill was evident.
- ✓ Appropriately preserved sample containers have been used.
- ✓ All samples were received in good condition.
- ✓ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ✓ Appropriate sample containers have been used.
- ✓ Sample containers for volatile analysis received with zero headspace.
- ✓ Split sample sent to requested external lab.
- ✗ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

T.22.3.23 SEND TO SGS | Missing sample SS28-1| Extra sample received : SS21-1 LOGGED on hold

Contact

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

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

Results will be delivered electronically via email to Libby Betz - libbybetz@qualtest.com.au.

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

Qualtest
2 Murray Dwyer Circuit
Mayfield West
NSW 2304



NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Attention: Libby Betz
Report 974973-AID
Project Name **MEDOWIE GARDENS**
Project ID **NEW23P-0009**
Received Date Mar 23, 2023
Date Reported Apr 11, 2023

Methodology:

Asbestos Fibre
 Identification

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

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

Unknown Mineral
 Fibres

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

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

Subsampling Soil
 Samples

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

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

Bonded asbestos-
 containing material
 (ACM)

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

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

Limit of Reporting

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

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

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

Project Name MEDOWIE GARDENS
Project ID NEW23P-0009
Date Sampled Mar 22, 2023
Report 974973-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
SS55-3	23-Ma0057481	Mar 22, 2023	Approximate Sample 833g Sample consisted of: Brown fine-grained clayey soil, plant residue and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
SS47-3	23-Ma0057483	Mar 22, 2023	Approximate Sample 675g 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.
SS48-3	23-Ma0057484	Mar 22, 2023	Approximate Sample 682g 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.
SS49-3	23-Ma0057485	Mar 22, 2023	Approximate Sample 592g 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.
SS19-1	23-Ma0057489	Mar 22, 2023	Approximate Sample 623g 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.
SS24-1	23-Ma0057490	Mar 22, 2023	Approximate Sample 747g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
SS25-1	23-Ma0057493	Mar 22, 2023	Approximate Sample 839g Sample consisted of: Brown fine-grained clayey soil, plant residue and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
SS17-1	23-Ma0057494	Mar 22, 2023	Approximate Sample 517g 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
SS35-1	23-Ma0057496	Mar 22, 2023	Approximate Sample 790g 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.
SS34-1	23-Ma0057497	Mar 22, 2023	Approximate Sample 707g 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.
SS36-1	23-Ma0057498	Mar 22, 2023	Approximate Sample 776g 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.
SS33-1	23-Ma0057499	Mar 22, 2023	Approximate Sample 706g 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.
SS37-1	23-Ma0057500	Mar 22, 2023	Approximate Sample 691g 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.
SS32-1	23-Ma0057501	Mar 22, 2023	Approximate Sample 747g 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.
SS53-3	23-Ma0057504	Mar 22, 2023	Approximate Sample 776g 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.
SS52-3	23-Ma0057507	Mar 22, 2023	Approximate Sample 681g 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.
SS54-3	23-Ma0057508	Mar 22, 2023	Approximate Sample 679g 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.
SS29-1	23-Ma0057510	Mar 22, 2023	Approximate Sample 668g 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.
SS30-1	23-Ma0057511	Mar 22, 2023	Approximate Sample 682g 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.
SS16-1	23-Ma0057514	Mar 22, 2023	Approximate Sample 610g 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.
SS51-3	23-Ma0057515	Mar 22, 2023	Approximate Sample 591g 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
SS27-1	23-Ma0057516	Mar 22, 2023	Approximate Sample 519g Sample consisted of: Brown fine-grained clayey soil, plant residue and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP68-2_0.0-0.2	23-Ma0057517	Mar 22, 2023	Approximate Sample 701g 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.
TP67-0.0-0.2	23-Ma0057519	Mar 22, 2023	Approximate Sample 668g 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.
TP69-2_0.0-0.2	23-Ma0057521	Mar 22, 2023	Approximate Sample 691g Sample consisted of: Brown coarse-grained sandy soil, plant residue and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP71-2_0.0-0.2	23-Ma0057523	Mar 22, 2023	Approximate Sample 743g Sample consisted of: Brown coarse-grained sandy soil, plant residue and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP71-2_FRAG	23-Ma0057524	Mar 22, 2023	Approximate Sample 8g / 30x32x4mm Sample consisted of: a) Grey compressed fibre cement material b) Blue and off-white paint layer	Chrysotile asbestos detected (a). Organic fibre detected.
TP70-2_0.0-0.2	23-Ma0057526	Mar 22, 2023	Approximate Sample 509g 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.
TP03_0.0-0.2	23-Ma0057528	Mar 22, 2023	Approximate Sample 583g 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.
TP04_0.0-0.2	23-Ma0057530	Mar 22, 2023	Approximate Sample 574g Sample consisted of: Brown fine-grained clayey soil, glass and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No trace asbestos detected.
TP66-2_0.0-0.2	23-Ma0057532	Mar 22, 2023	Approximate Sample 683g 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.

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Mar 24, 2023	Indefinite
Asbestos - LTM-ASB-8020	Newcastle	Mar 24, 2023	Indefinite

Company Name: Qualtest
Address: 2 Murray Dwyer Circuit
Mayfield West
NSW 2304
Project Name: MEDOWIE GARDENS
Project ID: NEW23P-0009

Order No.:
Report #: 974973
Phone: 02 4968 4468
Fax: 02 4960 9775

Received: Mar 23, 2023 2:10 PM
Due: Mar 30, 2023
Priority: 5 Day
Contact Name: Libby Betz

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - W/A guidelines	Asbestos Absence / Presence	HOLD	pH (1:5 Aqueous extract at 25 °C as rec.)	Acid Herbicides	Metals M8	Suite B14: OCP/OPP	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7
Melbourne Laboratory - NATA # 1261 Site # 1254										X	X			X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X		X	X		X	X	X		X
Mayfield Laboratory - NATA # 1261 Site # 25079 & 25289							X								
External Laboratory															
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID										
1	SS63-5	Mar 22, 2023		Soil	N23-Ma0057480						X	X	X		
2	SS55-3	Mar 22, 2023		Soil	N23-Ma0057481	X			X				X	X	X
3	SS56-5	Mar 22, 2023		Soil	N23-Ma0057482						X	X	X		
4	SS47-3	Mar 22, 2023		Soil	N23-Ma0057483	X					X		X		
5	SS48-3	Mar 22, 2023		Soil	N23-Ma0057484	X					X		X		
6	SS49-3	Mar 22, 2023		Soil	N23-Ma0057485	X					X		X		
7	SS60-5	Mar 22, 2023		Soil	N23-Ma0057486						X	X	X		
8	SS14-1	Mar 22, 2023		Soil	N23-Ma0057487						X		X		
9	SS27-1	Mar 22, 2023		Soil	N23-Ma0057488						X		X		
10	SS19-1	Mar 22, 2023		Soil	N23-Ma0057489	X					X		X		
11	SS24-1	Mar 22, 2023		Soil	N23-Ma0057490	X					X	X	X		

Company Name: Qualtest
Address: 2 Murray Dwyer Circuit
Mayfield West
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Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - W/A guidelines	Asbestos Absence / Presence	HOLD	pH (1:5 Aqueous extract at 25 °C as rec.)	Acid Herbicides	Metals M8	Suite B14: OCP/OPP	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7
Melbourne Laboratory - NATA # 1261 Site # 1254										X	X			X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X		X	X		X	X	X		X
Mayfield Laboratory - NATA # 1261 Site # 25079 & 25289							X								
External Laboratory															
12	SS26-1	Mar 22, 2023		Soil	N23-Ma0057491						X		X		
13	SS18-1	Mar 22, 2023		Soil	N23-Ma0057492						X		X		
14	SS25-1	Mar 22, 2023		Soil	N23-Ma0057493	X					X		X		
15	SS17-1	Mar 22, 2023		Soil	N23-Ma0057494	X					X		X		
16	SS15-1	Mar 22, 2023		Soil	N23-Ma0057495						X		X		
17	SS35-1	Mar 22, 2023		Soil	N23-Ma0057496	X					X		X		
18	SS34-1	Mar 22, 2023		Soil	N23-Ma0057497	X					X		X		
19	SS36-1	Mar 22, 2023		Soil	N23-Ma0057498	X					X	X	X		
20	SS33-1	Mar 22, 2023		Soil	N23-Ma0057499	X					X		X		
21	SS37-1	Mar 22, 2023		Soil	N23-Ma0057500	X					X		X		
22	SS32-1	Mar 22, 2023		Soil	N23-Ma0057501	X					X		X		
23	SS22-1	Mar 22, 2023		Soil	N23-Ma0057502						X		X		
24	SS23-1	Mar 22, 2023		Soil	N23-Ma0057503						X	X	X		

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Priority: 5 Day
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Sample Detail						Asbestos - W/A guidelines	Asbestos Absence / Presence	HOLD	pH (1:5 Aqueous extract at 25 °C as rec.)	Acid Herbicides	Metals M8	Suite B14: OCP/OPP	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7
Melbourne Laboratory - NATA # 1261 Site # 1254										X	X			X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X		X	X		X	X	X		X
Mayfield Laboratory - NATA # 1261 Site # 25079 & 25289							X								
External Laboratory															
25	SS53-3	Mar 22, 2023		Soil	N23-Ma0057504	X					X		X		
26	SS61-5	Mar 22, 2023		Soil	N23-Ma0057505						X	X	X		
27	SS62-5	Mar 22, 2023		Soil	N23-Ma0057506						X	X	X		
28	SS52-3	Mar 22, 2023		Soil	N23-Ma0057507	X					X		X		
29	SS54-3	Mar 22, 2023		Soil	N23-Ma0057508	X					X		X		
30	SS29-1	Mar 22, 2023		Soil	N23-Ma0057510	X					X	X	X		
31	SS30-1	Mar 22, 2023		Soil	N23-Ma0057511	X							X		X
32	SS31-1	Mar 22, 2023		Soil	N23-Ma0057512						X		X		
33	SS59-5	Mar 22, 2023		Soil	N23-Ma0057513					X	X	X	X		
34	SS16-1	Mar 22, 2023		Soil	N23-Ma0057514	X					X		X		
35	SS51-3	Mar 22, 2023		Soil	N23-Ma0057515	X					X		X		
36	SS27-1	Mar 22, 2023		Soil	N23-Ma0057516	X					X		X		
37	TP68-2_0.0-	Mar 22, 2023		Soil	N23-Ma0057517	X							X		X

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Sample Detail						Asbestos - W/A guidelines	Asbestos Absence / Presence	HOLD	pH (1:5 Aqueous extract at 25 °C as rec.)	Acid Herbicides	Metals M8	Suite B14: OCP/OPP	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7
Melbourne Laboratory - NATA # 1261 Site # 1254										X	X			X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X		X	X		X	X	X		X
Mayfield Laboratory - NATA # 1261 Site # 25079 & 25289							X								
External Laboratory															
	0.2														
38	TP68-2_0.5-0.6	Mar 22, 2023		Soil	N23-Ma0057518			X							
39	TP67-0.0-0.2	Mar 22, 2023		Soil	N23-Ma0057519	X					X		X		
40	TP67-0.5-0.6	Mar 22, 2023		Soil	N23-Ma0057520			X							
41	TP69-2_0.0-0.2	Mar 22, 2023		Soil	N23-Ma0057521	X					X		X		
42	TP69-2_0.4-0.5	Mar 22, 2023		Soil	N23-Ma0057522			X							
43	TP71-2_0.0-0.2	Mar 22, 2023		Soil	N23-Ma0057523	X							X		X
44	TP71-2_FRAG	Mar 22, 2023		Building Materials	N23-Ma0057524		X								
45	TP71-2_0.4-0.5	Mar 22, 2023		Soil	N23-Ma0057525			X							

Company Name: Qualtest
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Mayfield West
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Melbourne Laboratory - NATA # 1261 Site # 1254										X	X			X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X		X	X		X	X	X		X
Mayfield Laboratory - NATA # 1261 Site # 25079 & 25289							X								
External Laboratory															
46	TP70-2_0.0-0.2	Mar 22, 2023		Soil	N23-Ma0057526	X					X		X		
47	TP70-2_0.4-0.5	Mar 22, 2023		Soil	N23-Ma0057527			X							
48	TP03_0.0-0.2	Mar 22, 2023		Soil	N23-Ma0057528	X					X		X		
49	TP03_0.5-0.6	Mar 22, 2023		Soil	N23-Ma0057529			X							
50	TP04_0.0-0.2	Mar 22, 2023		Soil	N23-Ma0057530	X					X		X		
51	TP04_0.5-0.6	Mar 22, 2023		Soil	N23-Ma0057531			X							
52	TP66-2_0.0-0.2	Mar 22, 2023		Soil	N23-Ma0057532	X					X		X		
53	TP66-2_0.5-0.6	Mar 22, 2023		Soil	N23-Ma0057533			X							
54	WB 22.3.23	Mar 22, 2023		Water	N23-Ma0057534										X
55	D.22.3.23	Mar 22, 2023		Soil	N23-Ma0057535								X		X

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Melbourne Laboratory - NATA # 1261 Site # 1254										X	X			X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X		X	X		X	X	X		X
Mayfield Laboratory - NATA # 1261 Site # 25079 & 25289							X								
External Laboratory															
56	SS21-1	Mar 22, 2023		Soil	N23-Ma0057536			X							
Test Counts						30	1	9	1	1	40	10	45	1	6

Internal Quality Control Review and Glossary General

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

Holding Times

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

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

Units

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

Calculations

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

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

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

Terms

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

Comments

Sample Integrity

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

Asbestos Counter/Identifier:

Chamath JHM Annakkage	Senior Analyst-Asbestos
Md Mominul Haque	Senior Analyst-Asbestos

Authorised by:

Sayeed Abu	Senior Analyst-Asbestos
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Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Qualtest
2 Murray Dwyer Circuit
Mayfield West
NSW 2304



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Accreditation Number 1261
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Attention: **Libby Betz**

Report **974973-S**
 Project name **MEDOWIE GARDENS**
 Project ID **NEW23P-0009**
 Received Date **Mar 23, 2023**

Client Sample ID			G01 SS63-5	SS55-3	SS56-5	SS47-3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23- Ma0057480	N23- Ma0057481	N23- Ma0057482	N23- Ma0057483
Date Sampled			Mar 22, 2023	Mar 22, 2023	Mar 22, 2023	Mar 22, 2023
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 1	-	< 0.1	-
4,4'-DDD	0.05	mg/kg	< 0.5	-	< 0.05	-
4,4'-DDE	0.05	mg/kg	< 0.5	-	< 0.05	-
4,4'-DDT	0.05	mg/kg	< 0.5	-	< 0.05	-
a-HCH	0.05	mg/kg	< 0.5	-	< 0.05	-
Aldrin	0.05	mg/kg	< 0.5	-	< 0.05	-
b-HCH	0.05	mg/kg	< 0.5	-	< 0.05	-
d-HCH	0.05	mg/kg	< 0.5	-	< 0.05	-
Dieldrin	0.05	mg/kg	< 0.5	-	< 0.05	-
Endosulfan I	0.05	mg/kg	< 0.5	-	< 0.05	-
Endosulfan II	0.05	mg/kg	< 0.5	-	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	< 0.5	-	< 0.05	-
Endrin	0.05	mg/kg	< 0.5	-	< 0.05	-
Endrin aldehyde	0.05	mg/kg	< 0.5	-	< 0.05	-
Endrin ketone	0.05	mg/kg	< 0.5	-	< 0.05	-
g-HCH (Lindane)	0.05	mg/kg	< 0.5	-	< 0.05	-
Heptachlor	0.05	mg/kg	< 0.5	-	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	< 0.5	-	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	< 0.5	-	< 0.05	-
Methoxychlor	0.05	mg/kg	< 0.5	-	< 0.05	-
Toxaphene	0.5	mg/kg	< 10	-	< 0.5	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.5	-	< 0.05	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.5	-	< 0.05	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 1	-	< 0.1	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 1	-	< 0.1	-
Dibutylchloroendate (surr.)	1	%	108	-	76	-
Tetrachloro-m-xylene (surr.)	1	%	98	-	82	-
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.5	-	< 0.2	-
Bolstar	0.2	mg/kg	< 0.5	-	< 0.2	-
Chlorfenvinphos	0.2	mg/kg	< 0.5	-	< 0.2	-
Chlorpyrifos	0.2	mg/kg	< 0.5	-	< 0.2	-
Chlorpyrifos-methyl	0.2	mg/kg	< 0.5	-	< 0.2	-
Coumaphos	2	mg/kg	< 5	-	< 2	-
Demeton-S	0.2	mg/kg	< 0.5	-	< 0.2	-

Client Sample ID Sample Matrix Eurofins Sample No. Date Sampled Test/Reference	LOR	Unit	G01-SS63-5 Soil N23- Ma0057480 Mar 22, 2023	SS55-3 Soil N23- Ma0057481 Mar 22, 2023	SS56-5 Soil N23- Ma0057482 Mar 22, 2023	SS47-3 Soil N23- Ma0057483 Mar 22, 2023
Organophosphorus Pesticides						
Demeton-O	0.2	mg/kg	< 0.5	-	< 0.2	-
Diazinon	0.2	mg/kg	< 0.5	-	< 0.2	-
Dichlorvos	0.2	mg/kg	< 0.5	-	< 0.2	-
Dimethoate	0.2	mg/kg	< 0.5	-	< 0.2	-
Disulfoton	0.2	mg/kg	< 0.5	-	< 0.2	-
EPN	0.2	mg/kg	< 0.5	-	< 0.2	-
Ethion	0.2	mg/kg	< 0.5	-	< 0.2	-
Ethoprop	0.2	mg/kg	< 0.5	-	< 0.2	-
Ethyl parathion	0.2	mg/kg	< 0.5	-	< 0.2	-
Fenitrothion	0.2	mg/kg	< 0.5	-	< 0.2	-
Fensulfothion	0.2	mg/kg	< 0.5	-	< 0.2	-
Fenthion	0.2	mg/kg	< 0.5	-	< 0.2	-
Malathion	0.2	mg/kg	< 0.5	-	< 0.2	-
Merphos	0.2	mg/kg	< 0.5	-	< 0.2	-
Methyl parathion	0.2	mg/kg	< 0.5	-	< 0.2	-
Mevinphos	0.2	mg/kg	< 0.5	-	< 0.2	-
Monocrotophos	2	mg/kg	< 5	-	< 2	-
Naled	0.2	mg/kg	< 0.5	-	< 0.2	-
Omethoate	2	mg/kg	< 5	-	< 2	-
Phorate	0.2	mg/kg	< 0.5	-	< 0.2	-
Pirimiphos-methyl	0.2	mg/kg	< 0.5	-	< 0.2	-
Pyrazophos	0.2	mg/kg	< 0.5	-	< 0.2	-
Ronnel	0.2	mg/kg	< 0.5	-	< 0.2	-
Terbufos	0.2	mg/kg	< 0.5	-	< 0.2	-
Tetrachlorvinphos	0.2	mg/kg	< 0.5	-	< 0.2	-
Tokuthion	0.2	mg/kg	< 0.5	-	< 0.2	-
Trichloronate	0.2	mg/kg	< 0.5	-	< 0.2	-
Triphenylphosphate (surr.)	1	%	69	-	71	-
Heavy Metals						
Arsenic	2	mg/kg	< 2	4.0	2.8	3.3
Cadmium	0.4	mg/kg	< 0.4	0.5	< 0.4	< 0.4
Chromium	5	mg/kg	13	350	15	30
Copper	5	mg/kg	14	38	78	< 5
Lead	5	mg/kg	12	23	5.9	8.5
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	14	< 5	< 5
Zinc	5	mg/kg	14	160	240	110
Sample Properties						
% Moisture	1	%	22	11	14	11
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	< 20	-	-
TRH C10-C14	20	mg/kg	-	< 20	-	-
TRH C15-C28	50	mg/kg	-	< 50	-	-
TRH C29-C36	50	mg/kg	-	62	-	-
TRH C10-C36 (Total)	50	mg/kg	-	62	-	-

Client Sample ID			G01-SS63-5	SS55-3	SS56-5	SS47-3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23-Ma0057480	N23-Ma0057481	N23-Ma0057482	N23-Ma0057483
Date Sampled			Mar 22, 2023	Mar 22, 2023	Mar 22, 2023	Mar 22, 2023
Test/Reference	LOR	Unit				
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	%	-	68	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	-	< 0.5	-	-
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	-	< 50	-	-
TRH C6-C10	20	mg/kg	-	< 20	-	-
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	-	< 20	-	-
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	%	-	111	-	-
p-Terphenyl-d14 (surr.)	1	%	-	84	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	-	< 50	-	-
TRH >C16-C34	100	mg/kg	-	< 100	-	-
TRH >C34-C40	100	mg/kg	-	< 100	-	-
TRH >C10-C40 (total)*	100	mg/kg	-	< 100	-	-
Conductivity (1:5 aqueous extract at 25 °C as rec.)	10	uS/cm	-	160	-	-
pH (1:5 Aqueous extract at 25 °C as rec.)	0.1	pH Units	-	7.6	-	-
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	-	45	-	-

