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Detailed Site Investigation

19 Hope Street and 69, 71, 73, 75 and 77 Hughes Avenue, Melrose Park NSW

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Executive Summary

EI Australia (EI) was engaged by Payce MP 2 Pty Ltd ('the client') to conduct a detailed investigation of 19 Hope Street and 69, 71, 73, 75 and 77 Hughes Avenue, Melrose Park NSW ('the site').

The site comprises of six cadastral allotments, identified as Lot A and B in DP 356298, Lot D, E, F and G in DP 369480, Lot D, E, F and G in DP 369480 and covers an area of approximately 8,900 m^2. During the investigation, site is currently occupied by four residential properties and two vacant lots.

The purpose of this DSI was to provide a support for a re-zoning of the site through a Development Application (DA) to City of Parramatta Council, to determine the contamination status of the site and to meet obligations under the *State Environmental Planning Policy* (Resilience and Hazards) (2021), for the assessment and management of contaminated soil and/or groundwater, should these be identified.

The site redevelopment will involve the demolition of existing structures, followed by the construction of a multi-storey residential complex, with mixed land (commercial/residential) use on the ground floor level, overlying two level basement car park. An aesthetic landscaping area of 2,673 m^2 with access to deep soil will also be established on the eastern portion of the site This DSI follows on from a previous Phase I Preliminary Site Investigation completed for the site by ADE Consulting Group in December 2020 (**Section 3**).

The key findings of this DSI were as follows:

- The general site geology encountered was a layer of silty clay fill (thickness ranged between 0.1m to 0.8m), overlying residual silty clay, clay and sand (up to 2.63 mBGL) over sandstone and shale bedrock.
- Contaminant concentrations in representative fill and natural soil samples were found to be below the adopted human health and ecological criteria applicable to Residential settings with accessible soils, with the following exception:
  - Asbestos at BH3 (depths between 0.2-0.3 mBGL, at least), exceeding the criteria and warranting remediation prior excavation works or during excavation works, which could be conducted following demolition as part of the waste classification of soils for off-site disposal.
- During the GME on 31 May 2023 depth to water readings ranged from 2.88 to 5.29 mBGL. Groundwater flow direction was anticipated to be flowing in a southern direction, towards the Parramatta River based on local topography and surrounding land features. Groundwater flow direction will be further characterized during data gap assessment. Local groundwater conditions were slightly acidic (pH: 5.4 to 6.4) and fresh to brackish (EC: 254-2,921 µS/cm) in regards to water salinity.
- The laboratory analytical results for the three representative groundwater samples were found to comply with the adopted GILs, except for dissolved metal aluminium at BH1M, at BH2M and BH3M, cooper at BH1M and BH2M, nickel at BH1M and at BH2M and zinc at BH1M, at BH2M and at BH3M. Aluminium, copper, nickel and zinc were detected in groundwater above the adopted GIL. This concentration was consistent with natural (background) conditions in urban environments and did not pose risks to human health, or the environment.
- Strong trace of >C16-C34 (F3) TRHs (BH1M: 980 µg/L) was identified during the GME. Given that site soils were impacted by petroleum hydrocarbons, further assessment

(monitoring) of local groundwater quality was warranted, as part of the recommended remediation phase.

- The top of the natural soils were encountered as shallow as 0.8m, generally comprise of clay soils.

Based on the findings obtained from this DSI, and with consideration of EI's *Statement of Limitations* (**Section 11**), EI consider the site can be made suitable for the proposed development, given the recommendations detailed in **Section 10** are implemented.

EI provides the following recommendations in relation to the proposed development:

- Before commencement of demolition works, a Hazardous Materials Survey (HMS) should be completed for the existing building fabrics by a suitably qualified consultant.
  - Following removal, an asbestos clearance inspection and certificate should be completed by a suitably qualified professional (SafeWork NSW Licensed Asbestos Assessor), if identified by the HMS.
- Additional intrusive investigation to close data gaps remaining at the subject site, including:
  - Targeted additional GPR scanning following the removal of the existing shipping containers to locate UST targeting the area between TP2, TP5 and TP6;
  - Increasing soil sampling coverage to achieve soil characterisation within the footprint of the current building located at the western portion of the site(when accessible); and
  - Given the historical storage of hydrocarbons onsite (former Skillco), further assessment (monitoring) of the local groundwater quality was warranted. Additional Groundwater investigation targeting exceedances, priority metals (Aluminium, copper, nickel and zinc) and TRH. All monitoring wells are to be surveyed to determine the groundwater flow directions.
- Delineation of the vertical and lateral extent of any detected soil impacts resulting from the presence of asbestos at locations (BH3);
- Preparation of an asbestos management plan (AMP) for the site, outlining the requirements for management of ACM building materials and asbestos-contaminated (fill) soil.

EI emphasise that these recommendations can be managed through the development application process.

1. Introduction

1.1 Background and Purpose

EI Australia (EI) was engaged by Payce MP 2 Pty Ltd ('the client') to undertake a detailed site investigation (DSI) of the property located at 19 Hope Street and 69, 71, 73, 75 and 77 Hughes Avenue, Melrose Park NSW ('the site').