Client Sample ID			SS48-3	SS49-3	SS60-5	SS14-1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23-Ma0057484	N23-Ma0057485	N23-Ma0057486	N23-Ma0057487
Date Sampled			Mar 22, 2023	Mar 22, 2023	Mar 22, 2023	Mar 22, 2023
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	-	< 0.1	-
4,4'-DDD	0.05	mg/kg	-	-	< 0.05	-
4,4'-DDE	0.05	mg/kg	-	-	< 0.05	-
4,4'-DDT	0.05	mg/kg	-	-	< 0.05	-
a-HCH	0.05	mg/kg	-	-	< 0.05	-
Aldrin	0.05	mg/kg	-	-	< 0.05	-
b-HCH	0.05	mg/kg	-	-	< 0.05	-
d-HCH	0.05	mg/kg	-	-	< 0.05	-
Dieldrin	0.05	mg/kg	-	-	< 0.05	-
Endosulfan I	0.05	mg/kg	-	-	< 0.05	-
Endosulfan II	0.05	mg/kg	-	-	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	-	-	< 0.05	-
Endrin	0.05	mg/kg	-	-	< 0.05	-
Endrin aldehyde	0.05	mg/kg	-	-	< 0.05	-
Endrin ketone	0.05	mg/kg	-	-	< 0.05	-
g-HCH (Lindane)	0.05	mg/kg	-	-	< 0.05	-
Heptachlor	0.05	mg/kg	-	-	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	-	-	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	-	-	< 0.05	-
Methoxychlor	0.05	mg/kg	-	-	< 0.05	-
Toxaphene	0.5	mg/kg	-	-	< 0.5	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	-	< 0.05	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	-	< 0.05	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	-	< 0.1	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	-	< 0.1	-
Dibutylchloroendate (surr.)	1	%	-	-	83	-
Tetrachloro-m-xylene (surr.)	1	%	-	-	88	-
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	-	-	< 0.2	-
Bolstar	0.2	mg/kg	-	-	< 0.2	-
Chlorfenvinphos	0.2	mg/kg	-	-	< 0.2	-
Chlorpyrifos	0.2	mg/kg	-	-	< 0.2	-
Chlorpyrifos-methyl	0.2	mg/kg	-	-	< 0.2	-
Coumaphos	2	mg/kg	-	-	< 2	-
Demeton-S	0.2	mg/kg	-	-	< 0.2	-
Demeton-O	0.2	mg/kg	-	-	< 0.2	-
Diazinon	0.2	mg/kg	-	-	< 0.2	-
Dichlorvos	0.2	mg/kg	-	-	< 0.2	-
Dimethoate	0.2	mg/kg	-	-	< 0.2	-
Disulfoton	0.2	mg/kg	-	-	< 0.2	-
EPN	0.2	mg/kg	-	-	< 0.2	-
Ethion	0.2	mg/kg	-	-	< 0.2	-
Ethoprop	0.2	mg/kg	-	-	< 0.2	-
Ethyl parathion	0.2	mg/kg	-	-	< 0.2	-
Fenitrothion	0.2	mg/kg	-	-	< 0.2	-
Fensulfothion	0.2	mg/kg	-	-	< 0.2	-
Fenthion	0.2	mg/kg	-	-	< 0.2	-
Malathion	0.2	mg/kg	-	-	< 0.2	-
Merphos	0.2	mg/kg	-	-	< 0.2	-

Client Sample ID			SS48-3	SS49-3	SS60-5	SS14-1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23-Ma0057484	N23-Ma0057485	N23-Ma0057486	N23-Ma0057487
Date Sampled			Mar 22, 2023	Mar 22, 2023	Mar 22, 2023	Mar 22, 2023
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Methyl parathion	0.2	mg/kg	-	-	< 0.2	-
Mevinphos	0.2	mg/kg	-	-	< 0.2	-
Monocrotophos	2	mg/kg	-	-	< 2	-
Naled	0.2	mg/kg	-	-	< 0.2	-
Omethoate	2	mg/kg	-	-	< 2	-
Phorate	0.2	mg/kg	-	-	< 0.2	-
Pirimiphos-methyl	0.2	mg/kg	-	-	< 0.2	-
Pyrazophos	0.2	mg/kg	-	-	< 0.2	-
Ronnel	0.2	mg/kg	-	-	< 0.2	-
Terbufos	0.2	mg/kg	-	-	< 0.2	-
Tetrachlorvinphos	0.2	mg/kg	-	-	< 0.2	-
Tokuthion	0.2	mg/kg	-	-	< 0.2	-
Trichloronate	0.2	mg/kg	-	-	< 0.2	-
Triphenylphosphate (surr.)	1	%	-	-	75	-
Heavy Metals						
Arsenic	2	mg/kg	2.7	2.8	2.5	3.4
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	23	14	22	17
Copper	5	mg/kg	< 5	7.0	7.5	7.4
Lead	5	mg/kg	11	35	11	8.9
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Zinc	5	mg/kg	27	55	29	9.7
Sample Properties						
% Moisture	1	%	13	14	12	12

Client Sample ID			SS27-1	SS19-1	G01SS24-1	SS26-1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23-Ma0057488	N23-Ma0057489	N23-Ma0057490	N23-Ma0057491
Date Sampled			Mar 22, 2023	Mar 22, 2023	Mar 22, 2023	Mar 22, 2023
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	-	< 1	-
4,4'-DDD	0.05	mg/kg	-	-	< 0.5	-
4,4'-DDE	0.05	mg/kg	-	-	< 0.5	-
4,4'-DDT	0.05	mg/kg	-	-	< 0.5	-
a-HCH	0.05	mg/kg	-	-	< 0.5	-
Aldrin	0.05	mg/kg	-	-	< 0.5	-
b-HCH	0.05	mg/kg	-	-	< 0.5	-
d-HCH	0.05	mg/kg	-	-	< 0.5	-
Dieldrin	0.05	mg/kg	-	-	< 0.5	-
Endosulfan I	0.05	mg/kg	-	-	< 0.5	-
Endosulfan II	0.05	mg/kg	-	-	< 0.5	-
Endosulfan sulphate	0.05	mg/kg	-	-	< 0.5	-
Endrin	0.05	mg/kg	-	-	< 0.5	-
Endrin aldehyde	0.05	mg/kg	-	-	< 0.5	-
Endrin ketone	0.05	mg/kg	-	-	< 0.5	-

Client Sample ID			SS27-1	SS19-1	G01SS24-1	SS26-1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23-Ma0057488	N23-Ma0057489	N23-Ma0057490	N23-Ma0057491
Date Sampled			Mar 22, 2023	Mar 22, 2023	Mar 22, 2023	Mar 22, 2023
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
g-HCH (Lindane)	0.05	mg/kg	-	-	< 0.5	-
Heptachlor	0.05	mg/kg	-	-	< 0.5	-
Heptachlor epoxide	0.05	mg/kg	-	-	< 0.5	-
Hexachlorobenzene	0.05	mg/kg	-	-	< 0.5	-
Methoxychlor	0.05	mg/kg	-	-	< 0.5	-
Toxaphene	0.5	mg/kg	-	-	< 10	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	-	< 0.5	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	-	< 0.5	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	-	< 1	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	-	< 1	-
Dibutylchloroendate (surr.)	1	%	-	-	141	-
Tetrachloro-m-xylene (surr.)	1	%	-	-	109	-
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	-	-	< 0.5	-
Bolstar	0.2	mg/kg	-	-	< 0.5	-
Chlorfenvinphos	0.2	mg/kg	-	-	< 0.5	-
Chlorpyrifos	0.2	mg/kg	-	-	< 0.5	-
Chlorpyrifos-methyl	0.2	mg/kg	-	-	< 0.5	-
Coumaphos	2	mg/kg	-	-	< 5	-
Demeton-S	0.2	mg/kg	-	-	< 0.5	-
Demeton-O	0.2	mg/kg	-	-	< 0.5	-
Diazinon	0.2	mg/kg	-	-	< 0.5	-
Dichlorvos	0.2	mg/kg	-	-	< 0.5	-
Dimethoate	0.2	mg/kg	-	-	< 0.5	-
Disulfoton	0.2	mg/kg	-	-	< 0.5	-
EPN	0.2	mg/kg	-	-	< 0.5	-
Ethion	0.2	mg/kg	-	-	< 0.5	-
Ethoprop	0.2	mg/kg	-	-	< 0.5	-
Ethyl parathion	0.2	mg/kg	-	-	< 0.5	-
Fenitrothion	0.2	mg/kg	-	-	< 0.5	-
Fensulfothion	0.2	mg/kg	-	-	< 0.5	-
Fenthion	0.2	mg/kg	-	-	< 0.5	-
Malathion	0.2	mg/kg	-	-	< 0.5	-
Merphos	0.2	mg/kg	-	-	< 0.5	-
Methyl parathion	0.2	mg/kg	-	-	< 0.5	-
Mevinphos	0.2	mg/kg	-	-	< 0.5	-
Monocrotophos	2	mg/kg	-	-	< 5	-
Naled	0.2	mg/kg	-	-	< 0.5	-
Omethoate	2	mg/kg	-	-	< 5	-
Phorate	0.2	mg/kg	-	-	< 0.5	-
Pirimiphos-methyl	0.2	mg/kg	-	-	< 0.5	-
Pyrazophos	0.2	mg/kg	-	-	< 0.5	-
Ronnel	0.2	mg/kg	-	-	< 0.5	-
Terbufos	0.2	mg/kg	-	-	< 0.5	-
Tetrachlorvinphos	0.2	mg/kg	-	-	< 0.5	-
Tokuthion	0.2	mg/kg	-	-	< 0.5	-
Trichloronate	0.2	mg/kg	-	-	< 0.5	-
Triphenylphosphate (surr.)	1	%	-	-	85	-

Client Sample ID			SS27-1	SS19-1	G01SS24-1	SS26-1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23-Ma0057488	N23-Ma0057489	N23-Ma0057490	N23-Ma0057491
Date Sampled			Mar 22, 2023	Mar 22, 2023	Mar 22, 2023	Mar 22, 2023
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	2.8	3.4	4.8	5.0
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	19	20	11	13
Copper	5	mg/kg	36	24	17	10
Lead	5	mg/kg	25	22	22	77
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5	8.0	< 5
Zinc	5	mg/kg	90	110	110	140
Sample Properties						
% Moisture	1	%	4.8	8.0	5.3	5.7

Client Sample ID			SS18-1	SS25-1	SS17-1	SS15-1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23-Ma0057492	N23-Ma0057493	N23-Ma0057494	N23-Ma0057495
Date Sampled			Mar 22, 2023	Mar 22, 2023	Mar 22, 2023	Mar 22, 2023
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	2.6	4.5	18	3.7
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	19	8.3	34	18
Copper	5	mg/kg	11	13	36	12
Lead	5	mg/kg	19	13	20	12
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Zinc	5	mg/kg	71	50	270	93
Sample Properties						
% Moisture	1	%	7.4	2.7	7.7	8.2

Client Sample ID			SS35-1	SS34-1	SS36-1	SS33-1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23-Ma0057496	N23-Ma0057497	N23-Ma0057498	N23-Ma0057499
Date Sampled			Mar 22, 2023	Mar 22, 2023	Mar 22, 2023	Mar 22, 2023
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	-	< 0.1	-
4,4'-DDD	0.05	mg/kg	-	-	< 0.05	-
4,4'-DDE	0.05	mg/kg	-	-	0.26	-
4,4'-DDT	0.05	mg/kg	-	-	0.19	-
a-HCH	0.05	mg/kg	-	-	< 0.05	-
Aldrin	0.05	mg/kg	-	-	< 0.05	-
b-HCH	0.05	mg/kg	-	-	< 0.05	-
d-HCH	0.05	mg/kg	-	-	< 0.05	-
Dieldrin	0.05	mg/kg	-	-	< 0.05	-
Endosulfan I	0.05	mg/kg	-	-	< 0.05	-
Endosulfan II	0.05	mg/kg	-	-	< 0.05	-

Client Sample ID			SS35-1	SS34-1	SS36-1	SS33-1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23- Ma0057496	N23- Ma0057497	N23- Ma0057498	N23- Ma0057499
Date Sampled			Mar 22, 2023	Mar 22, 2023	Mar 22, 2023	Mar 22, 2023
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Endosulfan sulphate	0.05	mg/kg	-	-	< 0.05	-
Endrin	0.05	mg/kg	-	-	< 0.05	-
Endrin aldehyde	0.05	mg/kg	-	-	< 0.05	-
Endrin ketone	0.05	mg/kg	-	-	< 0.05	-
g-HCH (Lindane)	0.05	mg/kg	-	-	< 0.05	-
Heptachlor	0.05	mg/kg	-	-	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	-	-	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	-	-	< 0.05	-
Methoxychlor	0.05	mg/kg	-	-	< 0.05	-
Toxaphene	0.5	mg/kg	-	-	< 0.5	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	-	< 0.05	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	-	0.45	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	-	0.45	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	-	< 0.1	-
Dibutylchloredate (surr.)	1	%	-	-	133	-
Tetrachloro-m-xylene (surr.)	1	%	-	-	95	-
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	-	-	< 0.2	-
Bolstar	0.2	mg/kg	-	-	< 0.2	-
Chlorfenvinphos	0.2	mg/kg	-	-	< 0.2	-
Chlorpyrifos	0.2	mg/kg	-	-	< 0.2	-
Chlorpyrifos-methyl	0.2	mg/kg	-	-	< 0.2	-
Coumaphos	2	mg/kg	-	-	< 2	-
Demeton-S	0.2	mg/kg	-	-	< 0.2	-
Demeton-O	0.2	mg/kg	-	-	< 0.2	-
Diazinon	0.2	mg/kg	-	-	< 0.2	-
Dichlorvos	0.2	mg/kg	-	-	< 0.2	-
Dimethoate	0.2	mg/kg	-	-	< 0.2	-
Disulfoton	0.2	mg/kg	-	-	< 0.2	-
EPN	0.2	mg/kg	-	-	< 0.2	-
Ethion	0.2	mg/kg	-	-	< 0.2	-
Ethoprop	0.2	mg/kg	-	-	< 0.2	-
Ethyl parathion	0.2	mg/kg	-	-	< 0.2	-
Fenitrothion	0.2	mg/kg	-	-	< 0.2	-
Fensulfothion	0.2	mg/kg	-	-	< 0.2	-
Fenthion	0.2	mg/kg	-	-	< 0.2	-
Malathion	0.2	mg/kg	-	-	< 0.2	-
Merphos	0.2	mg/kg	-	-	< 0.2	-
Methyl parathion	0.2	mg/kg	-	-	< 0.2	-
Mevinphos	0.2	mg/kg	-	-	< 0.2	-
Monocrotophos	2	mg/kg	-	-	< 2	-
Naled	0.2	mg/kg	-	-	< 0.2	-
Omethoate	2	mg/kg	-	-	< 2	-
Phorate	0.2	mg/kg	-	-	< 0.2	-
Pirimiphos-methyl	0.2	mg/kg	-	-	< 0.2	-
Pyrazophos	0.2	mg/kg	-	-	< 0.2	-
Ronnel	0.2	mg/kg	-	-	< 0.2	-
Terbufos	0.2	mg/kg	-	-	< 0.2	-
Tetrachlorvinphos	0.2	mg/kg	-	-	< 0.2	-

Client Sample ID			SS35-1	SS34-1	SS36-1	SS33-1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23-Ma0057496	N23-Ma0057497	N23-Ma0057498	N23-Ma0057499
Date Sampled			Mar 22, 2023	Mar 22, 2023	Mar 22, 2023	Mar 22, 2023
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Tokuthion	0.2	mg/kg	-	-	< 0.2	-
Trichloronate	0.2	mg/kg	-	-	< 0.2	-
Triphenylphosphate (surr.)	1	%	-	-	121	-
Heavy Metals						
Arsenic	2	mg/kg	2.2	2.6	2.6	2.0
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	20	30	26	26
Copper	5	mg/kg	14	21	8.8	6.5
Lead	5	mg/kg	21	40	17	22
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	5.9	< 5	< 5
Zinc	5	mg/kg	960	320	160	84
Sample Properties						
% Moisture	1	%	9.3	9.3	8.2	11

Client Sample ID			SS37-1	SS32-1	SS22-1	SS23-1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23-Ma0057500	N23-Ma0057501	N23-Ma0057502	N23-Ma0057503
Date Sampled			Mar 22, 2023	Mar 22, 2023	Mar 22, 2023	Mar 22, 2023
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	-	-	< 0.1
4,4'-DDD	0.05	mg/kg	-	-	-	< 0.05
4,4'-DDE	0.05	mg/kg	-	-	-	< 0.05
4,4'-DDT	0.05	mg/kg	-	-	-	< 0.05
a-HCH	0.05	mg/kg	-	-	-	< 0.05
Aldrin	0.05	mg/kg	-	-	-	< 0.05
b-HCH	0.05	mg/kg	-	-	-	< 0.05
d-HCH	0.05	mg/kg	-	-	-	< 0.05
Dieldrin	0.05	mg/kg	-	-	-	0.07
Endosulfan I	0.05	mg/kg	-	-	-	< 0.05
Endosulfan II	0.05	mg/kg	-	-	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	-	-	< 0.05
Endrin	0.05	mg/kg	-	-	-	< 0.05
Endrin aldehyde	0.05	mg/kg	-	-	-	< 0.05
Endrin ketone	0.05	mg/kg	-	-	-	< 0.05
g-HCH (Lindane)	0.05	mg/kg	-	-	-	< 0.05
Heptachlor	0.05	mg/kg	-	-	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	-	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	-	-	< 0.05
Methoxychlor	0.05	mg/kg	-	-	-	< 0.05
Toxaphene	0.5	mg/kg	-	-	-	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	-	-	0.07
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	-	-	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	-	-	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	-	-	< 0.1
Dibutylchlorendate (surr.)	1	%	-	-	-	98
Tetrachloro-m-xylene (surr.)	1	%	-	-	-	92

Client Sample ID Sample Matrix Eurofins Sample No. Date Sampled Test/Reference	LOR	Unit	SS37-1 Soil N23- Ma0057500 Mar 22, 2023	SS32-1 Soil N23- Ma0057501 Mar 22, 2023	SS22-1 Soil N23- Ma0057502 Mar 22, 2023	SS23-1 Soil N23- Ma0057503 Mar 22, 2023
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	-	-	-	< 0.2
Bolstar	0.2	mg/kg	-	-	-	< 0.2
Chlorfenvinphos	0.2	mg/kg	-	-	-	< 0.2
Chlorpyrifos	0.2	mg/kg	-	-	-	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	-	-	-	< 0.2
Coumaphos	2	mg/kg	-	-	-	< 2
Demeton-S	0.2	mg/kg	-	-	-	< 0.2
Demeton-O	0.2	mg/kg	-	-	-	< 0.2
Diazinon	0.2	mg/kg	-	-	-	< 0.2
Dichlorvos	0.2	mg/kg	-	-	-	< 0.2
Dimethoate	0.2	mg/kg	-	-	-	< 0.2
Disulfoton	0.2	mg/kg	-	-	-	< 0.2
EPN	0.2	mg/kg	-	-	-	< 0.2
Ethion	0.2	mg/kg	-	-	-	< 0.2
Ethoprop	0.2	mg/kg	-	-	-	< 0.2
Ethyl parathion	0.2	mg/kg	-	-	-	< 0.2
Fenitrothion	0.2	mg/kg	-	-	-	< 0.2
Fensulfothion	0.2	mg/kg	-	-	-	< 0.2
Fenthion	0.2	mg/kg	-	-	-	< 0.2
Malathion	0.2	mg/kg	-	-	-	< 0.2
Merphos	0.2	mg/kg	-	-	-	< 0.2
Methyl parathion	0.2	mg/kg	-	-	-	< 0.2
Mevinphos	0.2	mg/kg	-	-	-	< 0.2
Monocrotophos	2	mg/kg	-	-	-	< 2
Naled	0.2	mg/kg	-	-	-	< 0.2
Omethoate	2	mg/kg	-	-	-	< 2
Phorate	0.2	mg/kg	-	-	-	< 0.2
Pirimiphos-methyl	0.2	mg/kg	-	-	-	< 0.2
Pyrazophos	0.2	mg/kg	-	-	-	0.4
Ronnel	0.2	mg/kg	-	-	-	< 0.2
Terbufos	0.2	mg/kg	-	-	-	< 0.2
Tetrachlorvinphos	0.2	mg/kg	-	-	-	< 0.2
Tokuthion	0.2	mg/kg	-	-	-	< 0.2
Trichloronate	0.2	mg/kg	-	-	-	< 0.2
Triphenylphosphate (surr.)	1	%	-	-	-	97
Heavy Metals						
Arsenic	2	mg/kg	2.2	2.4	8.9	24
Cadmium	0.4	mg/kg	< 0.4	< 0.4	0.7	< 0.4
Chromium	5	mg/kg	23	22	32	24
Copper	5	mg/kg	17	10	33	26
Lead	5	mg/kg	14	19	47	44
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5	7.9	< 5
Zinc	5	mg/kg	75	120	200	120
Sample Properties						
% Moisture	1	%	8.8	11	14	4.8

Client Sample ID			SS53-3	SS61-5	SS62-5	SS52-3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23-Ma0057504	N23-Ma0057505	N23-Ma0057506	N23-Ma0057507
Date Sampled			Mar 22, 2023	Mar 22, 2023	Mar 22, 2023	Mar 22, 2023
Test/Reference	LOR	Unit				
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	-
Dibutylchloroendate (surr.)	1	%	-	135	84	-
Tetrachloro-m-xylene (surr.)	1	%	-	96	88	-
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	-	< 0.2	< 0.2	-
Bolstar	0.2	mg/kg	-	< 0.2	< 0.2	-
Chlorfenvinphos	0.2	mg/kg	-	< 0.2	< 0.2	-
Chlorpyrifos	0.2	mg/kg	-	< 0.2	< 0.2	-
Chlorpyrifos-methyl	0.2	mg/kg	-	< 0.2	< 0.2	-
Coumaphos	2	mg/kg	-	< 2	< 2	-
Demeton-S	0.2	mg/kg	-	< 0.2	< 0.2	-
Demeton-O	0.2	mg/kg	-	< 0.2	< 0.2	-
Diazinon	0.2	mg/kg	-	< 0.2	< 0.2	-
Dichlorvos	0.2	mg/kg	-	< 0.2	< 0.2	-
Dimethoate	0.2	mg/kg	-	< 0.2	< 0.2	-
Disulfoton	0.2	mg/kg	-	< 0.2	< 0.2	-
EPN	0.2	mg/kg	-	< 0.2	< 0.2	-
Ethion	0.2	mg/kg	-	< 0.2	< 0.2	-
Ethoprop	0.2	mg/kg	-	< 0.2	< 0.2	-
Ethyl parathion	0.2	mg/kg	-	< 0.2	< 0.2	-
Fenitrothion	0.2	mg/kg	-	< 0.2	< 0.2	-
Fensulfothion	0.2	mg/kg	-	< 0.2	< 0.2	-
Fenthion	0.2	mg/kg	-	< 0.2	< 0.2	-
Malathion	0.2	mg/kg	-	< 0.2	< 0.2	-
Merphos	0.2	mg/kg	-	< 0.2	< 0.2	-

Client Sample ID			SS53-3	SS61-5	SS62-5	SS52-3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23-Ma0057504	N23-Ma0057505	N23-Ma0057506	N23-Ma0057507
Date Sampled			Mar 22, 2023	Mar 22, 2023	Mar 22, 2023	Mar 22, 2023
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Methyl parathion	0.2	mg/kg	-	< 0.2	< 0.2	-
Mevinphos	0.2	mg/kg	-	< 0.2	< 0.2	-
Monocrotophos	2	mg/kg	-	< 2	< 2	-
Naled	0.2	mg/kg	-	< 0.2	< 0.2	-
Omethoate	2	mg/kg	-	< 2	< 2	-
Phorate	0.2	mg/kg	-	< 0.2	< 0.2	-
Pirimiphos-methyl	0.2	mg/kg	-	< 0.2	< 0.2	-
Pyrazophos	0.2	mg/kg	-	< 0.2	< 0.2	-
Ronnel	0.2	mg/kg	-	< 0.2	< 0.2	-
Terbufos	0.2	mg/kg	-	< 0.2	< 0.2	-
Tetrachlorvinphos	0.2	mg/kg	-	< 0.2	< 0.2	-
Tokuthion	0.2	mg/kg	-	< 0.2	< 0.2	-
Trichloronate	0.2	mg/kg	-	< 0.2	< 0.2	-
Triphenylphosphate (surr.)	1	%	-	Q09 INT	78	-
Heavy Metals						
Arsenic	2	mg/kg	3.0	2.2	< 2	4.5
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	23	16	18	31
Copper	5	mg/kg	19	20	16	13
Lead	5	mg/kg	13	16	8.0	20
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Zinc	5	mg/kg	19	12	14	18
Sample Properties						
% Moisture	1	%	12	7.0	7.2	12

Client Sample ID			SS54-3	SS29-1	SS30-1	SS31-1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23-Ma0057508	N23-Ma0057510	N23-Ma0057511	N23-Ma0057512
Date Sampled			Mar 22, 2023	Mar 22, 2023	Mar 22, 2023	Mar 22, 2023
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	-	-
4,4'-DDD	0.05	mg/kg	-	< 0.05	-	-
4,4'-DDE	0.05	mg/kg	-	< 0.05	-	-
4,4'-DDT	0.05	mg/kg	-	< 0.05	-	-
a-HCH	0.05	mg/kg	-	< 0.05	-	-
Aldrin	0.05	mg/kg	-	< 0.05	-	-
b-HCH	0.05	mg/kg	-	< 0.05	-	-
d-HCH	0.05	mg/kg	-	< 0.05	-	-
Dieldrin	0.05	mg/kg	-	< 0.05	-	-
Endosulfan I	0.05	mg/kg	-	< 0.05	-	-
Endosulfan II	0.05	mg/kg	-	< 0.05	-	-
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	-	-
Endrin	0.05	mg/kg	-	< 0.05	-	-
Endrin aldehyde	0.05	mg/kg	-	0.07	-	-
Endrin ketone	0.05	mg/kg	-	< 0.05	-	-

Client Sample ID			SS54-3	SS29-1	SS30-1	SS31-1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23- Ma0057508	N23- Ma0057510	N23- Ma0057511	N23- Ma0057512
Date Sampled			Mar 22, 2023	Mar 22, 2023	Mar 22, 2023	Mar 22, 2023
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
g-HCH (Lindane)	0.05	mg/kg	-	< 0.05	-	-
Heptachlor	0.05	mg/kg	-	< 0.05	-	-
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	-	-
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	-	-
Methoxychlor	0.05	mg/kg	-	< 0.05	-	-
Toxaphene	0.5	mg/kg	-	< 0.5	-	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	< 0.05	-	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	< 0.05	-	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	< 0.1	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	< 0.1	-	-
Dibutylchloroendate (surr.)	1	%	-	109	-	-
Tetrachloro-m-xylene (surr.)	1	%	-	86	-	-
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	-	< 0.2	-	-
Bolstar	0.2	mg/kg	-	< 0.2	-	-
Chlorfenvinphos	0.2	mg/kg	-	< 0.2	-	-
Chlorpyrifos	0.2	mg/kg	-	< 0.2	-	-
Chlorpyrifos-methyl	0.2	mg/kg	-	< 0.2	-	-
Coumaphos	2	mg/kg	-	< 2	-	-
Demeton-S	0.2	mg/kg	-	< 0.2	-	-
Demeton-O	0.2	mg/kg	-	< 0.2	-	-
Diazinon	0.2	mg/kg	-	< 0.2	-	-
Dichlorvos	0.2	mg/kg	-	< 0.2	-	-
Dimethoate	0.2	mg/kg	-	< 0.2	-	-
Disulfoton	0.2	mg/kg	-	< 0.2	-	-
EPN	0.2	mg/kg	-	< 0.2	-	-
Ethion	0.2	mg/kg	-	< 0.2	-	-
Ethoprop	0.2	mg/kg	-	< 0.2	-	-
Ethyl parathion	0.2	mg/kg	-	< 0.2	-	-
Fenitrothion	0.2	mg/kg	-	< 0.2	-	-
Fensulfothion	0.2	mg/kg	-	< 0.2	-	-
Fenthion	0.2	mg/kg	-	< 0.2	-	-
Malathion	0.2	mg/kg	-	< 0.2	-	-
Merphos	0.2	mg/kg	-	< 0.2	-	-
Methyl parathion	0.2	mg/kg	-	< 0.2	-	-
Mevinphos	0.2	mg/kg	-	< 0.2	-	-
Monocrotophos	2	mg/kg	-	< 2	-	-
Naled	0.2	mg/kg	-	< 0.2	-	-
Omethoate	2	mg/kg	-	< 2	-	-
Phorate	0.2	mg/kg	-	< 0.2	-	-
Pirimiphos-methyl	0.2	mg/kg	-	< 0.2	-	-
Pyrazophos	0.2	mg/kg	-	< 0.2	-	-
Ronnel	0.2	mg/kg	-	< 0.2	-	-
Terbufos	0.2	mg/kg	-	< 0.2	-	-
Tetrachlorvinphos	0.2	mg/kg	-	< 0.2	-	-
Tokuthion	0.2	mg/kg	-	< 0.2	-	-
Trichloronate	0.2	mg/kg	-	< 0.2	-	-
Triphenylphosphate (surr.)	1	%	-	92	-	-

Client Sample ID			SS54-3	SS29-1	SS30-1	SS31-1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23-Ma0057508	N23-Ma0057510	N23-Ma0057511	N23-Ma0057512
Date Sampled			Mar 22, 2023	Mar 22, 2023	Mar 22, 2023	Mar 22, 2023
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	2.3	3.9	2.7	2.8
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	18	26	10.0	18
Copper	5	mg/kg	5.5	30	61	11
Lead	5	mg/kg	9.0	27	29	18
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	14	< 5	< 5
Zinc	5	mg/kg	32	190	240	64
Sample Properties						
% Moisture	1	%	8.6	7.3	7.6	9.0
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	-	< 20	-
TRH C10-C14	20	mg/kg	-	-	< 20	-
TRH C15-C28	50	mg/kg	-	-	110	-
TRH C29-C36	50	mg/kg	-	-	100	-
TRH C10-C36 (Total)	50	mg/kg	-	-	210	-
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 Fractions						
Naphthalene ^{N02}	0.5	mg/kg	-	-	< 0.5	-
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	-	-	< 50	-
TRH C6-C10	20	mg/kg	-	-	< 20	-
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	-	-	< 20	-
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	-	< 5	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	-	< 5	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	-	< 5	-
Acenaphthene	0.5	mg/kg	-	-	< 0.5	-
Acenaphthylene	0.5	mg/kg	-	-	< 0.5	-
Anthracene	0.5	mg/kg	-	-	< 0.5	-
Benzo(a)anthracene	0.5	mg/kg	-	-	1.0	-
Benzo(a)pyrene	0.5	mg/kg	-	-	1.6	-
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	-	-	0.9	-
Benzo(g,h,i)perylene	0.5	mg/kg	-	-	< 5	-
Benzo(k)fluoranthene	0.5	mg/kg	-	-	0.9	-
Chrysene	0.5	mg/kg	-	-	1.2	-
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	-	-	1.2	-
Naphthalene	0.5	mg/kg	-	-	< 0.5	-
Phenanthrene	0.5	mg/kg	-	-	< 0.5	-

Client Sample ID			SS54-3	SS29-1	SS30-1	SS31-1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23-Ma0057508	N23-Ma0057510	N23-Ma0057511	N23-Ma0057512
Date Sampled			Mar 22, 2023	Mar 22, 2023	Mar 22, 2023	Mar 22, 2023
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Pyrene	0.5	mg/kg	-	-	1.9	-
Total PAH*	0.5	mg/kg	-	-	8.7	-
2-Fluorobiphenyl (surr.)	1	%	-	-	119	-
p-Terphenyl-d14 (surr.)	1	%	-	-	108	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	-	-	< 50	-
TRH >C16-C34	100	mg/kg	-	-	180	-
TRH >C34-C40	100	mg/kg	-	-	130	-
TRH >C10-C40 (total)*	100	mg/kg	-	-	310	-

Client Sample ID			SS59-5	SS16-1	SS51-3	SS27-1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23-Ma0057513	N23-Ma0057514	N23-Ma0057515	N23-Ma0057516
Date Sampled			Mar 22, 2023	Mar 22, 2023	Mar 22, 2023	Mar 22, 2023
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	0.3	-	-	-
4,4'-DDD	0.05	mg/kg	< 0.05	-	-	-
4,4'-DDE	0.05	mg/kg	0.24	-	-	-
4,4'-DDT	0.05	mg/kg	0.06	-	-	-
a-HCH	0.05	mg/kg	< 0.05	-	-	-
Aldrin	0.05	mg/kg	< 0.05	-	-	-
b-HCH	0.05	mg/kg	< 0.05	-	-	-
d-HCH	0.05	mg/kg	< 0.05	-	-	-
Dieldrin	0.05	mg/kg	0.08	-	-	-
Endosulfan I	0.05	mg/kg	< 0.05	-	-	-
Endosulfan II	0.05	mg/kg	< 0.05	-	-	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	-	-
Endrin	0.05	mg/kg	< 0.05	-	-	-
Endrin aldehyde	0.05	mg/kg	< 0.05	-	-	-
Endrin ketone	0.05	mg/kg	< 0.05	-	-	-
g-HCH (Lindane)	0.05	mg/kg	< 0.05	-	-	-
Heptachlor	0.05	mg/kg	< 0.05	-	-	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	-	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	-	-
Methoxychlor	0.05	mg/kg	< 0.05	-	-	-
Toxaphene	0.5	mg/kg	< 0.5	-	-	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	0.08	-	-	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	0.3	-	-	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	0.68	-	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	0.3	-	-	-
Dibutylchloroendate (surr.)	1	%	117	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	90	-	-	-

Client Sample ID Sample Matrix Eurofins Sample No. Date Sampled Test/Reference	LOR	Unit	SS59-5 Soil N23- Ma0057513 Mar 22, 2023	SS16-1 Soil N23- Ma0057514 Mar 22, 2023	SS51-3 Soil N23- Ma0057515 Mar 22, 2023	SS27-1 Soil N23- Ma0057516 Mar 22, 2023
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	-	-	-
Bolstar	0.2	mg/kg	< 0.2	-	-	-
Chlorfenvinphos	0.2	mg/kg	< 0.2	-	-	-
Chlorpyrifos	0.2	mg/kg	< 0.2	-	-	-
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	-	-	-
Coumaphos	2	mg/kg	< 2	-	-	-
Demeton-S	0.2	mg/kg	< 0.2	-	-	-
Demeton-O	0.2	mg/kg	< 0.2	-	-	-
Diazinon	0.2	mg/kg	< 0.2	-	-	-
Dichlorvos	0.2	mg/kg	< 0.2	-	-	-
Dimethoate	0.2	mg/kg	< 0.2	-	-	-
Disulfoton	0.2	mg/kg	< 0.2	-	-	-
EPN	0.2	mg/kg	< 0.2	-	-	-
Ethion	0.2	mg/kg	< 0.2	-	-	-
Ethoprop	0.2	mg/kg	< 0.2	-	-	-
Ethyl parathion	0.2	mg/kg	< 0.2	-	-	-
Fenitrothion	0.2	mg/kg	< 0.2	-	-	-
Fensulfothion	0.2	mg/kg	< 0.2	-	-	-
Fenthion	0.2	mg/kg	< 0.2	-	-	-
Malathion	0.2	mg/kg	< 0.2	-	-	-
Merphos	0.2	mg/kg	< 0.2	-	-	-
Methyl parathion	0.2	mg/kg	< 0.2	-	-	-
Mevinphos	0.2	mg/kg	< 0.2	-	-	-
Monocrotophos	2	mg/kg	< 2	-	-	-
Naled	0.2	mg/kg	< 0.2	-	-	-
Omethoate	2	mg/kg	< 2	-	-	-
Phorate	0.2	mg/kg	< 0.2	-	-	-
Pirimiphos-methyl	0.2	mg/kg	< 0.2	-	-	-
Pyrazophos	0.2	mg/kg	< 0.2	-	-	-
Ronnel	0.2	mg/kg	< 0.2	-	-	-
Terbufos	0.2	mg/kg	< 0.2	-	-	-
Tetrachlorvinphos	0.2	mg/kg	< 0.2	-	-	-
Tokuthion	0.2	mg/kg	< 0.2	-	-	-
Trichloronate	0.2	mg/kg	< 0.2	-	-	-
Triphenylphosphate (surr.)	1	%	93	-	-	-
Heavy Metals						
Arsenic	2	mg/kg	4.3	10	2.6	6.0
Cadmium	0.4	mg/kg	0.5	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	23	13	19	16
Copper	5	mg/kg	13	17	9.6	27
Lead	5	mg/kg	16	19	10	57
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	5.1	< 5	< 5	< 5
Zinc	5	mg/kg	29	100	36	250
Sample Properties						
% Moisture	1	%	6.7	13	9.4	8.2

Client Sample ID			SS59-5	SS16-1	SS51-3	SS27-1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23-Ma0057513	N23-Ma0057514	N23-Ma0057515	N23-Ma0057516
Date Sampled			Mar 22, 2023	Mar 22, 2023	Mar 22, 2023	Mar 22, 2023
Test/Reference	LOR	Unit				
Acid Herbicides						
2,4-D	0.5	mg/kg	< 0.5	-	-	-
2,4-DB	0.5	mg/kg	< 0.5	-	-	-
2,4,5-T	0.5	mg/kg	< 0.5	-	-	-
2,4,5-TP	0.5	mg/kg	< 0.5	-	-	-
Actril (loxynil)	0.5	mg/kg	< 0.5	-	-	-
Dicamba	0.5	mg/kg	< 0.5	-	-	-
Dichlorprop	0.5	mg/kg	< 0.5	-	-	-
Dinitro-o-cresol	0.5	mg/kg	< 0.5	-	-	-
Dinoseb	0.5	mg/kg	< 0.5	-	-	-
MCPA	0.5	mg/kg	< 0.5	-	-	-
MCPB	0.5	mg/kg	< 0.5	-	-	-
Mecoprop	0.5	mg/kg	< 0.5	-	-	-
Warfarin (surr.)	1	%	135	-	-	-

Client Sample ID			TP68-2_0.0-0.2	TP67-0.0-0.2	TP69-2_0.0-0.2	TP71-2_0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23-Ma0057517	N23-Ma0057519	N23-Ma0057521	N23-Ma0057523
Date Sampled			Mar 22, 2023	Mar 22, 2023	Mar 22, 2023	Mar 22, 2023
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	3.7	4.1	2.8	2.7
Cadmium	0.4	mg/kg	< 0.4	< 0.4	0.6	< 0.4
Chromium	5	mg/kg	42	49	9.9	< 5
Copper	5	mg/kg	< 5	< 5	71	43
Lead	5	mg/kg	8.6	8.6	220	110
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	6.6	7.3	6.0	< 5
Zinc	5	mg/kg	12	10.0	440	230
Sample Properties						
% Moisture	1	%	13	14	4.8	3.5
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	-	-	< 20
TRH C10-C14	20	mg/kg	< 20	-	-	< 20
TRH C15-C28	50	mg/kg	< 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	%	91	-	-	93

Client Sample ID			TP68-2_0.0-0.2	TP67-0.0-0.2	TP69-2_0.0-0.2	TP71-2_0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23-Ma0057517	N23-Ma0057519	N23-Ma0057521	N23-Ma0057523
Date Sampled			Mar 22, 2023	Mar 22, 2023	Mar 22, 2023	Mar 22, 2023
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	< 0.5	-	-	0.7
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	-	-	0.7
Total PAH*	0.5	mg/kg	< 0.5	-	-	1.4
2-Fluorobiphenyl (surr.)	1	%	109	-	-	89
p-Terphenyl-d14 (surr.)	1	%	98	-	-	106
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

Client Sample ID			TP70-2_0.0-0.2	TP03_0.0-0.2	TP04_0.0-0.2	TP66-2_0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23-Ma0057526	N23-Ma0057528	N23-Ma0057530	N23-Ma0057532
Date Sampled			Mar 22, 2023	Mar 22, 2023	Mar 22, 2023	Mar 22, 2023
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	< 2	4.4	3.9	3.2
Cadmium	0.4	mg/kg	0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	6.8	50	41	35
Copper	5	mg/kg	63	< 5	5.9	< 5
Lead	5	mg/kg	180	9.7	15	9.3
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	6.6	6.0	< 5
Zinc	5	mg/kg	330	25	98	5.7

Client Sample ID			TP70-2_0.0-0.2	TP03_0.0-0.2	TP04_0.0-0.2	TP66-2_0.0-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N23-Ma0057526	N23-Ma0057528	N23-Ma0057530	N23-Ma0057532
Date Sampled			Mar 22, 2023	Mar 22, 2023	Mar 22, 2023	Mar 22, 2023
Test/Reference	LOR	Unit				
Sample Properties						
% Moisture	1	%	3.3	17	27	15

Client Sample ID			D.22.3.23
Sample Matrix			Soil
Eurofins Sample No.			N23-Ma0057535
Date Sampled			Mar 22, 2023
Test/Reference	LOR	Unit	
Heavy Metals			
Arsenic	2	mg/kg	< 2
Cadmium	0.4	mg/kg	< 0.4
Chromium	5	mg/kg	12
Copper	5	mg/kg	14
Lead	5	mg/kg	11
Mercury	0.1	mg/kg	< 0.1
Nickel	5	mg/kg	< 5
Zinc	5	mg/kg	12
Sample Properties			
% Moisture	1	%	28
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C6-C9	20	mg/kg	< 20
TRH C10-C14	20	mg/kg	62
TRH C15-C28	50	mg/kg	230
TRH C29-C36	50	mg/kg	220
TRH C10-C36 (Total)	50	mg/kg	512
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	%	69
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene ^{N02}	0.5	mg/kg	< 0.5
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50
TRH C6-C10	20	mg/kg	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20
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

Client Sample ID			D.22.3.23
Sample Matrix			Soil
Eurofins Sample No.			N23-Ma0057535
Date Sampled			Mar 22, 2023
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
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	%	89
p-Terphenyl-d14 (surr.)	1	%	104
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
TRH >C10-C16	50	mg/kg	< 50
TRH >C16-C34	100	mg/kg	380
TRH >C34-C40	100	mg/kg	130
TRH >C10-C40 (total)*	100	mg/kg	510

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
Organochlorine Pesticides	Sydney	Apr 05, 2023	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Sydney	Apr 05, 2023	14 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Metals M8	Sydney	Apr 05, 2023	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Apr 05, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Apr 05, 2023	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Apr 05, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Sydney	Apr 05, 2023	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Apr 05, 2023	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
% Moisture	Sydney	Mar 24, 2023	14 Days
- Method: LTM-GEN-7080 Moisture			
Conductivity (1:5 aqueous extract at 25 °C as rec.)	Melbourne	Mar 30, 2023	7 Days
- Method: LTM-INO-4030 Conductivity			
Cation Exchange Capacity	Melbourne	Apr 03, 2023	28 Days
- Method: LTM-MET-3060 Cation Exchange Capacity by bases & Exchangeable Sodium Percentage			
pH (1:5 Aqueous extract at 25 °C as rec.)	Sydney	Mar 28, 2023	7 Days
- Method: LTM-GEN-7090 pH by ISE			
Acid Herbicides	Melbourne	Apr 06, 2023	14 Days
- Method: LTM-ORG-2180 Phenoxy Acid Herbicides			

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Address: 2 Murray Dwyer Circuit
Mayfield West
NSW 2304

Project Name: MEDOWIE GARDENS
Project ID: NEW23P-0009

Order No.:
Report #: 974973
Phone: 02 4968 4468
Fax: 02 4960 9775

Received: Mar 23, 2023 2:10 PM
Due: Mar 30, 2023
Priority: 5 Day
Contact Name: Libby Betz

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - W/A guidelines	Asbestos Absence / Presence	HOLD	pH (1:5 Aqueous extract at 25 °C as rec.)	Acid Herbicides	Metals M8	Suite B14: OCP/OPP	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7
Melbourne Laboratory - NATA # 1261 Site # 1254										X	X			X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X		X	X		X	X	X		X
Mayfield Laboratory - NATA # 1261 Site # 25079 & 25289							X								
External Laboratory															
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID										
1	SS63-5	Mar 22, 2023		Soil	N23-Ma0057480						X	X	X		
2	SS55-3	Mar 22, 2023		Soil	N23-Ma0057481	X			X				X	X	X
3	SS56-5	Mar 22, 2023		Soil	N23-Ma0057482						X	X	X		
4	SS47-3	Mar 22, 2023		Soil	N23-Ma0057483	X					X		X		
5	SS48-3	Mar 22, 2023		Soil	N23-Ma0057484	X					X		X		
6	SS49-3	Mar 22, 2023		Soil	N23-Ma0057485	X					X		X		
7	SS60-5	Mar 22, 2023		Soil	N23-Ma0057486						X	X	X		
8	SS14-1	Mar 22, 2023		Soil	N23-Ma0057487						X		X		
9	SS27-1	Mar 22, 2023		Soil	N23-Ma0057488						X		X		
10	SS19-1	Mar 22, 2023		Soil	N23-Ma0057489	X					X		X		
11	SS24-1	Mar 22, 2023		Soil	N23-Ma0057490	X					X	X	X		

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Melbourne Laboratory - NATA # 1261 Site # 1254										X	X			X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X		X	X		X	X	X		X
Mayfield Laboratory - NATA # 1261 Site # 25079 & 25289							X								
External Laboratory															
12	SS26-1	Mar 22, 2023		Soil	N23-Ma0057491						X		X		
13	SS18-1	Mar 22, 2023		Soil	N23-Ma0057492						X		X		
14	SS25-1	Mar 22, 2023		Soil	N23-Ma0057493	X					X		X		
15	SS17-1	Mar 22, 2023		Soil	N23-Ma0057494	X					X		X		
16	SS15-1	Mar 22, 2023		Soil	N23-Ma0057495						X		X		
17	SS35-1	Mar 22, 2023		Soil	N23-Ma0057496	X					X		X		
18	SS34-1	Mar 22, 2023		Soil	N23-Ma0057497	X					X		X		
19	SS36-1	Mar 22, 2023		Soil	N23-Ma0057498	X					X	X	X		
20	SS33-1	Mar 22, 2023		Soil	N23-Ma0057499	X					X		X		
21	SS37-1	Mar 22, 2023		Soil	N23-Ma0057500	X					X		X		
22	SS32-1	Mar 22, 2023		Soil	N23-Ma0057501	X					X		X		
23	SS22-1	Mar 22, 2023		Soil	N23-Ma0057502						X		X		
24	SS23-1	Mar 22, 2023		Soil	N23-Ma0057503						X	X	X		

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Melbourne Laboratory - NATA # 1261 Site # 1254										X	X			X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X		X	X		X	X	X		X
Mayfield Laboratory - NATA # 1261 Site # 25079 & 25289							X								
External Laboratory															
25	SS53-3	Mar 22, 2023		Soil	N23-Ma0057504	X					X		X		
26	SS61-5	Mar 22, 2023		Soil	N23-Ma0057505						X	X	X		
27	SS62-5	Mar 22, 2023		Soil	N23-Ma0057506						X	X	X		
28	SS52-3	Mar 22, 2023		Soil	N23-Ma0057507	X					X		X		
29	SS54-3	Mar 22, 2023		Soil	N23-Ma0057508	X					X		X		
30	SS29-1	Mar 22, 2023		Soil	N23-Ma0057510	X					X	X	X		
31	SS30-1	Mar 22, 2023		Soil	N23-Ma0057511	X							X		X
32	SS31-1	Mar 22, 2023		Soil	N23-Ma0057512						X		X		
33	SS59-5	Mar 22, 2023		Soil	N23-Ma0057513					X	X	X	X		
34	SS16-1	Mar 22, 2023		Soil	N23-Ma0057514	X					X		X		
35	SS51-3	Mar 22, 2023		Soil	N23-Ma0057515	X					X		X		
36	SS27-1	Mar 22, 2023		Soil	N23-Ma0057516	X					X		X		
37	TP68-2_0.0-	Mar 22, 2023		Soil	N23-Ma0057517	X							X		X

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Melbourne Laboratory - NATA # 1261 Site # 1254										X	X			X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X		X	X		X	X	X		X
Mayfield Laboratory - NATA # 1261 Site # 25079 & 25289							X								
External Laboratory															
	0.2														
38	TP68-2_0.5-0.6	Mar 22, 2023		Soil	N23-Ma0057518			X							
39	TP67-0.0-0.2	Mar 22, 2023		Soil	N23-Ma0057519	X					X		X		
40	TP67-0.5-0.6	Mar 22, 2023		Soil	N23-Ma0057520			X							
41	TP69-2_0.0-0.2	Mar 22, 2023		Soil	N23-Ma0057521	X					X		X		
42	TP69-2_0.4-0.5	Mar 22, 2023		Soil	N23-Ma0057522			X							
43	TP71-2_0.0-0.2	Mar 22, 2023		Soil	N23-Ma0057523	X							X		X
44	TP71-2_FRAG	Mar 22, 2023		Building Materials	N23-Ma0057524		X								
45	TP71-2_0.4-0.5	Mar 22, 2023		Soil	N23-Ma0057525			X							

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Melbourne Laboratory - NATA # 1261 Site # 1254										X	X			X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X		X	X		X	X	X		X
Mayfield Laboratory - NATA # 1261 Site # 25079 & 25289							X								
External Laboratory															
46	TP70-2_0.0-0.2	Mar 22, 2023		Soil	N23-Ma0057526	X					X		X		
47	TP70-2_0.4-0.5	Mar 22, 2023		Soil	N23-Ma0057527			X							
48	TP03_0.0-0.2	Mar 22, 2023		Soil	N23-Ma0057528	X					X		X		
49	TP03_0.5-0.6	Mar 22, 2023		Soil	N23-Ma0057529			X							
50	TP04_0.0-0.2	Mar 22, 2023		Soil	N23-Ma0057530	X					X		X		
51	TP04_0.5-0.6	Mar 22, 2023		Soil	N23-Ma0057531			X							
52	TP66-2_0.0-0.2	Mar 22, 2023		Soil	N23-Ma0057532	X					X		X		
53	TP66-2_0.5-0.6	Mar 22, 2023		Soil	N23-Ma0057533			X							
54	WB 22.3.23	Mar 22, 2023		Water	N23-Ma0057534										X
55	D.22.3.23	Mar 22, 2023		Soil	N23-Ma0057535								X		X

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Sample Detail						Asbestos - W/A guidelines	Asbestos Absence /Presence	HOLD	pH (1:5 Aqueous extract at 25 °C as rec.)	Acid Herbicides	Metals M8	Suite B14: OCP/OPP	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7
Melbourne Laboratory - NATA # 1261 Site # 1254										X	X			X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X		X	X		X	X	X		X
Mayfield Laboratory - NATA # 1261 Site # 25079 & 25289							X								
External Laboratory															
56	SS21-1	Mar 22, 2023		Soil	N23-Ma0057536			X							
Test Counts						30	1	9	1	1	40	10	45	1	6

Internal Quality Control Review and Glossary

General

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

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

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

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

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	mg/L: milligrams per litre	µg/L: micrograms per litre
ppm: parts per million	ppb: parts per billion	%: Percentage
org/100 mL: Organisms per 100 millilitres	NTU: Nephelometric Turbidity Units	MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit		

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry 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 is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (<i>bis</i> -tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

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

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

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

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
- For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-HCH	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-HCH	mg/kg	< 0.05			0.05	Pass	
d-HCH	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-HCH (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/kg	< 0.2			0.2	Pass	
Bolstar	mg/kg	< 0.2			0.2	Pass	
Chlorfenvinphos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos-methyl	mg/kg	< 0.2			0.2	Pass	
Coumaphos	mg/kg	< 2			2	Pass	
Demeton-S	mg/kg	< 0.2			0.2	Pass	
Demeton-O	mg/kg	< 0.2			0.2	Pass	
Diazinon	mg/kg	< 0.2			0.2	Pass	
Dichlorvos	mg/kg	< 0.2			0.2	Pass	
Dimethoate	mg/kg	< 0.2			0.2	Pass	
Disulfoton	mg/kg	< 0.2			0.2	Pass	
EPN	mg/kg	< 0.2			0.2	Pass	
Ethion	mg/kg	< 0.2			0.2	Pass	
Ethoprop	mg/kg	< 0.2			0.2	Pass	
Ethyl parathion	mg/kg	< 0.2			0.2	Pass	
Fenitrothion	mg/kg	< 0.2			0.2	Pass	
Fensulfothion	mg/kg	< 0.2			0.2	Pass	
Fenthion	mg/kg	< 0.2			0.2	Pass	
Malathion	mg/kg	< 0.2			0.2	Pass	
Merphos	mg/kg	< 0.2			0.2	Pass	
Methyl parathion	mg/kg	< 0.2			0.2	Pass	
Mevinphos	mg/kg	< 0.2			0.2	Pass	
Monocrotophos	mg/kg	< 2			2	Pass	
Naled	mg/kg	< 0.2			0.2	Pass	
Omethoate	mg/kg	< 2			2	Pass	
Phorate	mg/kg	< 0.2			0.2	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Pirimiphos-methyl	mg/kg	< 0.2			0.2	Pass	
Pyrazophos	mg/kg	< 0.2			0.2	Pass	
Ronnel	mg/kg	< 0.2			0.2	Pass	
Terbufos	mg/kg	< 0.2			0.2	Pass	
Tetrachlorvinphos	mg/kg	< 0.2			0.2	Pass	
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	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 C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g,h,i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a,h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
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	< 0.05			0.05	Pass	
Method Blank							
Acid Herbicides							
2,4-D	mg/kg	< 0.5			0.5	Pass	
2,4-DB	mg/kg	< 0.5			0.5	Pass	
2,4,5-T	mg/kg	< 0.5			0.5	Pass	
2,4,5-TP	mg/kg	< 0.5			0.5	Pass	
Actril (loxynil)	mg/kg	< 0.5			0.5	Pass	
Dicamba	mg/kg	< 0.5			0.5	Pass	
Dichlorprop	mg/kg	< 0.5			0.5	Pass	
Dinitro-o-cresol	mg/kg	< 0.5			0.5	Pass	
Dinoseb	mg/kg	< 0.5			0.5	Pass	
MCPA	mg/kg	< 0.5			0.5	Pass	
MCPB	mg/kg	< 0.5			0.5	Pass	
Mecoprop	mg/kg	< 0.5			0.5	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	83			70-130	Pass	
4,4'-DDD	%	92			70-130	Pass	
4,4'-DDE	%	84			70-130	Pass	
4,4'-DDT	%	95			70-130	Pass	
a-HCH	%	85			70-130	Pass	
Aldrin	%	80			70-130	Pass	
b-HCH	%	94			70-130	Pass	
d-HCH	%	90			70-130	Pass	
Dieldrin	%	88			70-130	Pass	
Endosulfan I	%	87			70-130	Pass	
Endosulfan II	%	87			70-130	Pass	
Endosulfan sulphate	%	85			70-130	Pass	
Endrin	%	83			70-130	Pass	
Endrin aldehyde	%	82			70-130	Pass	
Endrin ketone	%	86			70-130	Pass	
g-HCH (Lindane)	%	86			70-130	Pass	
Heptachlor	%	100			70-130	Pass	
Heptachlor epoxide	%	89			70-130	Pass	
Hexachlorobenzene	%	84			70-130	Pass	
Methoxychlor	%	120			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	98			70-130	Pass	
Dimethoate	%	98			70-130	Pass	
Ethion	%	110			70-130	Pass	
Fenitrothion	%	125			70-130	Pass	
Methyl parathion	%	111			70-130	Pass	
Mevinphos	%	106			70-130	Pass	
LCS - % Recovery							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Heavy Metals							
Arsenic	%	104			80-120	Pass	
Cadmium	%	108			80-120	Pass	
Chromium	%	95			80-120	Pass	
Copper	%	96			80-120	Pass	
Lead	%	96			80-120	Pass	
Mercury	%	113			80-120	Pass	
Nickel	%	106			80-120	Pass	
Zinc	%	104			80-120	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	103			70-130	Pass	
TRH C10-C14	%	90			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	108			70-130	Pass	
Toluene	%	102			70-130	Pass	
Ethylbenzene	%	114			70-130	Pass	
m&p-Xylenes	%	114			70-130	Pass	
o-Xylene	%	115			70-130	Pass	
Xylenes - Total*	%	115			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	110			70-130	Pass	
TRH C6-C10	%	103			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	97			70-130	Pass	
Acenaphthylene	%	98			70-130	Pass	
Anthracene	%	88			70-130	Pass	
Benz(a)anthracene	%	92			70-130	Pass	
Benzo(a)pyrene	%	99			70-130	Pass	
Benzo(b&j)fluoranthene	%	97			70-130	Pass	
Benzo(g,h,i)perylene	%	103			70-130	Pass	
Benzo(k)fluoranthene	%	94			70-130	Pass	
Chrysene	%	96			70-130	Pass	
Dibenz(a,h)anthracene	%	99			70-130	Pass	
Fluoranthene	%	93			70-130	Pass	
Fluorene	%	96			70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	100			70-130	Pass	
Naphthalene	%	97			70-130	Pass	
Phenanthrene	%	95			70-130	Pass	
Pyrene	%	95			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	90			70-130	Pass	
LCS - % Recovery							
Conductivity (1:5 aqueous extract at 25 °C as rec.)	%	116			70-130	Pass	
LCS - % Recovery							
Acid Herbicides							
2,4,5-T	%	89			70-130	Pass	
2,4,5-TP	%	75			70-130	Pass	
Actril (loxynil)	%	106			70-130	Pass	
Dicamba	%	124			70-130	Pass	

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Dichlorprop				%	118			70-130	Pass	
Dinitro-o-cresol				%	105			70-130	Pass	
Dinoseb				%	111			70-130	Pass	
Mecoprop				%	104			70-130	Pass	
Test	Lab Sample ID	QA Source		Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery										
Organochlorine Pesticides					Result 1					
Chlordanes - Total	S23-Ma0069773	NCP	%	85				70-130	Pass	
4,4'-DDD	S23-Ma0069773	NCP	%	104				70-130	Pass	
4,4'-DDE	S23-Ma0069773	NCP	%	87				70-130	Pass	
4,4'-DDT	S23-Ma0069773	NCP	%	125				70-130	Pass	
a-HCH	S23-Ma0069773	NCP	%	92				70-130	Pass	
Aldrin	S23-Ma0069773	NCP	%	84				70-130	Pass	
b-HCH	S23-Ma0069773	NCP	%	109				70-130	Pass	
d-HCH	S23-Ma0069773	NCP	%	101				70-130	Pass	
Dieldrin	S23-Ma0069773	NCP	%	124				70-130	Pass	
Endosulfan I	S23-Ma0069773	NCP	%	105				70-130	Pass	
Endosulfan II	S23-Ma0069773	NCP	%	98				70-130	Pass	
Endosulfan sulphate	S23-Ma0069773	NCP	%	94				70-130	Pass	
Endrin	S23-Ma0069773	NCP	%	116				70-130	Pass	
Endrin aldehyde	S23-Ma0072643	NCP	%	89				70-130	Pass	
Endrin ketone	S23-Ma0069773	NCP	%	126				70-130	Pass	
g-HCH (Lindane)	S23-Ma0069773	NCP	%	96				70-130	Pass	
Heptachlor	S23-Ma0072643	NCP	%	124				70-130	Pass	
Heptachlor epoxide	S23-Ma0069773	NCP	%	107				70-130	Pass	
Hexachlorobenzene	S23-Ma0069773	NCP	%	83				70-130	Pass	
Spike - % Recovery										
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					Result 1					
TRH C6-C9	S23-Ma0057140	NCP	%	92				70-130	Pass	
Spike - % Recovery										
BTEX					Result 1					
Benzene	S23-Ma0057140	NCP	%	95				70-130	Pass	
Toluene	S23-Ma0057140	NCP	%	82				70-130	Pass	
Ethylbenzene	S23-Ma0057140	NCP	%	95				70-130	Pass	
m&p-Xylenes	S23-Ma0057140	NCP	%	92				70-130	Pass	
o-Xylene	S23-Ma0057140	NCP	%	97				70-130	Pass	
Xylenes - Total*	S23-Ma0057140	NCP	%	93				70-130	Pass	
Spike - % Recovery										
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					Result 1					
Naphthalene	S23-Ma0057140	NCP	%	88				70-130	Pass	
TRH C6-C10	S23-Ma0057140	NCP	%	92				70-130	Pass	
Spike - % Recovery										
Organophosphorus Pesticides					Result 1					
Diazinon	N23-Ma0057482	CP	%	90				70-130	Pass	
Dimethoate	N23-Ma0057482	CP	%	74				70-130	Pass	
Ethion	N23-Ma0057482	CP	%	103				70-130	Pass	
Fenitrothion	N23-Ma0057482	CP	%	118				70-130	Pass	
Mevinphos	N23-Ma0057482	CP	%	90				70-130	Pass	
Spike - % Recovery										
Heavy Metals					Result 1					
Arsenic	N23-Ma0057491	CP	%	105				75-125	Pass	
Cadmium	N23-Ma0057491	CP	%	106				75-125	Pass	
Chromium	N23-Ma0057491	CP	%	105				75-125	Pass	
Copper	N23-Ma0057491	CP	%	102				75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Lead	N23-Ma0057491	CP	%	99			75-125	Pass	
Mercury	N23-Ma0057491	CP	%	112			75-125	Pass	
Nickel	N23-Ma0057491	CP	%	99			75-125	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Methoxychlor	S23-Ma0075435	NCP	%	86			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Methyl parathion	S23-Ma0075435	NCP	%	125			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S23-Ma0075435	NCP	%	95			70-130	Pass	
Acenaphthylene	S23-Ma0075435	NCP	%	102			70-130	Pass	
Anthracene	S23-Ma0075435	NCP	%	83			70-130	Pass	
Benz(a)anthracene	S23-Ma0075435	NCP	%	90			70-130	Pass	
Benzo(a)pyrene	S23-Ma0075435	NCP	%	81			70-130	Pass	
Benzo(b&j)fluoranthene	S23-Ma0075435	NCP	%	88			70-130	Pass	
Benzo(g,h,i)perylene	S23-Ma0075435	NCP	%	117			70-130	Pass	
Benzo(k)fluoranthene	S23-Ma0075435	NCP	%	79			70-130	Pass	
Chrysene	S23-Ma0075435	NCP	%	90			70-130	Pass	
Dibenz(a,h)anthracene	S23-Ma0075435	NCP	%	101			70-130	Pass	
Fluoranthene	S23-Ma0075435	NCP	%	81			70-130	Pass	
Fluorene	S23-Ma0075435	NCP	%	90			70-130	Pass	
Indeno(1,2,3-cd)pyrene	S23-Ma0075435	NCP	%	101			70-130	Pass	
Naphthalene	S23-Ma0075435	NCP	%	92			70-130	Pass	
Phenanthrene	S23-Ma0075435	NCP	%	75			70-130	Pass	
Pyrene	S23-Ma0075435	NCP	%	90			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	N23-Ma0057511	CP	%	105			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	N23-Ma0057511	CP	%	106			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	N23-Ma0057512	CP	%	92			75-125	Pass	
Cadmium	N23-Ma0057512	CP	%	100			75-125	Pass	
Chromium	N23-Ma0057512	CP	%	89			75-125	Pass	
Copper	N23-Ma0057512	CP	%	88			75-125	Pass	
Lead	N23-Ma0057512	CP	%	86			75-125	Pass	
Mercury	N23-Ma0057512	CP	%	105			75-125	Pass	
Nickel	N23-Ma0057512	CP	%	100			75-125	Pass	
Zinc	N23-Ma0057512	CP	%	107			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	N23-Ma0057528	CP	%	90			75-125	Pass	
Cadmium	N23-Ma0057528	CP	%	97			75-125	Pass	
Chromium	N23-Ma0057528	CP	%	92			75-125	Pass	
Copper	N23-Ma0057528	CP	%	90			75-125	Pass	
Lead	N23-Ma0057528	CP	%	96			75-125	Pass	
Mercury	N23-Ma0057528	CP	%	94			75-125	Pass	
Nickel	N23-Ma0057528	CP	%	91			75-125	Pass	
Zinc	N23-Ma0057528	CP	%	115			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	N23-Ma0057480	CP	mg/kg	< 1	< 1	<1	30%	Pass	
4.4'-DDD	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4.4'-DDE	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4.4'-DDT	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
a-HCH	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aldrin	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
b-HCH	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
d-HCH	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dieldrin	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Endosulfan I	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Endosulfan II	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Endosulfan sulphate	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Endrin	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Endrin aldehyde	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Endrin ketone	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
g-HCH (Lindane)	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Heptachlor	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Heptachlor epoxide	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Hexachlorobenzene	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methoxychlor	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bolstar	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chlorfenvinphos	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chlorpyrifos	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chlorpyrifos-methyl	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Coumaphos	N23-Ma0057480	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Demeton-S	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Demeton-O	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Diazinon	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorvos	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dimethoate	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Disulfoton	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
EPN	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ethion	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ethoprop	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ethyl parathion	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fenitrothion	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fensulfothion	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fenthion	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Malathion	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Merphos	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methyl parathion	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Mevinphos	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Monocrotophos	N23-Ma0057480	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Naled	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Omethoate	N23-Ma0057480	CP	mg/kg	< 5	< 5	<1	30%	Pass	
Phorate	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pirimiphos-methyl	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrazophos	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Ronnel	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate								
Organophosphorus Pesticides				Result 1	Result 2	RPD		
Terbufos	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Tetrachlorvinphos	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Tokuthion	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Trichloronate	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)pyrene	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b&j)fluoranthene	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g,h,i)perylene	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a,h)anthracene	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluorene	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	N23-Ma0057480	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Sample Properties				Result 1	Result 2	RPD		
% Moisture	N23-Ma0057481	CP	%	11	11	2.2	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD		
TRH C6-C9	S23-Ma0057139	NCP	mg/kg	< 20	< 20	<1	30%	Pass
TRH C10-C14	S23-Ma0062018	NCP	mg/kg	< 20	< 20	<1	30%	Pass
TRH C15-C28	S23-Ma0062018	NCP	mg/kg	< 50	< 50	<1	30%	Pass
TRH C29-C36	S23-Ma0062018	NCP	mg/kg	< 50	< 50	<1	30%	Pass
Duplicate								
BTEX				Result 1	Result 2	RPD		
Benzene	S23-Ma0057139	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Toluene	S23-Ma0057139	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Ethylbenzene	S23-Ma0057139	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
m&p-Xylenes	S23-Ma0057139	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
o-Xylene	S23-Ma0057139	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Xylenes - Total*	S23-Ma0057139	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	S23-Ma0057139	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	S23-Ma0057139	NCP	mg/kg	< 20	< 20	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	S23-Ma0063882	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	S23-Ma0063882	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	S23-Ma0063882	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	S23-Ma0063882	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)pyrene	S23-Ma0063882	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b&j)fluoranthene	S23-Ma0063882	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g,h,i)perylene	S23-Ma0063882	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	S23-Ma0063882	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	S23-Ma0063882	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass

Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Dibenz(a,h)anthracene	S23-Ma0063882	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	S23-Ma0063882	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluorene	S23-Ma0063882	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1.2.3-cd)pyrene	S23-Ma0063882	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	S23-Ma0063882	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	S23-Ma0063882	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	S23-Ma0063882	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
TRH >C10-C16	S23-Ma0062018	NCP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C16-C34	S23-Ma0062018	NCP	mg/kg	< 100	< 100	<1	30%	Pass
TRH >C34-C40	S23-Ma0062018	NCP	mg/kg	< 100	< 100	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Conductivity (1:5 aqueous extract at 25 °C as rec.)	M23-Ma0066628	NCP	uS/cm	260	260	1.4	30%	Pass
pH (1:5 Aqueous extract at 25 °C as rec.)	S23-Ma0058474	NCP	pH Units	6.8	6.8	<1	30%	Pass
Duplicate								
Cation Exchange Capacity				Result 1	Result 2	RPD		
Cation Exchange Capacity	M23-Ma0056190	NCP	meq/100g	20	22	5.3	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	N23-Ma0057483	CP	mg/kg	3.3	2.5	29	30%	Pass
Cadmium	N23-Ma0057483	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	N23-Ma0057483	CP	mg/kg	30	28	7.5	30%	Pass
Copper	N23-Ma0057483	CP	mg/kg	< 5	< 5	<1	30%	Pass
Lead	N23-Ma0057483	CP	mg/kg	8.5	10	19	30%	Pass
Mercury	N23-Ma0057483	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	N23-Ma0057483	CP	mg/kg	< 5	< 5	<1	30%	Pass
Zinc	N23-Ma0057483	CP	mg/kg	110	160	39	30%	Fail
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	N23-Ma0057485	CP	mg/kg	2.8	2.3	19	30%	Pass
Cadmium	N23-Ma0057485	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	N23-Ma0057485	CP	mg/kg	14	14	5.8	30%	Pass
Copper	N23-Ma0057485	CP	mg/kg	7.0	5.6	22	30%	Pass
Lead	N23-Ma0057485	CP	mg/kg	35	38	9.5	30%	Pass
Mercury	N23-Ma0057485	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	N23-Ma0057485	CP	mg/kg	< 5	< 5	<1	30%	Pass
Zinc	N23-Ma0057485	CP	mg/kg	55	54	1.2	30%	Pass
Duplicate								
Sample Properties				Result 1	Result 2	RPD		
% Moisture	N23-Ma0057485	CP	%	14	16	12	30%	Pass
Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Toxaphene	S23-Ma0063702	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Sample Properties				Result 1	Result 2	RPD		
% Moisture	N23-Ma0057496	CP	%	9.3	9.0	3.4	30%	Pass
Duplicate								
Sample Properties				Result 1	Result 2	RPD		
% Moisture	N23-Ma0057507	CP	%	12	11	11	30%	Pass

Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	N23-Ma0057511	CP	mg/kg	2.7	2.2	23	30%	Pass
Cadmium	N23-Ma0057511	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	N23-Ma0057511	CP	mg/kg	10.0	7.8	25	30%	Pass
Copper	N23-Ma0057511	CP	mg/kg	61	46	27	30%	Pass
Lead	N23-Ma0057511	CP	mg/kg	29	25	15	30%	Pass
Mercury	N23-Ma0057511	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	N23-Ma0057511	CP	mg/kg	< 5	< 5	<1	30%	Pass
Zinc	N23-Ma0057511	CP	mg/kg	240	190	23	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	N23-Ma0057514	CP	mg/kg	10	11	1.7	30%	Pass
Cadmium	N23-Ma0057514	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	N23-Ma0057514	CP	mg/kg	13	15	12	30%	Pass
Copper	N23-Ma0057514	CP	mg/kg	17	19	13	30%	Pass
Lead	N23-Ma0057514	CP	mg/kg	19	18	2.9	30%	Pass
Mercury	N23-Ma0057514	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	N23-Ma0057514	CP	mg/kg	< 5	< 5	<1	30%	Pass
Zinc	N23-Ma0057514	CP	mg/kg	100	120	16	30%	Pass
Duplicate								
Sample Properties				Result 1	Result 2	RPD		
% Moisture	N23-Ma0057521	CP	%	4.8	4.6	4.4	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	N23-Ma0057530	CP	mg/kg	3.9	3.6	8.4	30%	Pass
Cadmium	N23-Ma0057530	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	N23-Ma0057530	CP	mg/kg	41	41	<1	30%	Pass
Copper	N23-Ma0057530	CP	mg/kg	5.9	6.1	1.8	30%	Pass
Lead	N23-Ma0057530	CP	mg/kg	15	13	12	30%	Pass
Mercury	N23-Ma0057530	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	N23-Ma0057530	CP	mg/kg	6.0	6.2	3.2	30%	Pass
Zinc	N23-Ma0057530	CP	mg/kg	98	74	27	30%	Pass

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
G01	The LORs have been raised due to matrix interference
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q02	The duplicate %RPD is outside the recommended acceptance criteria. Further analysis indicates sample heterogeneity as the cause
Q09	The Surrogate recovery is outside of the recommended acceptance criteria due to matrix interference. Acceptance criteria were met for all other QC

Authorised by:

Adam Bateup	Analytical Services Manager
Caitlin Breeze	Senior Analyst-Metal
Fang Yee Tan	Senior Analyst-Metal
Joseph Edouard	Senior Analyst-Organic
Maria Tian	Senior Analyst-Organic
Mary Makarios	Senior Analyst-Inorganic
Raymond Siu	Senior Analyst-Volatile
Roopesh Rangarajan	Senior Analyst-Inorganic
Roopesh Rangarajan	Senior Analyst-Organic
Sayeed Abu	Senior Analyst-Asbestos



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Qualtest
2 Murray Dwyer Circuit
Mayfield West
NSW 2304



NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Attention: **Libby Betz**

Report **979699-S**
 Project name **ADDITIONAL: MEDOWIE GARDENS**
 Project ID **ADDITIONAL: NEW23P-0009**
 Received Date **Apr 11, 2023**

Client Sample ID			TP72-2_0.0-0.2	TP73-2_0.0-0.2	TP74-2_0.0-0.2	SS76-2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S23- Ap0020355	S23- Ap0020356	S23- Ap0020357	S23- Ap0020358
Date Sampled			Mar 21, 2023	Mar 21, 2023	Mar 21, 2023	Mar 21, 2023
Test/Reference	LOR	Unit				
Chromium (hexavalent)	1	mg/kg	< 1	< 1	< 1	< 1
Chromium (trivalent)	5	mg/kg	560	400	420	310
Heavy Metals						
Chromium	5	mg/kg	560	400	420	310
Sample Properties						
% Moisture	1	%	5.5	8.7	7.9	6.3

Client Sample ID			SS55-3
Sample Matrix			Soil
Eurofins Sample No.			S23- Ap0020359
Date Sampled			Mar 22, 2023
Test/Reference	LOR	Unit	
Chromium (hexavalent)	1	mg/kg	< 1
Chromium (trivalent)	5	mg/kg	410
Heavy Metals			
Chromium	5	mg/kg	410
Sample Properties			
% Moisture	1	%	7.0

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
Chromium (speciated)			
Chromium (hexavalent) - Method: In-house method E057.2	Sydney	Apr 13, 2023	28 Days
Chromium (trivalent) - Method: E043 /E057 Total Speciated Chromium	Sydney	Apr 11, 2023	28 Days
Heavy Metals - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Apr 13, 2023	28 Days
% Moisture - Method: LTM-GEN-7080 Moisture	Sydney	Apr 11, 2023	14 Days

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

Project Name: ADDITIONAL: MEDOWIE GARDENS
Project ID: ADDITIONAL: NEW23P-0009

Order No.:
Report #: 979699
Phone: 02 4968 4468
Fax: 02 4960 9775

Received: Apr 11, 2023 3:37 PM
Due: Apr 13, 2023
Priority: 2 Day
Contact Name: Libby Betz

Eurofins Analytical Services Manager : Andrew Black

Sample Detail

Chromium (speciated)

Moisture Set

Sydney Laboratory - NATA # 1261 Site # 18217

External Laboratory

No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	TP72-2_0.0-0.2	Mar 21, 2023		Soil	S23-Ap0020355	X	X
2	TP73-2_0.0-0.2	Mar 21, 2023		Soil	S23-Ap0020356	X	X
3	TP74-2_0.0-0.2	Mar 21, 2023		Soil	S23-Ap0020357	X	X
4	SS76-2	Mar 21, 2023		Soil	S23-Ap0020358	X	X
5	SS55-3	Mar 22, 2023		Soil	S23-Ap0020359	X	X
Test Counts						5	5

Internal Quality Control Review and Glossary

General

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

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

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

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

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	mg/L: milligrams per litre	µg/L: micrograms per litre
ppm: parts per million	ppb: parts per billion	%: Percentage
org/100 mL: Organisms per 100 millilitres	NTU: Nephelometric Turbidity Units	MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit		

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry 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 is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (<i>bis</i> -tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

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

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

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

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
- For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank									
Chromium (hexavalent)			mg/kg	< 1			1	Pass	
Method Blank									
Heavy Metals									
Chromium			mg/kg	< 5			5	Pass	
LCS - % Recovery									
Chromium (hexavalent)			%	104			70-130	Pass	
LCS - % Recovery									
Heavy Metals									
Chromium			%	102			80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
				Result 1					
Chromium (hexavalent)	N23-Ap0013123	NCP	%	81			70-130	Pass	
Spike - % Recovery									
Heavy Metals									
				Result 1					
Chromium	S23-Ap0026009	NCP	%	89			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
				Result 1	Result 2	RPD			
Chromium (hexavalent)	S23-Ap0020355	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Heavy Metals									
				Result 1	Result 2	RPD			
Chromium	S23-Ap0005526	NCP	mg/kg	24	13	61	30%	Fail	Q15
Duplicate									
Sample Properties									
				Result 1	Result 2	RPD			
% Moisture	S23-Ap0015366	NCP	%	86	86	<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
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:

Adam Bateup	Analytical Services Manager
Mickael Ros	Senior Analyst-Metal
Ryan Phillips	Senior Analyst-Inorganic



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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CLIENT DETAILS

Contact Emma Coleman
 Client QUALTEST
 Address 2 MURRAY DWYER CIRCUIT
 MAYFIELD WEST NSW 2304

Telephone 61 2 49684468
 Facsimile (Not specified)
 Email emmacoleman@qualtest.com.au

Project **NEW23P-0009 Medowie Gardens**
 Order Number **NEW23P-0009**
 Samples 1

LABORATORY DETAILS

Manager Huong Crawford
 Laboratory SGS Alexandria Environmental
 Address Unit 16, 33 Maddox St
 Alexandria NSW 2015

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

SGS Reference **SE245327 R0**
 Date Received 30/3/2023
 Date Reported 6/4/2023

COMMENTS

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

SIGNATORIES



Bennet LO
 Senior Chemist



Dong LIANG
 Metals/Inorganics Team Leader



Ly Kim HA
 Organic Section Head



Shane MCDERMOTT
 Inorganic/Metals Chemist

VOC's in Soil [AN433] Tested: 3/4/2023

			T.22.3.23
			SOIL
			-
			29/3/2023
			SE245327.001
PARAMETER	UOM	LOR	
Benzene	mg/kg	0.1	<0.1
Toluene	mg/kg	0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2
o-xylene	mg/kg	0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1

Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 3/4/2023

			T.22.3.23
			SOIL
			-
			29/3/2023
PARAMETER	UOM	LOR	SE245327.001
TRH C6-C9	mg/kg	20	<20
Benzene (F0)	mg/kg	0.1	<0.1
TRH C6-C10	mg/kg	25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 3/4/2023

			T.22.3.23
			SOIL
			-
			29/3/2023
			SE245327.001
PARAMETER	UOM	LOR	
TRH C10-C14	mg/kg	20	51
TRH C15-C28	mg/kg	45	240
TRH C29-C36	mg/kg	45	170
TRH C37-C40	mg/kg	100	<100
TRH >C10-C16	mg/kg	25	59
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	59
TRH >C16-C34 (F3)	mg/kg	90	360
TRH >C34-C40 (F4)	mg/kg	120	<120
TRH C10-C36 Total	mg/kg	110	460
TRH >C10-C40 Total (F bands)	mg/kg	210	420

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 3/4/2023

			T.22.3.23
			SOIL
			-
			29/3/2023
PARAMETER	UOM	LOR	SE245327.001
Naphthalene	mg/kg	0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1
Fluorene	mg/kg	0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1
Anthracene	mg/kg	0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1
Pyrene	mg/kg	0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1
Chrysene	mg/kg	0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 3/4/2023

			T.22.3.23
			SOIL
			-
			29/3/2023
			SE245327.001
PARAMETER	UOM	LOR	
Arsenic, As	mg/kg	1	2
Cadmium, Cd	mg/kg	0.3	<0.3
Chromium, Cr	mg/kg	0.5	12
Copper, Cu	mg/kg	0.5	15
Lead, Pb	mg/kg	1	10
Nickel, Ni	mg/kg	0.5	1.8
Zinc, Zn	mg/kg	2	13



ANALYTICAL RESULTS

SE245327 R0

Mercury in Soil [AN312] Tested: 3/4/2023

			T.22.3.23
			SOIL
			-
			29/3/2023
			SE245327.001
PARAMETER	UOM	LOR	
Mercury	mg/kg	0.05	<0.05



ANALYTICAL RESULTS

SE245327 R0

Moisture Content [AN002] Tested: 3/4/2023

			T.22.3.23
			SOIL
			-
			29/3/2023
			SE245327.001
PARAMETER	UOM	LOR	
% Moisture	%w/w	1	20.4

METHOD

METHODOLOGY SUMMARY

AN002	The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.
AN040/AN320	A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.
AN040	A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analysis by ASS or ICP as per USEPA Method 200.8.
AN312	Mercury by Cold Vapour AAS in Soils: After digestion with nitric acid, hydrogen peroxide and hydrochloric acid, mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500
AN403	Total Recoverable Hydrocarbons: Determination of Hydrocarbons by gas chromatography after a solvent extraction. Detection is by flame ionisation detector (FID) that produces an electronic signal in proportion to the combustible matter passing through it. Total Recoverable Hydrocarbons (TRH) are routinely reported as four alkane groupings based on the carbon chain length of the compounds: C6-C9, C10-C14, C15-C28 and C29-C36 and in recognition of the NEPM 1999 (2013), >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). F2 is reported directly and also corrected by subtracting Naphthalene (from VOC method AN433) where available.
AN403	Additionally, the volatile C6-C9 fraction may be determined by a purge and trap technique and GC/MS because of the potential for volatiles loss. Total Recoverable Hydrocarbons - Silica (TRH-Si) follows the same method of analysis after silica gel cleanup of the solvent extract. Aliphatic/Aromatic Speciation follows the same method of analysis after fractionation of the solvent extract over silica with differential polarity of the eluent solvents.
AN403	The GC/FID method is not well suited to the analysis of refined high boiling point materials (ie lubricating oils or greases) but is particularly suited for measuring diesel, kerosene and petrol if care to control volatility is taken. This method will detect naturally occurring hydrocarbons, lipids, animal fats, phenols and PAHs if they are present at sufficient levels, dependent on the use of specific cleanup/fractionation techniques. Reference USEPA 3510B, 8015B.
AN420	(SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols (etc) in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D). Total PAH calculated from individual analyte detections at or above the limit of reporting.
AN420	Carcinogenic PAHs may be expressed as Benzo(a)pyrene equivalents by applying the BaP toxicity equivalence factor (NEPM 1999, June 2013, B7). These can be reported as the individual PAHs and as a sum of carcinogenic PAHs. The sum is reported three ways, the first assuming all <LOR results are zero, the second assuming all <LOR results are half the LOR and the third assuming all <LOR results are the LOR.
AN433	VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC's are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.

FOOTNOTES

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

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

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

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

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

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

Note that in terms of units of radioactivity:

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

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

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

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Qualtest
2 Murray Dwyer Circuit
Mayfield West
NSW 2304



NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Attention: **Libby Betz**

Report **974973-W**
 Project name **MEDOWIE GARDENS**
 Project ID **NEW23P-0009**
 Received Date **Mar 23, 2023**

Client Sample ID			WB 22.3.23
Sample Matrix			Water
Eurofins Sample No.			N23-Ma0057534
Date Sampled			Mar 22, 2023
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C6-C9	0.02	mg/L	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1
BTEX			
Benzene	0.001	mg/L	< 0.001
Toluene	0.001	mg/L	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002
o-Xylene	0.001	mg/L	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003
4-Bromofluorobenzene (surr.)	1	%	129
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene ^{N02}	0.01	mg/L	< 0.01
TRH >C10-C16 less Naphthalene (F2) ^{N01}	0.05	mg/L	< 0.05
TRH C6-C10	0.02	mg/L	< 0.02
TRH C6-C10 less BTEX (F1) ^{N04}	0.02	mg/L	< 0.02
Polycyclic Aromatic Hydrocarbons			
Acenaphthene	0.001	mg/L	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001
Anthracene	0.001	mg/L	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001
Chrysene	0.001	mg/L	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001
Fluoranthene	0.001	mg/L	< 0.001
Fluorene	0.001	mg/L	< 0.001
Indeno(1,2,3-cd)pyrene	0.001	mg/L	< 0.001
Naphthalene	0.001	mg/L	< 0.001
Phenanthrene	0.001	mg/L	< 0.001
Pyrene	0.001	mg/L	< 0.001

Client Sample ID			WB 22.3.23
Sample Matrix			Water
Eurofins Sample No.			N23-Ma0057534
Date Sampled			Mar 22, 2023
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Total PAH*	0.001	mg/L	< 0.001
2-Fluorobiphenyl (surr.)	1	%	62
p-Terphenyl-d14 (surr.)	1	%	118
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
TRH >C10-C16	0.05	mg/L	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1
Heavy Metals			
Arsenic	0.001	mg/L	< 0.001
Cadmium	0.0002	mg/L	< 0.0002
Chromium	0.001	mg/L	< 0.001
Copper	0.001	mg/L	< 0.001
Lead	0.001	mg/L	< 0.001
Mercury	0.0001	mg/L	< 0.0001
Nickel	0.001	mg/L	< 0.001
Zinc	0.005	mg/L	< 0.005

Sample History

Where samples are submitted/analysed over several days, the last date of extraction 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 - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Mar 28, 2023	7 Days
BTEX - Method: LTM-ORG-2010 BTEX and Volatile TRH	Sydney	Mar 28, 2023	14 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Mar 28, 2023	7 Days
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Sydney	Mar 28, 2023	7 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Mar 28, 2023	7 Days
Metals M8 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Mar 28, 2023	28 Days

Company Name: Qualtest
Address: 2 Murray Dwyer Circuit
Mayfield West
NSW 2304
Project Name: MEDOWIE GARDENS
Project ID: NEW23P-0009

Order No.:
Report #: 974973
Phone: 02 4968 4468
Fax: 02 4960 9775

Received: Mar 23, 2023 2:10 PM
Due: Mar 30, 2023
Priority: 5 Day
Contact Name: Libby Betz

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - W/A guidelines	Asbestos Absence / Presence	HOLD	pH (1:5 Aqueous extract at 25 °C as rec.)	Acid Herbicides	Metals M8	Suite B14: OCP/OPP	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7
Melbourne Laboratory - NATA # 1261 Site # 1254										X	X			X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X		X	X		X	X	X		X
Mayfield Laboratory - NATA # 1261 Site # 25079 & 25289							X								
External Laboratory															
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID										
1	SS63-5	Mar 22, 2023		Soil	N23-Ma0057480						X	X	X		
2	SS55-3	Mar 22, 2023		Soil	N23-Ma0057481	X			X				X	X	X
3	SS56-5	Mar 22, 2023		Soil	N23-Ma0057482						X	X	X		
4	SS47-3	Mar 22, 2023		Soil	N23-Ma0057483	X					X		X		
5	SS48-3	Mar 22, 2023		Soil	N23-Ma0057484	X					X		X		
6	SS49-3	Mar 22, 2023		Soil	N23-Ma0057485	X					X		X		
7	SS60-5	Mar 22, 2023		Soil	N23-Ma0057486						X	X	X		
8	SS14-1	Mar 22, 2023		Soil	N23-Ma0057487						X		X		
9	SS27-1	Mar 22, 2023		Soil	N23-Ma0057488						X		X		
10	SS19-1	Mar 22, 2023		Soil	N23-Ma0057489	X					X		X		
11	SS24-1	Mar 22, 2023		Soil	N23-Ma0057490	X					X	X	X		

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

Project Name: MEDOWIE GARDENS
Project ID: NEW23P-0009

Order No.:
Report #: 974973
Phone: 02 4968 4468
Fax: 02 4960 9775

Received: Mar 23, 2023 2:10 PM
Due: Mar 30, 2023
Priority: 5 Day
Contact Name: Libby Betz

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - W/A guidelines	Asbestos Absence / Presence	HOLD	pH (1:5 Aqueous extract at 25 °C as rec.)	Acid Herbicides	Metals M8	Suite B14: OCP/OPP	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7
Melbourne Laboratory - NATA # 1261 Site # 1254										X	X			X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X		X	X		X	X	X		X
Mayfield Laboratory - NATA # 1261 Site # 25079 & 25289							X								
External Laboratory															
12	SS26-1	Mar 22, 2023		Soil	N23-Ma0057491						X		X		
13	SS18-1	Mar 22, 2023		Soil	N23-Ma0057492						X		X		
14	SS25-1	Mar 22, 2023		Soil	N23-Ma0057493	X					X		X		
15	SS17-1	Mar 22, 2023		Soil	N23-Ma0057494	X					X		X		
16	SS15-1	Mar 22, 2023		Soil	N23-Ma0057495						X		X		
17	SS35-1	Mar 22, 2023		Soil	N23-Ma0057496	X					X		X		
18	SS34-1	Mar 22, 2023		Soil	N23-Ma0057497	X					X		X		
19	SS36-1	Mar 22, 2023		Soil	N23-Ma0057498	X					X	X	X		
20	SS33-1	Mar 22, 2023		Soil	N23-Ma0057499	X					X		X		
21	SS37-1	Mar 22, 2023		Soil	N23-Ma0057500	X					X		X		
22	SS32-1	Mar 22, 2023		Soil	N23-Ma0057501	X					X		X		
23	SS22-1	Mar 22, 2023		Soil	N23-Ma0057502						X		X		
24	SS23-1	Mar 22, 2023		Soil	N23-Ma0057503						X	X	X		

Company Name: Qualtest
Address: 2 Murray Dwyer Circuit
Mayfield West
NSW 2304
Project Name: MEDOWIE GARDENS
Project ID: NEW23P-0009

Order No.:
Report #: 974973
Phone: 02 4968 4468
Fax: 02 4960 9775

Received: Mar 23, 2023 2:10 PM
Due: Mar 30, 2023
Priority: 5 Day
Contact Name: Libby Betz

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - WA guidelines	Asbestos Absence / Presence	HOLD	pH (1:5 Aqueous extract at 25 °C as rec.)	Acid Herbicides	Metals M8	Suite B14: OCP/OPP	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7
Melbourne Laboratory - NATA # 1261 Site # 1254										X	X			X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X		X	X		X	X	X		X
Mayfield Laboratory - NATA # 1261 Site # 25079 & 25289							X								
External Laboratory															
25	SS53-3	Mar 22, 2023		Soil	N23-Ma0057504	X					X		X		
26	SS61-5	Mar 22, 2023		Soil	N23-Ma0057505						X	X	X		
27	SS62-5	Mar 22, 2023		Soil	N23-Ma0057506						X	X	X		
28	SS52-3	Mar 22, 2023		Soil	N23-Ma0057507	X					X		X		
29	SS54-3	Mar 22, 2023		Soil	N23-Ma0057508	X					X		X		
30	SS29-1	Mar 22, 2023		Soil	N23-Ma0057510	X					X	X	X		
31	SS30-1	Mar 22, 2023		Soil	N23-Ma0057511	X							X		X
32	SS31-1	Mar 22, 2023		Soil	N23-Ma0057512						X		X		
33	SS59-5	Mar 22, 2023		Soil	N23-Ma0057513					X	X	X	X		
34	SS16-1	Mar 22, 2023		Soil	N23-Ma0057514	X					X		X		
35	SS51-3	Mar 22, 2023		Soil	N23-Ma0057515	X					X		X		
36	SS27-1	Mar 22, 2023		Soil	N23-Ma0057516	X					X		X		
37	TP68-2_0.0-	Mar 22, 2023		Soil	N23-Ma0057517	X							X		X

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Contact Name: Libby Betz

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - W/A guidelines	Asbestos Absence / Presence	HOLD	pH (1:5 Aqueous extract at 25 °C as rec.)	Acid Herbicides	Metals M8	Suite B14: OCP/OPP	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7
Melbourne Laboratory - NATA # 1261 Site # 1254										X	X			X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X		X	X		X	X	X		X
Mayfield Laboratory - NATA # 1261 Site # 25079 & 25289							X								
External Laboratory															
	0.2														
38	TP68-2_0.5-0.6	Mar 22, 2023		Soil	N23-Ma0057518			X							
39	TP67-0.0-0.2	Mar 22, 2023		Soil	N23-Ma0057519	X					X		X		
40	TP67-0.5-0.6	Mar 22, 2023		Soil	N23-Ma0057520			X							
41	TP69-2_0.0-0.2	Mar 22, 2023		Soil	N23-Ma0057521	X					X		X		
42	TP69-2_0.4-0.5	Mar 22, 2023		Soil	N23-Ma0057522			X							
43	TP71-2_0.0-0.2	Mar 22, 2023		Soil	N23-Ma0057523	X							X		X
44	TP71-2_FRAG	Mar 22, 2023		Building Materials	N23-Ma0057524		X								
45	TP71-2_0.4-0.5	Mar 22, 2023		Soil	N23-Ma0057525			X							

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Sample Detail						Asbestos - W/A guidelines	Asbestos Absence / Presence	HOLD	pH (1:5 Aqueous extract at 25 °C as rec.)	Acid Herbicides	Metals M8	Suite B14: OCP/OPP	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7
Melbourne Laboratory - NATA # 1261 Site # 1254										X	X			X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X		X	X		X	X	X		X
Mayfield Laboratory - NATA # 1261 Site # 25079 & 25289							X								
External Laboratory															
46	TP70-2_0.0-0.2	Mar 22, 2023		Soil	N23-Ma0057526	X					X		X		
47	TP70-2_0.4-0.5	Mar 22, 2023		Soil	N23-Ma0057527			X							
48	TP03_0.0-0.2	Mar 22, 2023		Soil	N23-Ma0057528	X					X		X		
49	TP03_0.5-0.6	Mar 22, 2023		Soil	N23-Ma0057529			X							
50	TP04_0.0-0.2	Mar 22, 2023		Soil	N23-Ma0057530	X					X		X		
51	TP04_0.5-0.6	Mar 22, 2023		Soil	N23-Ma0057531			X							
52	TP66-2_0.0-0.2	Mar 22, 2023		Soil	N23-Ma0057532	X					X		X		
53	TP66-2_0.5-0.6	Mar 22, 2023		Soil	N23-Ma0057533			X							
54	WB 22.3.23	Mar 22, 2023		Water	N23-Ma0057534										X
55	D.22.3.23	Mar 22, 2023		Soil	N23-Ma0057535								X		X

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Sample Detail						Asbestos - W/A guidelines	Asbestos Absence /Presence	HOLD	pH (1:5 Aqueous extract at 25 °C as rec.)	Acid Herbicides	Metals M8	Suite B14: OCP/OPP	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7
Melbourne Laboratory - NATA # 1261 Site # 1254										X	X			X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X		X	X		X	X	X		X
Mayfield Laboratory - NATA # 1261 Site # 25079 & 25289							X								
External Laboratory															
56	SS21-1	Mar 22, 2023		Soil	N23-Ma0057536			X							
Test Counts						30	1	9	1	1	40	10	45	1	6

Internal Quality Control Review and Glossary

General

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

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

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

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

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	mg/L: milligrams per litre	µg/L: micrograms per litre
ppm: parts per million	ppb: parts per billion	%: Percentage
org/100 mL: Organisms per 100 millilitres	NTU: Nephelometric Turbidity Units	MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit		

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry 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 is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (<i>bis</i> -tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

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

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR: No Limit

Results between 10-20 times the LOR: RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

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

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
- For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total*	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.01			0.01	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g,h,i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a,h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1,2,3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Total Recoverable Hydrocarbons - 1999 NEPM Fractions										
TRH C6-C9				%	87			70-130	Pass	
TRH C10-C14				%	102			70-130	Pass	
LCS - % Recovery										
BTEX										
Benzene				%	93			70-130	Pass	
Toluene				%	95			70-130	Pass	
Ethylbenzene				%	94			70-130	Pass	
m&p-Xylenes				%	96			70-130	Pass	
o-Xylene				%	96			70-130	Pass	
Xylenes - Total*				%	96			70-130	Pass	
LCS - % Recovery										
Total Recoverable Hydrocarbons - 2013 NEPM Fractions										
Naphthalene				%	93			70-130	Pass	
TRH C6-C10				%	87			70-130	Pass	
LCS - % Recovery										
Polycyclic Aromatic Hydrocarbons										
Acenaphthene				%	94			70-130	Pass	
Acenaphthylene				%	96			70-130	Pass	
Anthracene				%	89			70-130	Pass	
Benz(a)anthracene				%	88			70-130	Pass	
Benzo(a)pyrene				%	102			70-130	Pass	
Benzo(b&j)fluoranthene				%	100			70-130	Pass	
Benzo(g,h,i)perylene				%	103			70-130	Pass	
Benzo(k)fluoranthene				%	92			70-130	Pass	
Chrysene				%	98			70-130	Pass	
Dibenz(a,h)anthracene				%	96			70-130	Pass	
Fluoranthene				%	89			70-130	Pass	
Fluorene				%	94			70-130	Pass	
Indeno(1.2.3-cd)pyrene				%	96			70-130	Pass	
Naphthalene				%	96			70-130	Pass	
Phenanthrene				%	95			70-130	Pass	
Pyrene				%	91			70-130	Pass	
LCS - % Recovery										
Total Recoverable Hydrocarbons - 2013 NEPM Fractions										
TRH >C10-C16				%	104			70-130	Pass	
LCS - % Recovery										
Heavy Metals										
Arsenic				%	96			80-120	Pass	
Cadmium				%	95			80-120	Pass	
Chromium				%	96			80-120	Pass	
Copper				%	90			80-120	Pass	
Lead				%	94			80-120	Pass	
Mercury				%	109			80-120	Pass	
Nickel				%	93			80-120	Pass	
Zinc				%	88			80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Spike - % Recovery										
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1						
TRH C10-C14	S23-Ap0000676	NCP	%	73			70-130	Pass		
Spike - % Recovery										
Polycyclic Aromatic Hydrocarbons				Result 1						
Acenaphthene	N23-Ma0052132	NCP	%	86			70-130	Pass		
Acenaphthylene	N23-Ma0052132	NCP	%	90			70-130	Pass		

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Anthracene	N23-Ma0052132	NCP	%	77			70-130	Pass	
Benz(a)anthracene	N23-Ma0071276	NCP	%	95			70-130	Pass	
Benzo(a)pyrene	N23-Ma0071276	NCP	%	110			70-130	Pass	
Benzo(b&j)fluoranthene	N23-Ma0071276	NCP	%	103			70-130	Pass	
Benzo(g,h,i)perylene	N23-Ma0071276	NCP	%	96			70-130	Pass	
Benzo(k)fluoranthene	N23-Ma0071276	NCP	%	116			70-130	Pass	
Chrysene	N23-Ma0071276	NCP	%	118			70-130	Pass	
Dibenz(a,h)anthracene	N23-Ma0071276	NCP	%	95			70-130	Pass	
Fluoranthene	N23-Ma0052132	NCP	%	70			70-130	Pass	
Fluorene	N23-Ma0052132	NCP	%	86			70-130	Pass	
Indeno(1,2,3-cd)pyrene	N23-Ma0071276	NCP	%	103			70-130	Pass	
Naphthalene	N23-Ma0052132	NCP	%	80			70-130	Pass	
Phenanthrene	N23-Ma0052132	NCP	%	84			70-130	Pass	
Pyrene	N23-Ma0052132	NCP	%	71			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S23-Ap0000676	NCP	%	74			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S23-Ma0061576	NCP	%	98			75-125	Pass	
Cadmium	S23-Ma0061576	NCP	%	97			75-125	Pass	
Chromium	S23-Ma0061576	NCP	%	93			75-125	Pass	
Copper	S23-Ma0061576	NCP	%	87			75-125	Pass	
Lead	S23-Ma0061576	NCP	%	91			75-125	Pass	
Mercury	S23-Ma0061576	NCP	%	108			75-125	Pass	
Nickel	S23-Ma0061576	NCP	%	90			75-125	Pass	
Zinc	S23-Ma0061576	NCP	%	85			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S23-Ma0065018	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	S23-Ma0062374	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	S23-Ma0062374	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	S23-Ma0062374	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S23-Ma0065018	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S23-Ma0065018	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S23-Ma0065018	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S23-Ma0065018	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S23-Ma0065018	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total*	S23-Ma0065018	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S23-Ma0065018	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	S23-Ma0065018	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	N23-Ma0052131	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	N23-Ma0052131	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	N23-Ma0052131	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	N23-Ma0052131	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	N23-Ma0052131	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	N23-Ma0052131	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Benzo(g,h,i)perylene	N23-Ma0052131	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(k)fluoranthene	N23-Ma0052131	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Chrysene	N23-Ma0052131	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Dibenz(a,h)anthracene	N23-Ma0052131	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluoranthene	N23-Ma0052131	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluorene	N23-Ma0052131	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	N23-Ma0052131	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Naphthalene	N23-Ma0052131	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Phenanthrene	N23-Ma0052131	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Pyrene	N23-Ma0052131	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
TRH >C10-C16	S23-Ma0062374	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass
TRH >C16-C34	S23-Ma0062374	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass
TRH >C34-C40	S23-Ma0062374	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	N23-Ma0052136	NCP	mg/L	0.003	0.003	19	30%	Pass
Cadmium	N23-Ma0052136	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Chromium	N23-Ma0052136	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Copper	N23-Ma0052136	NCP	mg/L	0.002	< 0.001	59	30%	Fail Q15
Lead	N23-Ma0052136	NCP	mg/L	0.002	0.001	45	30%	Fail Q15
Mercury	S23-Ma0055842	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Nickel	N23-Ma0052136	NCP	mg/L	0.002	0.001	13	30%	Pass
Zinc	N23-Ma0052136	NCP	mg/L	0.022	0.019	12	30%	Pass

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Adam Bateup	Analytical Services Manager
Mickael Ros	Senior Analyst-Metal
Roopesh Rangarajan	Senior Analyst-Organic
Roopesh Rangarajan	Senior Analyst-Volatile



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Project **NEW23P-0009 Medowie Gardens**
 Order Number **NEW23P-0009**
 Samples 1

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SGS Reference **SE245060 R0**
 Date Received 24 Mar 2023
 Date Reported 31 Mar 2023

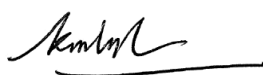
COMMENTS

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

SIGNATORIES



Dong LIANG
 Metals/Inorganics Team Leader



Ly Kim HA
 Organic Section Head



Shane MCDERMOTT
 Inorganic/Metals Chemist

		Sample Number	SE245060.001
		Sample Matrix	Soil
		Sample Date	21 Mar 2023
		Sample Name	T21.3.23
Parameter	Units	LOR	

VOC's in Soil Method: AN433 Tested: 28/3/2023

Monocyclic Aromatic Hydrocarbons

Benzene	mg/kg	0.1	<0.1
Toluene	mg/kg	0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2
o-xylene	mg/kg	0.1	<0.1

Polycyclic VOCs

Naphthalene (VOC)*	mg/kg	0.1	<0.1
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Surrogates

d4-1,2-dichloroethane (Surrogate)	%	-	84
d8-toluene (Surrogate)	%	-	90
Bromofluorobenzene (Surrogate)	%	-	84

Totals

Total BTEX*	mg/kg	0.6	<0.6
Total Xylenes*	mg/kg	0.3	<0.3

Volatile Petroleum Hydrocarbons in Soil Method: AN433 Tested: 28/3/2023

TRH C6-C10	mg/kg	25	<25
TRH C6-C9	mg/kg	20	<20

Surrogates

d4-1,2-dichloroethane (Surrogate)	%	-	84
d8-toluene (Surrogate)	%	-	90
Bromofluorobenzene (Surrogate)	%	-	84

		Sample Number	SE245060.001
		Sample Matrix	Soil
		Sample Date	21 Mar 2023
		Sample Name	T21.3.23
Parameter	Units	LOR	

Volatile Petroleum Hydrocarbons in Soil Method: AN433 Tested: 28/3/2023 (continued)

VPH F Bands

Benzene (F0)	mg/kg	0.1	<0.1
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25

TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403 Tested: 28/3/2023

TRH C10-C14	mg/kg	20	<20
TRH C15-C28	mg/kg	45	<45
TRH C29-C36	mg/kg	45	<45
TRH C37-C40	mg/kg	100	<100
TRH C10-C36 Total	mg/kg	110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210

TRH F Bands

TRH >C10-C16	mg/kg	25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120

PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 Tested: 28/3/2023

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

Sample Number SE245060.001
Sample Matrix Soil
Sample Date 21 Mar 2023
Sample Name T21.3.23

Parameter Units LOR

PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 Tested: 28/3/2023 (continued)

Surrogates

d5-nitrobenzene (Surrogate)	%	-	111
2-fluorobiphenyl (Surrogate)	%	-	98
d14-p-terphenyl (Surrogate)	%	-	106

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES Method: AN040/AN320 Tested: 29/3/2023

Arsenic, As	mg/kg	1	9
Cadmium, Cd	mg/kg	0.3	<0.3
Chromium, Cr	mg/kg	0.5	420
Copper, Cu	mg/kg	0.5	14
Nickel, Ni	mg/kg	0.5	5.6
Lead, Pb	mg/kg	1	24
Zinc, Zn	mg/kg	2	78

Mercury in Soil Method: AN312 Tested: 29/3/2023

Mercury	mg/kg	0.05	<0.05
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Moisture Content Method: AN002 Tested: 28/3/2023

% Moisture	%w/w	1	8.9
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MB blank results are compared to the Limit of Reporting

LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.

DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

Mercury in Soil Method: ME-(AU)-[ENV]AN312

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Mercury	LB275321	mg/kg	0.05	<0.05	0%	109%	105%

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

Parameter	QC Reference	Units	LOR	DUP %RPD
% Moisture	LB275210	%w/w	1	15 - 17%

PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: ME-(AU)-[ENV]AN420

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Naphthalene	LB275206	mg/kg	0.1	<0.1	0%	111%	109%
2-methylnaphthalene	LB275206	mg/kg	0.1	<0.1	0%	NA	NA
1-methylnaphthalene	LB275206	mg/kg	0.1	<0.1	0%	NA	NA
Acenaphthylene	LB275206	mg/kg	0.1	<0.1	0%	113%	111%
Acenaphthene	LB275206	mg/kg	0.1	<0.1	0%	110%	106%
Fluorene	LB275206	mg/kg	0.1	<0.1	0%	NA	NA
Phenanthrene	LB275206	mg/kg	0.1	<0.1	0%	105%	102%
Anthracene	LB275206	mg/kg	0.1	<0.1	0%	113%	104%
Fluoranthene	LB275206	mg/kg	0.1	<0.1	10 - 11%	116%	107%
Pyrene	LB275206	mg/kg	0.1	<0.1	5 - 8%	116%	102%
Benzo(a)anthracene	LB275206	mg/kg	0.1	<0.1	0%	NA	NA
Chrysene	LB275206	mg/kg	0.1	<0.1	0%	NA	NA
Benzo(b&j)fluoranthene	LB275206	mg/kg	0.1	<0.1	0%	NA	NA
Benzo(k)fluoranthene	LB275206	mg/kg	0.1	<0.1	0%	NA	NA
Benzo(a)pyrene	LB275206	mg/kg	0.1	<0.1	0%	108%	95%
Indeno(1,2,3-cd)pyrene	LB275206	mg/kg	0.1	<0.1	0%	NA	NA
Dibenzo(ah)anthracene	LB275206	mg/kg	0.1	<0.1	0%	NA	NA
Benzo(ghi)perylene	LB275206	mg/kg	0.1	<0.1	0%	NA	NA
Carcinogenic PAHs, BaP TEQ <LOR=0*	LB275206	TEQ (mg/kg)	0.2	<0.2	0%	NA	NA
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	LB275206	TEQ (mg/kg)	0.2	<0.2	0%	NA	NA
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	LB275206	TEQ (mg/kg)	0.3	<0.3	0%	NA	NA
Total PAH (18)	LB275206	mg/kg	0.8	<0.8	9 - 74%	NA	NA
Total PAH (NEPM/WHO 16)	LB275206	mg/kg	0.8	<0.8			

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
d5-nitrobenzene (Surrogate)	LB275206	%	-	104%	0 - 1%	105%	113%
2-fluorobiphenyl (Surrogate)	LB275206	%	-	98%	1 - 3%	92%	100%
d14-p-terphenyl (Surrogate)	LB275206	%	-	112%	1 - 2%	104%	103%

MB blank results are compared to the Limit of Reporting

LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.

DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES Method: ME-(AU)-[ENV]AN040/AN320

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Arsenic, As	LB275320	mg/kg	1	<1	13 - 22%	110%	89%
Cadmium, Cd	LB275320	mg/kg	0.3	<0.3	0%	97%	85%
Chromium, Cr	LB275320	mg/kg	0.5	<0.5	7 - 8%	106%	90%
Copper, Cu	LB275320	mg/kg	0.5	<0.5	2 - 14%	111%	90%
Nickel, Ni	LB275320	mg/kg	0.5	<0.5	3 - 14%	103%	86%
Lead, Pb	LB275320	mg/kg	1	<1	4 - 18%	104%	89%
Zinc, Zn	LB275320	mg/kg	2	<2.0	0 - 13%	104%	87%

TRH (Total Recoverable Hydrocarbons) in Soil Method: ME-(AU)-[ENV]AN403

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
TRH C10-C14	LB275206	mg/kg	20	<20	0 - 34%	129%	134%
TRH C15-C28	LB275206	mg/kg	45	<45	0 - 119%	138%	160%
TRH C29-C36	LB275206	mg/kg	45	<45	0 - 103%	96%	317%
TRH C37-C40	LB275206	mg/kg	100	<100	0 - 12%	NA	NA
TRH C10-C36 Total	LB275206	mg/kg	110	<110	0 - 106%	NA	NA
TRH >C10-C40 Total (F bands)	LB275206	mg/kg	210	<210	0 - 124%	NA	NA

TRH F Bands

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
TRH >C10-C16	LB275206	mg/kg	25	<25	0 - 9%	132%	100%
TRH >C10-C16 - Naphthalene (F2)	LB275206	mg/kg	25	<25	0 - 9%	NA	NA
TRH >C16-C34 (F3)	LB275206	mg/kg	90	<90	0 - 121%	130%	291%
TRH >C34-C40 (F4)	LB275206	mg/kg	120	<120	0 - 61%	86%	NA

VOC's in Soil Method: ME-(AU)-[ENV]AN433

Monocyclic Aromatic Hydrocarbons

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Benzene	LB275205	mg/kg	0.1	<0.1	0%	99%	109%
Toluene	LB275205	mg/kg	0.1	<0.1	0%	96%	111%
Ethylbenzene	LB275205	mg/kg	0.1	<0.1	0%	97%	112%
m/p-xylene	LB275205	mg/kg	0.2	<0.2	0%	93%	107%
o-xylene	LB275205	mg/kg	0.1	<0.1	0%	99%	117%

Polycyclic VOCs

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Naphthalene (VOC)*	LB275205	mg/kg	0.1	<0.1	0%	NA	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
d4-1,2-dichloroethane (Surrogate)	LB275205	%	-	97%	4 - 5%	96%	81%
d8-toluene (Surrogate)	LB275205	%	-	100%	3 - 7%	99%	87%
Bromofluorobenzene (Surrogate)	LB275205	%	-	91%	2 - 7%	101%	94%

Totals

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Total BTEX*	LB275205	mg/kg	0.6	<0.6	0%	NA	NA
Total Xylenes*	LB275205	mg/kg	0.3	<0.3	0%	NA	NA

MB blank results are compared to the Limit of Reporting

LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.

DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula : *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

Volatile Petroleum Hydrocarbons in Soil Method: ME-(AU)-[ENV]AN433

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
TRH C6-C10	LB275205	mg/kg	25	<25	0%	95%	130%
TRH C6-C9	LB275205	mg/kg	20	<20	0%	97%	131%

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
d4-1,2-dichloroethane (Surrogate)	LB275205	%	-	97%	4 - 5%	96%	81%
d8-toluene (Surrogate)	LB275205	%	-	100%	3 - 7%	99%	87%
Bromofluorobenzene (Surrogate)	LB275205	%	-	91%	2 - 7%	101%	94%

VPH F Bands

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Benzene (F0)	LB275205	mg/kg	0.1	<0.1	0%	NA	NA
TRH C6-C10 minus BTEX (F1)	LB275205	mg/kg	25	<25	0%	94%	140%

METHOD

METHODOLOGY SUMMARY

AN002	The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.
AN040	A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analysis by ASS or ICP as per USEPA Method 200.8.
AN040/AN320	A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.
AN312	Mercury by Cold Vapour AAS in Soils: After digestion with nitric acid, hydrogen peroxide and hydrochloric acid, mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500
AN403	Total Recoverable Hydrocarbons: Determination of Hydrocarbons by gas chromatography after a solvent extraction. Detection is by flame ionisation detector (FID) that produces an electronic signal in proportion to the combustible matter passing through it. Total Recoverable Hydrocarbons (TRH) are routinely reported as four alkane groupings based on the carbon chain length of the compounds: C6-C9, C10-C14, C15-C28 and C29-C36 and in recognition of the NEPM 1999 (2013), >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). F2 is reported directly and also corrected by subtracting Naphthalene (from VOC method AN433) where available.
AN403	Additionally, the volatile C6-C9 fraction may be determined by a purge and trap technique and GC/MS because of the potential for volatiles loss. Total Recoverable Hydrocarbons - Silica (TRH-Si) follows the same method of analysis after silica gel cleanup of the solvent extract. Aliphatic/Aromatic Speciation follows the same method of analysis after fractionation of the solvent extract over silica with differential polarity of the eluent solvents.
AN403	The GC/FID method is not well suited to the analysis of refined high boiling point materials (ie lubricating oils or greases) but is particularly suited for measuring diesel, kerosene and petrol if care to control volatility is taken. This method will detect naturally occurring hydrocarbons, lipids, animal fats, phenols and PAHs if they are present at sufficient levels, dependent on the use of specific cleanup/fractionation techniques. Reference USEPA 3510B, 8015B.
AN420	(SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols (etc) in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D). Total PAH calculated from individual analyte detections at or above the limit of reporting.
AN420	Carcinogenic PAHs may be expressed as Benzo(a)pyrene equivalents by applying the BaP toxicity equivalence factor (NEPM 1999, June 2013, B7). These can be reported as the individual PAHs and as a sum of carcinogenic PAHs. The sum is reported three ways, the first assuming all <LOR results are zero, the second assuming all <LOR results are half the LOR and the third assuming all <LOR results are the LOR.
AN433	VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC's are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.

FOOTNOTES

IS	Insufficient sample for analysis.	LOR	Limit of Reporting
LNR	Sample listed, but not received.	↑↓	Raised or Lowered Limit of Reporting
*	NATA accreditation does not cover the performance of this service.	QFH	QC result is above the upper tolerance
**	Indicative data, theoretical holding time exceeded.	QFL	QC result is below the lower tolerance
***	Indicates that both * and ** apply.	-	The sample was not analysed for this analyte
		NVL	Not Validated

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.

Solid samples expressed on a dry weight basis.

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

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

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

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

Note that in terms of units of radioactivity:

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

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

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

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STATEMENT OF QA/QC PERFORMANCE

SE245060 R0

CLIENT DETAILS

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Project **NEW23P-0009 Medowie Gardens**
Order Number **NEW23P-0009**
Samples 1

LABORATORY DETAILS

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SGS Reference **SE245060 R0**
Date Received 24 Mar 2023
Date Reported 31 Mar 2023

COMMENTS

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

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

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

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

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

Duplicate	TRH (Total Recoverable Hydrocarbons) in Soil	5 items
Matrix Spike	TRH (Total Recoverable Hydrocarbons) in Soil	3 items
	Volatile Petroleum Hydrocarbons in Soil	3 items

SAMPLE SUMMARY

Sample counts by matrix	1 Soil	Type of documentation received	COC
Date documentation received	24/3/2023	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	19.6°C
Sample container provider	Client	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

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

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

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

Mercury in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T21.3.23	SE245060.001	LB275321	21 Mar 2023	24 Mar 2023	18 Apr 2023	29 Mar 2023	18 Apr 2023	31 Mar 2023

Moisture Content

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T21.3.23	SE245060.001	LB275210	21 Mar 2023	24 Mar 2023	04 Apr 2023	28 Mar 2023	02 Apr 2023	30 Mar 2023

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T21.3.23	SE245060.001	LB275206	21 Mar 2023	24 Mar 2023	04 Apr 2023	28 Mar 2023	07 May 2023	30 Mar 2023

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

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T21.3.23	SE245060.001	LB275320	21 Mar 2023	24 Mar 2023	17 Sep 2023	29 Mar 2023	17 Sep 2023	31 Mar 2023

TRH (Total Recoverable Hydrocarbons) in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T21.3.23	SE245060.001	LB275206	21 Mar 2023	24 Mar 2023	04 Apr 2023	28 Mar 2023	07 May 2023	30 Mar 2023

VOC's in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T21.3.23	SE245060.001	LB275205	21 Mar 2023	24 Mar 2023	04 Apr 2023	28 Mar 2023	04 Apr 2023	30 Mar 2023

Volatile Petroleum Hydrocarbons in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T21.3.23	SE245060.001	LB275205	21 Mar 2023	24 Mar 2023	04 Apr 2023	28 Mar 2023	04 Apr 2023	30 Mar 2023

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

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

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	T21.3.23	SE245060.001	%	70 - 130%	98
d14-p-terphenyl (Surrogate)	T21.3.23	SE245060.001	%	70 - 130%	106
d5-nitrobenzene (Surrogate)	T21.3.23	SE245060.001	%	70 - 130%	111

VOC's in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	T21.3.23	SE245060.001	%	60 - 130%	84
d4-1,2-dichloroethane (Surrogate)	T21.3.23	SE245060.001	%	60 - 130%	84
d8-toluene (Surrogate)	T21.3.23	SE245060.001	%	60 - 130%	90

Volatile Petroleum Hydrocarbons in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	T21.3.23	SE245060.001	%	60 - 130%	84
d4-1,2-dichloroethane (Surrogate)	T21.3.23	SE245060.001	%	60 - 130%	84
d8-toluene (Surrogate)	T21.3.23	SE245060.001	%	60 - 130%	90

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

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

Mercury in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB275321.001	Mercury	mg/kg	0.05	<0.05

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB275206.001	Naphthalene	mg/kg	0.1	<0.1
	2-methylnaphthalene	mg/kg	0.1	<0.1
	1-methylnaphthalene	mg/kg	0.1	<0.1
	Acenaphthylene	mg/kg	0.1	<0.1
	Acenaphthene	mg/kg	0.1	<0.1
	Fluorene	mg/kg	0.1	<0.1
	Phenanthrene	mg/kg	0.1	<0.1
	Anthracene	mg/kg	0.1	<0.1
	Fluoranthene	mg/kg	0.1	<0.1
	Pyrene	mg/kg	0.1	<0.1
	Benzo(a)anthracene	mg/kg	0.1	<0.1
	Chrysene	mg/kg	0.1	<0.1
	Benzo(a)pyrene	mg/kg	0.1	<0.1
	Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
	Dibenzo(ah)anthracene	mg/kg	0.1	<0.1
	Benzo(ghi)perylene	mg/kg	0.1	<0.1
	Total PAH (18)	mg/kg	0.8	<0.8
Surrogates	d5-nitrobenzene (Surrogate)	%	-	104
	2-fluorobiphenyl (Surrogate)	%	-	98
	d14-p-terphenyl (Surrogate)	%	-	112

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

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

Sample Number	Parameter	Units	LOR	Result
LB275320.001	Arsenic, As	mg/kg	1	<1
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.5	<0.5
	Copper, Cu	mg/kg	0.5	<0.5
	Nickel, Ni	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1
	Zinc, Zn	mg/kg	2	<2.0

TRH (Total Recoverable Hydrocarbons) in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB275206.001	TRH C10-C14	mg/kg	20	<20
	TRH C15-C28	mg/kg	45	<45
	TRH C29-C36	mg/kg	45	<45
	TRH C37-C40	mg/kg	100	<100
	TRH C10-C36 Total	mg/kg	110	<110

VOC's in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB275205.001	Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.1	<0.1
		Toluene	mg/kg	0.1	<0.1
		Ethylbenzene	mg/kg	0.1	<0.1
		m/p-xylene	mg/kg	0.2	<0.2
		o-xylene	mg/kg	0.1	<0.1
	Polycyclic VOCs	Naphthalene (VOC)*	mg/kg	0.1	<0.1
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	97
		d8-toluene (Surrogate)	%	-	100
		Bromofluorobenzene (Surrogate)	%	-	91
	Totals	Total BTEX*	mg/kg	0.6	<0.6

Volatile Petroleum Hydrocarbons in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB275205.001	TRH C6-C9	mg/kg	20	<20
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-

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

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

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

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

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

Mercury in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE245011.010	LB275321.014	Mercury	mg/kg	0.05	<0.05	<0.05	200	0
SE245061.005	LB275321.024	Mercury	mg/kg	0.05	<0.05	<0.05	157	0

Moisture Content

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE245060.001	LB275210.019	% Moisture	%w/w	1	8.9	7.5	42	17
SE245159.029	LB275210.011	% Moisture	%w/w	1	14.1	16.4	37	15

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE245060.001	LB275206.021	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
		Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
		Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
		Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
		Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
		Fluoranthene	mg/kg	0.1	0.2	0.2	90	10
		Pyrene	mg/kg	0.1	0.2	0.2	88	8
		Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	163	0
		Chrysene	mg/kg	0.1	<0.1	<0.1	174	0
		Benzo(b&i)fluoranthene	mg/kg	0.1	<0.1	<0.1	141	0
		Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	150	0
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	159	0
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	141	0
		Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	<0.2	<0.2	200	0
		Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	<0.2	<0.2	175	0
		Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	<0.3	<0.3	134	0
		Total PAH (18)	mg/kg	0.8	<0.8	<0.8	59	9
		Surrogates						
		d5-nitrobenzene (Surrogate)	mg/kg	-	0.6	0.6	30	1
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	1
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	2
SE245159.029	LB275206.014	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
		Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
		Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
		Phenanthrene	mg/kg	0.1	<0.1	<0.1	189	0
		Anthracene	mg/kg	0.1	<0.1	<0.1	197	0
		Fluoranthene	mg/kg	0.1	<0.1	0.1	144	11
		Pyrene	mg/kg	0.1	<0.1	0.1	151	5
		Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	167	0
		Chrysene	mg/kg	0.1	<0.1	<0.1	195	0
		Benzo(b&i)fluoranthene	mg/kg	0.1	<0.1	<0.1	198	0
		Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	192	0
		Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
		Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	<0.2	<0.2	200	0
		Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	<0.2	<0.2	175	0
		Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	<0.3	<0.3	134	0
		Total PAH (18)	mg/kg	0.8	<0.8	<0.8	122	74
		Surrogates						
		d5-nitrobenzene (Surrogate)	mg/kg	-	0.6	0.6	30	0
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	3

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: $RPD = |OriginalResult - ReplicateResult| \times 100 / Mean$
The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: $MAD = 100 \times SDL / Mean + LR$
Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

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

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

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE245159.029	LB275206.014	Surrogates d14-p-terphenyl (Surrogate)	mg/kg	-	0.6	0.6	30	1

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

Method: ME-(AU)-[ENV]AN40/AN320

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE245011.010	LB275320.014	Arsenic, As	mg/kg	1	6	5	48	13
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	13	13	34	7
		Copper, Cu	mg/kg	0.5	7.9	6.9	37	14
		Nickel, Ni	mg/kg	0.5	7.1	6.1	38	14
		Lead, Pb	mg/kg	1	51	43	32	18
		Zinc, Zn	mg/kg	2	54	47	34	13
SE245061.005	LB275320.024	Arsenic, As	mg/kg	1	4	4	55	22
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	370	400	30	8
		Copper, Cu	mg/kg	0.5	24	25	32	2
		Nickel, Ni	mg/kg	0.5	85	88	31	3
		Lead, Pb	mg/kg	1	13	13	38	4
		Zinc, Zn	mg/kg	2	47	47	34	0

TRH (Total Recoverable Hydrocarbons) in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE245060.001	LB275206.021	TRH C10-C14	mg/kg	20	<20	<20	200	0
		TRH C15-C28	mg/kg	45	<45	<45	200	0
		TRH C29-C36	mg/kg	45	<45	<45	200	0
		TRH C37-C40	mg/kg	100	<100	<100	200	0
		TRH C10-C36 Total	mg/kg	110	<110	<110	200	0
		TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	200	0
		TRH F Bands	mg/kg	25	<25	<25	200	0
		TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0
		TRH >C16-C34 (F3)	mg/kg	90	<90	<90	200	0
		TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0
SE245159.029	LB275206.014	TRH C10-C14	mg/kg	20	40	28	89	34
		TRH C15-C28	mg/kg	45	380	96	49	119 ②
		TRH C29-C36	mg/kg	45	420	140	46	103 ②
		TRH C37-C40	mg/kg	100	110	<100	176	12
		TRH C10-C36 Total	mg/kg	110	840	260	50	106 ②
		TRH >C10-C40 Total (F bands)	mg/kg	210	950	220	66	124 ②
		TRH F Bands	mg/kg	25	53	58	75	9
		TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	53	58	75	9
		TRH >C16-C34 (F3)	mg/kg	90	670	170	52	121 ②
		TRH >C34-C40 (F4)	mg/kg	120	230	<120	114	61

VOC's in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %	
SE245060.001	LB275205.023	Monocyclic Aromatic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0	
			Toluene	mg/kg	0.1	<0.1	<0.1	200	0	
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0	
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0	
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0	
			Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	200	0
			Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.4	8.8	50	4
		d8-toluene (Surrogate)		mg/kg	-	9.0	9.2	50	3	
		Bromofluorobenzene (Surrogate)		mg/kg	-	8.4	8.5	50	2	
		Totals	Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0	
Total Xylenes*	mg/kg		0.3	<0.3	<0.3	200	0			
SE245159.029	LB275205.014	Monocyclic Aromatic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0	
			Toluene	mg/kg	0.1	<0.1	<0.1	200	0	
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0	
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0	
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0	
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	200	0	
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.6	7.2	50	5	

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$
The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: $MAD = 100 \times \text{SDL} / \text{Mean} + \text{LR}$
Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

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

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

VOC's in Soil (continued)

Method: ME-(AU)-ENVJAN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE245159.029	LB275205.014	Surrogates	d8-toluene (Surrogate)	mg/kg	-	8.6	8.0	50	7
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.2	7.7	50	7
		Totals	Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
			Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-ENVJAN433

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %	
SE245060.001	LB275205.023	TRH C6-C10	mg/kg	25	<25	<25	200	0	
		TRH C6-C9	mg/kg	20	<20	<20	200	0	
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.4	8.8	30	4
			d8-toluene (Surrogate)	mg/kg	-	9.0	9.2	30	3
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.4	8.5	30	2
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0
SE245159.029	LB275205.014	TRH C6-C10	mg/kg	25	<25	<25	200	0	
		TRH C6-C9	mg/kg	20	<20	<20	200	0	
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.6	7.2	30	5
			d8-toluene (Surrogate)	mg/kg	-	8.6	8.0	30	7
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.2	7.7	30	7
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0

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

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

Mercury in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB275321.002	Mercury	mg/kg	0.05	0.22	0.2	80 - 120	109

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB275206.002	Naphthalene	mg/kg	0.1	4.4	4	60 - 140	111
	Acenaphthylene	mg/kg	0.1	4.5	4	60 - 140	113
	Acenaphthene	mg/kg	0.1	4.4	4	60 - 140	110
	Phenanthrene	mg/kg	0.1	4.2	4	60 - 140	105
	Anthracene	mg/kg	0.1	4.5	4	60 - 140	113
	Fluoranthene	mg/kg	0.1	4.6	4	60 - 140	116
	Pyrene	mg/kg	0.1	4.6	4	60 - 140	116
	Benzo(a)pyrene	mg/kg	0.1	4.3	4	60 - 140	108
	Surrogates						
	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	105
	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	92
	d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	104

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

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB275320.002	Arsenic, As	mg/kg	1	350	318.22	80 - 120	110
	Cadmium, Cd	mg/kg	0.3	4.7	4.81	70 - 130	97
	Chromium, Cr	mg/kg	0.5	41	38.31	80 - 120	106
	Copper, Cu	mg/kg	0.5	320	290	80 - 120	111
	Nickel, Ni	mg/kg	0.5	190	187	80 - 120	103
	Lead, Pb	mg/kg	1	94	89.9	80 - 120	104
	Zinc, Zn	mg/kg	2	280	273	80 - 120	104

TRH (Total Recoverable Hydrocarbons) in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB275206.002	TRH C10-C14	mg/kg	20	52	40	60 - 140	129
	TRH C15-C28	mg/kg	45	55	40	60 - 140	138
	TRH C29-C36	mg/kg	45	<45	40	60 - 140	96
	TRH F Bands						
	TRH >C10-C16	mg/kg	25	53	40	60 - 140	132
	TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	130
	TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	86

VOC's in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB275205.002	Monocyclic	Benzene	mg/kg	0.1	4.9	5	60 - 140	99
		Aromatic	Toluene	mg/kg	0.1	4.8	5	60 - 140
		Ethylbenzene	mg/kg	0.1	4.8	5	60 - 140	97
		m/p-xylene	mg/kg	0.2	9.3	10	60 - 140	93
		o-xylene	mg/kg	0.1	5.0	5	60 - 140	99
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.6	10	70 - 130	96
		d8-toluene (Surrogate)	mg/kg	-	9.9	10	70 - 130	99
		Bromofluorobenzene (Surrogate)	mg/kg	-	10.1	10	70 - 130	101

Volatile Petroleum Hydrocarbons in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %	
LB275205.002	TRH C6-C10	mg/kg	25	87	92.5	60 - 140	95	
	TRH C6-C9	mg/kg	20	78	80	60 - 140	97	
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.6	10	70 - 130	96
		Bromofluorobenzene (Surrogate)	mg/kg	-	10.1	10	70 - 130	101
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	ma/ka	25	59	62.5	60 - 140	94

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

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

Mercury in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE245011.001	LB275321.004	Mercury	mg/kg	0.05	0.24	<0.05	0.2	105

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE245156.002	LB275206.023	Naphthalene	mg/kg	0.1	4.4	<0.1	4	109
		2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
		1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
		Acenaphthylene	mg/kg	0.1	4.5	<0.1	4	111
		Acenaphthene	mg/kg	0.1	4.3	<0.1	4	106
		Fluorene	mg/kg	0.1	<0.1	<0.1	-	-
		Phenanthrene	mg/kg	0.1	4.3	0.2	4	102
		Anthracene	mg/kg	0.1	4.2	<0.1	4	104
		Fluoranthene	mg/kg	0.1	4.8	0.5	4	107
		Pyrene	mg/kg	0.1	4.6	0.5	4	102
		Benzo(a)anthracene	mg/kg	0.1	0.2	0.3	-	-
		Chrysene	mg/kg	0.1	0.2	0.3	-	-
		Benzo(b&j)fluoranthene	mg/kg	0.1	0.3	0.4	-	-
		Benzo(k)fluoranthene	mg/kg	0.1	<0.1	0.2	-	-
		Benzo(a)pyrene	mg/kg	0.1	4.1	0.3	4	95
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	0.2	-	-
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	-	-
		Benzo(ghi)perylene	mg/kg	0.1	0.2	0.3	-	-
		Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	4.1	0.4	-	-
		Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	4.2	0.4	-	-
		Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	4.2	0.5	-	-
		Total PAH (18)	mg/kg	0.8	36	3.1	-	-
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.6	0.6	-	113
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	100
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	103

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

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE245011.001	LB275320.004	Arsenic, As	mg/kg	1	52	7	50	89
		Cadmium, Cd	mg/kg	0.3	43	<0.3	50	85
		Chromium, Cr	mg/kg	0.5	64	19	50	90
		Copper, Cu	mg/kg	0.5	55	9.5	50	90
		Nickel, Ni	mg/kg	0.5	51	8.5	50	86
		Lead, Pb	mg/kg	1	70	25	50	89
		Zinc, Zn	mg/kg	2	92	49	50	87

TRH (Total Recoverable Hydrocarbons) in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE245156.002	LB275206.023	TRH C10-C14	mg/kg	20	200	150	40	134
		TRH C15-C28	mg/kg	45	1200	1200	40	160 ⑤
		TRH C29-C36	mg/kg	45	1300	1100	40	317 ⑤
		TRH C37-C40	mg/kg	100	310	250	-	-
		TRH C10-C36 Total	mg/kg	110	2700	2400	-	-
		TRH >C10-C40 Total (F bands)	mg/kg	210	3000	2700	-	-
	TRH F Bands	TRH >C10-C16	mg/kg	25	250	210	40	100
		TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	250	210	-	-
		TRH >C16-C34 (F3)	mg/kg	90	1900	1800	40	291 ⑤
		TRH >C34-C40 (F4)	mg/kg	120	750	640	-	-

VOC's in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE245156.002	LB275205.025	Monocyclic	Benzene	mg/kg	0.1	5.5	<0.1	5	109
			Toluene	mg/kg	0.1	5.5	<0.1	5	111
		Aromatic	Ethylbenzene	mg/kg	0.1	5.6	<0.1	5	112
			m/p-xylene	mg/kg	0.2	11	<0.2	10	107
			o-xylene	mg/kg	0.1	5.8	<0.1	5	117

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

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

VOC's in Soil (continued)

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE245156.002	LB275205.025	Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.1	7.6	10
			d8-toluene (Surrogate)	mg/kg	-	8.7	8.1	10
			Bromofluorobenzene (Surrogate)	mg/kg	-	9.4	8.6	10
		Totals	Total BTEX*	mg/kg	0.6	33	<0.6	-
			Total Xylenes*	mg/kg	0.3	17	<0.3	-

Volatile Petroleum Hydrocarbons in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE245156.002	LB275205.025	TRH C6-C10	TRH C6-C10	mg/kg	25	160	41	92.5
			TRH C6-C9	mg/kg	20	140	39	80
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.1	7.6	10
			d8-toluene (Surrogate)	mg/kg	-	8.7	8.1	10
			Bromofluorobenzene (Surrogate)	mg/kg	-	9.4	8.6	-
		VPH F	Benzene (F0)	mg/kg	0.1	5.5	<0.1	-
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	130	41	62.5
		Bands						

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

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

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

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

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

No matrix spike duplicates were required for this job.

Samples analysed as received.

Solid samples expressed on a dry weight basis.

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

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

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STATEMENT OF QA/QC PERFORMANCE

SE245327 R0

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Project **NEW23P-0009 Medowie Gardens**
Order Number **NEW23P-0009**
Samples 1

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SGS Reference **SE245327 R0**
Date Received 30 Mar 2023
Date Reported 06 Apr 2023

COMMENTS

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

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

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

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

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

Duplicate

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

2 items

SAMPLE SUMMARY

Sample counts by matrix	1 Soil	Type of documentation received	COC
Date documentation received	30/3/2023	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	33.2C
Sample container provider	Other Lab	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

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

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

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

Mercury in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T.22.3.23	SE245327.001	LB275793	29 Mar 2023	30 Mar 2023	26 Apr 2023	03 Apr 2023	26 Apr 2023	05 Apr 2023

Moisture Content

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T.22.3.23	SE245327.001	LB275791	29 Mar 2023	30 Mar 2023	12 Apr 2023	03 Apr 2023	08 Apr 2023	05 Apr 2023

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T.22.3.23	SE245327.001	LB275748	29 Mar 2023	30 Mar 2023	12 Apr 2023	03 Apr 2023	13 May 2023	06 Apr 2023

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

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T.22.3.23	SE245327.001	LB275792	29 Mar 2023	30 Mar 2023	25 Sep 2023	03 Apr 2023	25 Sep 2023	05 Apr 2023

TRH (Total Recoverable Hydrocarbons) in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T.22.3.23	SE245327.001	LB275748	29 Mar 2023	30 Mar 2023	12 Apr 2023	03 Apr 2023	13 May 2023	05 Apr 2023

VOC's in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T.22.3.23	SE245327.001	LB275790	29 Mar 2023	30 Mar 2023	12 Apr 2023	03 Apr 2023	12 Apr 2023	05 Apr 2023

Volatile Petroleum Hydrocarbons in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T.22.3.23	SE245327.001	LB275790	29 Mar 2023	30 Mar 2023	12 Apr 2023	03 Apr 2023	12 Apr 2023	05 Apr 2023

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

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

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	T.22.3.23	SE245327.001	%	70 - 130%	94
d14-p-terphenyl (Surrogate)	T.22.3.23	SE245327.001	%	70 - 130%	103
d5-nitrobenzene (Surrogate)	T.22.3.23	SE245327.001	%	70 - 130%	104

VOC's in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	T.22.3.23	SE245327.001	%	60 - 130%	72
d4-1,2-dichloroethane (Surrogate)	T.22.3.23	SE245327.001	%	60 - 130%	80
d8-toluene (Surrogate)	T.22.3.23	SE245327.001	%	60 - 130%	79

Volatile Petroleum Hydrocarbons in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	T.22.3.23	SE245327.001	%	60 - 130%	72
d4-1,2-dichloroethane (Surrogate)	T.22.3.23	SE245327.001	%	60 - 130%	80
d8-toluene (Surrogate)	T.22.3.23	SE245327.001	%	60 - 130%	79

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

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

Mercury in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB275793.001	Mercury	mg/kg	0.05	<0.05

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB275748.001	Naphthalene	mg/kg	0.1	<0.1
	2-methylnaphthalene	mg/kg	0.1	<0.1
	1-methylnaphthalene	mg/kg	0.1	<0.1
	Acenaphthylene	mg/kg	0.1	<0.1
	Acenaphthene	mg/kg	0.1	<0.1
	Fluorene	mg/kg	0.1	<0.1
	Phenanthrene	mg/kg	0.1	<0.1
	Anthracene	mg/kg	0.1	<0.1
	Fluoranthene	mg/kg	0.1	<0.1
	Pyrene	mg/kg	0.1	<0.1
	Benzo(a)anthracene	mg/kg	0.1	<0.1
	Chrysene	mg/kg	0.1	<0.1
	Benzo(a)pyrene	mg/kg	0.1	<0.1
	Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
	Dibenzo(ah)anthracene	mg/kg	0.1	<0.1
	Benzo(ghi)perylene	mg/kg	0.1	<0.1
	Total PAH (18)	mg/kg	0.8	<0.8
Surrogates	d5-nitrobenzene (Surrogate)	%	-	108
	2-fluorobiphenyl (Surrogate)	%	-	94
	d14-p-terphenyl (Surrogate)	%	-	100

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

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

Sample Number	Parameter	Units	LOR	Result
LB275792.001	Arsenic, As	mg/kg	1	<1
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.5	<0.5
	Copper, Cu	mg/kg	0.5	<0.5
	Nickel, Ni	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1
	Zinc, Zn	mg/kg	2	<2.0

TRH (Total Recoverable Hydrocarbons) in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB275748.001	TRH C10-C14	mg/kg	20	<20
	TRH C15-C28	mg/kg	45	<45
	TRH C29-C36	mg/kg	45	<45
	TRH C37-C40	mg/kg	100	<100
	TRH C10-C36 Total	mg/kg	110	<110

VOC's in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB275790.001	Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.1	<0.1
		Toluene	mg/kg	0.1	<0.1
		Ethylbenzene	mg/kg	0.1	<0.1
		m/p-xylene	mg/kg	0.2	<0.2
		o-xylene	mg/kg	0.1	<0.1
	Polycyclic VOCs	Naphthalene (VOC)*	mg/kg	0.1	<0.1
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	90
		d8-toluene (Surrogate)	%	-	92
		Bromofluorobenzene (Surrogate)	%	-	81
	Totals	Total BTEX*	mg/kg	0.6	<0.3

Volatile Petroleum Hydrocarbons in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB275790.001	TRH C6-C9	mg/kg	20	<20
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-

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

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

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

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

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

Mercury in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE245328.001	LB275793.014	Mercury	mg/kg	0.05	0.17	0.21	56	22
SE245328.018	LB275793.021	Mercury	mg/kg	0.05	0.27	0.29	48	8

Moisture Content

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE245328.018	LB275791.021	% Moisture	%w/w	1	16	17	36	6
SE245438.003	LB275791.011	% Moisture	%w/w	1	14	14	37	3

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

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE245328.001	LB275792.014	Arsenic, As	mg/kg	1	4	4	54	2
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	15	14	33	8
		Copper, Cu	mg/kg	0.5	840	760	30	10
		Nickel, Ni	mg/kg	0.5	41	41	31	1
		Lead, Pb	mg/kg	1	100	98	31	6
		Zinc, Zn	mg/kg	2	200	200	31	3
SE245328.018	LB275792.021	Arsenic, As	mg/kg	1	11	14	38	28
		Cadmium, Cd	mg/kg	0.3	0.6	0.8	73	20
		Chromium, Cr	mg/kg	0.5	67	64	31	5
		Copper, Cu	mg/kg	0.5	180	190	30	8
		Nickel, Ni	mg/kg	0.5	26	39	32	40 @
		Lead, Pb	mg/kg	1	1900	1800	30	4
		Zinc, Zn	mg/kg	2	1400	2100	30	37 @

TRH (Total Recoverable Hydrocarbons) in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE245328.002	LB275748.014	TRH C10-C14	mg/kg	20	<20	<20	200	0
		TRH C15-C28	mg/kg	45	180	180	55	2
		TRH C29-C36	mg/kg	45	190	190	53	1
		TRH C37-C40	mg/kg	100	<100	<100	142	0
		TRH C10-C36 Total	mg/kg	110	370	370	59	0
		TRH >C10-C40 Total (F bands)	mg/kg	210	460	460	76	0
		TRH F Bands						
		TRH >C10-C16	mg/kg	25	<25	<25	200	0
		TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0
		TRH >C16-C34 (F3)	mg/kg	90	310	310	59	0
		TRH >C34-C40 (F4)	mg/kg	120	150	150	112	1
SE245328.018	LB275748.020	TRH C10-C14	mg/kg	20	<20	<20	200	0
		TRH C15-C28	mg/kg	45	110	120	69	2
		TRH C29-C36	mg/kg	45	81	81	86	1
		TRH C37-C40	mg/kg	100	<100	<100	200	0
		TRH C10-C36 Total	mg/kg	110	190	200	86	1
		TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	154	0
		TRH F Bands						
		TRH >C10-C16	mg/kg	25	<25	<25	200	0
		TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0
		TRH >C16-C34 (F3)	mg/kg	90	170	170	83	2
		TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0

VOC's in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE245328.002	LB275790.014	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
			Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	200
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.5	7.5	50	1
			d8-toluene (Surrogate)	mg/kg	-	7.5	7.5	50	1
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.0	6.9	50	2
		Totals	Total BTEX*	mg/kg	0.6	<0.6	<0.3	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$
The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: $MAD = 100 \times \text{SDL} / \text{Mean} + \text{LR}$
Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

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

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

VOC's in Soil (continued)

Method: ME-(AU)-ENVJAN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE245328.002	LB275790.014	Totals	Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0
SE245328.018	LB275790.020	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.9	7.8	50	1
			d8-toluene (Surrogate)	mg/kg	-	7.8	7.8	50	1
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.2	7.2	50	0
		Totals	Total BTEX*	mg/kg	0.6	<0.6	<0.3	200	0
			Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-ENVJAN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE245328.002	LB275790.014		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.5	7.5	30	1
			d8-toluene (Surrogate)	mg/kg	-	7.5	7.5	30	1
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.0	6.9	30	2
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0
SE245328.018	LB275790.020		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.9	7.8	30	1
			d8-toluene (Surrogate)	mg/kg	-	7.8	7.8	30	1
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.2	7.2	30	0
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0

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

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

Mercury in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB275793.002	Mercury	mg/kg	0.05	0.21	0.2	80 - 120	103

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB275748.002	Naphthalene	mg/kg	0.1	4.9	4	60 - 140	124
	Acenaphthylene	mg/kg	0.1	5.1	4	60 - 140	127
	Acenaphthene	mg/kg	0.1	4.9	4	60 - 140	122
	Phenanthrene	mg/kg	0.1	4.5	4	60 - 140	113
	Anthracene	mg/kg	0.1	5.1	4	60 - 140	127
	Fluoranthene	mg/kg	0.1	5.1	4	60 - 140	127
	Pyrene	mg/kg	0.1	5.0	4	60 - 140	125
	Benzo(a)pyrene	mg/kg	0.1	4.9	4	60 - 140	122
	Surrogates						
	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	99
	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	88
	d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	101

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

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB275792.002	Arsenic, As	mg/kg	1	350	318.22	80 - 120	111
	Cadmium, Cd	mg/kg	0.3	4.9	4.81	70 - 130	101
	Chromium, Cr	mg/kg	0.5	43	38.31	80 - 120	112
	Copper, Cu	mg/kg	0.5	320	290	80 - 120	111
	Nickel, Ni	mg/kg	0.5	200	187	80 - 120	107
	Lead, Pb	mg/kg	1	98	89.9	80 - 120	109
	Zinc, Zn	mg/kg	2	310	273	80 - 120	115

TRH (Total Recoverable Hydrocarbons) in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB275748.002	TRH C10-C14	mg/kg	20	51	40	60 - 140	126
	TRH C15-C28	mg/kg	45	46	40	60 - 140	115
	TRH C29-C36	mg/kg	45	<45	40	60 - 140	98
	TRH F Bands						
	TRH >C10-C16	mg/kg	25	51	40	60 - 140	127
	TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	112
	TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	95

VOC's in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB275790.002	Monocyclic	Benzene	mg/kg	0.1	4.3	5	60 - 140	86
	Aromatic	Toluene	mg/kg	0.1	4.2	5	60 - 140	84
		Ethylbenzene	mg/kg	0.1	4.2	5	60 - 140	85
		m/p-xylene	mg/kg	0.2	8.2	10	60 - 140	82
		o-xylene	mg/kg	0.1	4.4	5	60 - 140	87
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.8	10	70 - 130	88
		d8-toluene (Surrogate)	mg/kg	-	8.9	10	70 - 130	89
		Bromofluorobenzene (Surrogate)	mg/kg	-	9.1	10	70 - 130	91

Volatile Petroleum Hydrocarbons in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %	
LB275790.002	TRH C6-C10	mg/kg	25	86	92.5	60 - 140	93	
	TRH C6-C9	mg/kg	20	77	80	60 - 140	96	
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.8	10	70 - 130	88
		Bromofluorobenzene (Surrogate)	mg/kg	-	9.1	10	70 - 130	91
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	ma/ka	25	61	62.5	60 - 140	97

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

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

Mercury in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE245229.002	LB275793.004	Mercury	mg/kg	0.05	0.22	<0.05	0.2	86

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE245229.001	LB275748.004	Naphthalene	mg/kg	0.1	4.8	<0.1	4	120
		2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
		1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
		Acenaphthylene	mg/kg	0.1	5.1	<0.1	4	127
		Acenaphthene	mg/kg	0.1	4.9	<0.1	4	122
		Fluorene	mg/kg	0.1	<0.1	<0.1	-	-
		Phenanthrene	mg/kg	0.1	4.6	<0.1	4	115
		Anthracene	mg/kg	0.1	5.2	<0.1	4	129
		Fluoranthene	mg/kg	0.1	5.1	<0.1	4	128
		Pyrene	mg/kg	0.1	5.1	<0.1	4	126
		Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	-	-
		Chrysene	mg/kg	0.1	<0.1	<0.1	-	-
		Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	-	-
		Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	-	-
		Benzo(a)pyrene	mg/kg	0.1	4.9	<0.1	4	121
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	-	-
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	-	-
		Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	-	-
		Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	4.9	<0.2	-	-
		Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	4.9	<0.2	-	-
		Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	5.0	<0.3	-	-
		Total PAH (18)	mg/kg	0.8	40	<0.8	-	-
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	-	100
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	-	86
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	99

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

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE245229.002	LB275792.004	Arsenic, As	mg/kg	1	54	3	50	103
		Cadmium, Cd	mg/kg	0.3	48	<0.3	50	97
		Chromium, Cr	mg/kg	0.5	64	9.8	50	108
		Copper, Cu	mg/kg	0.5	55	10	50	89
		Nickel, Ni	mg/kg	0.5	53	1.3	50	104
		Lead, Pb	mg/kg	1	57	7	50	101
		Zinc, Zn	mg/kg	2	66	10	50	112

TRH (Total Recoverable Hydrocarbons) in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE245229.001	LB275748.004	TRH C10-C14	mg/kg	20	53	<20	40	127
		TRH C15-C28	mg/kg	45	58	<45	40	114
		TRH C29-C36	mg/kg	45	47	<45	40	86
		TRH C37-C40	mg/kg	100	<100	<100	-	-
		TRH C10-C36 Total	mg/kg	110	160	<110	-	-
		TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	-	-
	TRH F Bands	TRH >C10-C16	mg/kg	25	53	<25	40	127
		TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	53	<25	-	-
		TRH >C16-C34 (F3)	mg/kg	90	<90	<90	40	90
		TRH >C34-C40 (F4)	mg/kg	120	<120	<120	-	-

VOC's in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE245229.001	LB275790.004	Monocyclic	Benzene	mg/kg	0.1	4.8	<0.1	5	96
		Aromatic	Toluene	mg/kg	0.1	4.8	<0.1	5	96
			Ethylbenzene	mg/kg	0.1	4.9	<0.1	5	97
			m/p-xylene	mg/kg	0.2	9.5	<0.2	10	95
			o-xylene	mg/kg	0.1	5.1	<0.1	5	101

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

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

VOC's in Soil (continued)

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE245229.001	LB275790.004	Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.0	8.0	10
			d8-toluene (Surrogate)	mg/kg	-	8.1	8.2	10
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.4	7.7	10
		Totals	Total BTEX*	mg/kg	0.6	29	<0.6	-
			Total Xylenes*	mg/kg	0.3	15	<0.3	-

Volatile Petroleum Hydrocarbons in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE245229.001	LB275790.004	TRH C6-C10	TRH C6-C10	mg/kg	25	93	<25	92.5
			TRH C6-C9	mg/kg	20	85	<20	80
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.0	8.0	10
			d8-toluene (Surrogate)	mg/kg	-	8.1	8.2	10
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.4	7.7	-
		VPH F	Benzene (F0)	mg/kg	0.1	4.8	<0.1	-
		Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	64	<25	62.5
								101

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

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

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

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

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

No matrix spike duplicates were required for this job.

Samples analysed as received.

Solid samples expressed on a dry weight basis.

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

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

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