The site is located within the local government area (LGA) of City of Parramatta Council, comprises of six cadastral allotments, identified as Lot A and B in DP 356298, Lot D, E, F and G in DP 369480.. (**Figure 1**, **Appendix A**). It covers an area of approximately 8,900 m^2. Site layout is illustrated in **Figure 2**, **Appendix A**. During the investigation, site is currently occupied by four residential properties and two vacant lots.

A Phase I Preliminary Site Investigation (PSI) was previously completed in December 2020 by another consultant (ADE, 2020). Based on the report's historical land and title searches, the land at 69, 71, 73, 75 and 77 Hughes Avenue has remained as residential since the 1930s. The land at 19 Hope Street was changed from residential to industrial in the 1960s, and has remained as industrial land use till the present date. A Stage 2 investigation (DSI) was recommended for intrusive assessment of soil and groundwater on the property.

The purpose of this DSI was to provide a support for a re-zoning of the site through a Development Application (DA) to City of Parramatta Council, to determine the contamination status of the site and to meet obligations under the *State Environmental Planning Policy* (Resilience and Hazards) (2021), for the assessment and management of contaminated soil and/or groundwater, should these be identified.

1.2 Proposed Development

Based on the OLSSON (2022) architectural plans supplied by the client and PSI (ADE, 2020) (**Appendix C**), site redevelopment comprises the demolition of existing structures and the construction of a multi-storey residential complex; with mixed land (commercial/residential) use on the ground floor level, overlying two level basement car park. An aesthetic landscaping area of 2,673 m^2 with access to deep soil will also be established on the eastern portion of the site.

1.3 Regulatory Framework

The following regulatory framework and guidelines were considered during this DSI:

- *Contaminated Land Management Act 1997* (the CLM Act 1997);
- *Protection of the Environment Operations Act 1997* (the POEO Act 1997);
- *Environmental Planning and Assessment Act 1979* (the EP&A Act 1979);
- *Guidelines on the Duty to Report Contamination under the Contaminated Land Management (Act 1997);*
- *State Environmental Planning Policy (Resilience and Hazards) (2021)*;
- *Parramatta Local Environmental Plan 2023;*
- NSW EPA (2017) *Guidelines for the NSW Site Auditor Scheme;*
- NSW EPA (2020) *Consultants Reporting on Contaminated Land: Contaminated Land Guidelines*;
- NSW EPA (2022) Sampling Design Part 1 – Application; and

- NEPC (2013) *Schedule B(1) Guideline on Investigation Levels for Soil and Groundwater* and *Schedule B(2) Guideline on Site Characterisation,* in the *National Environmental Protection (Assessment of Site Contamination) Amendment Measure 1999.*

1.4 Project Objectives

The objectives of this investigation were to:

- Assess the degree of soil and groundwater contamination (if present), by intrusive sampling and laboratory analysis for the relevant contaminants;
- Make recommendations for the appropriate management of any impacted soils and/or groundwater, should site contamination be confirmed; and
- Provide a conclusion regarding suitability of the site for the proposed land zoning.

1.5 Scope of Works

To achieve the above objectives, the following scope of works was completed:

Desktop Study

- A review of relevant topographical, geological and soil landscape maps for the project area; and
- A review of the previous environmental reports.

Fieldwork and Laboratory Analysis

- A review of existing underground services on-site, utilising *Before-You-Dig* plans and electro-magnetic equipment operated by a licensed services locator and Ground Penetrating Radar (GPR) survey at targeted underground storage tank locations;
- A site inspection;
- Sampling from fifteen locations (BH1 to BH5, HA1 to HA4 and TP1 to TP6), systematically positioned in accessible areas of the site. Samples TP5 and TP6 targeted underground storage tank.
- Conversion of three of the boreholes into groundwater monitoring bores (BH1M, BH2M and BH3M);
- Multiple level soil sampling within fill and natural soils in each borehole;
- Completion of one groundwater monitoring event (GME), including measurement of standing water levels (SWLs) and representative sampling at the newly installed wells and at a previous installed well found at the time of this investigation; and
- Laboratory analysis of selected soil and groundwater samples for relevant analytical parameters, as determined by the desktop study and field observations.

Data Analysis and Reporting

This DSI report documents all desk study findings, the conceptual site model, data quality objectives, investigation methodologies and results. It also provides a record of observations made during the site inspection, borehole and monitoring well construction logs and a discussion of laboratory analytical results in accordance with NSW EPA guidelines in regards to potential risks to human health, the environment and the aesthetic condition of the land. A Geotechnical Investigation for the site is currently being conducted by EI.

2. Site Description

2.1 Property Identification, Location and Physical Setting

The site identification details and associated information are presented in **Table 2-1**. The site locality and assessment area are illustrated in **Figures 1** and **2**, **Appendix A**. For further site details, refer to the PSI (ADE, 2020 – **Section 3**).

Table 2-1 Site Identification

Attribute	Description
Street Address	19 Hope Street and 69, 71, 73, 75 and 77 Hughes Avenue, Melrose Park NSW
Site Area	Approximately 8,900 m^2
Lot and Deposited Plan (DP)	▪ Lot A; DP356298 369480 (69 Hughes Avenue, Melrose Park); ▪ Lot B, DP356298 (73 Hughes Avenue, Melrose Park); ▪ Lot D in DP 369480 (73 Hughes Avenue, Melrose Park); ▪ Lot E in DP 369480 (75 Hughes Avenue, Melrose Park); ▪ Lot F in DP 369480 (75 Hughes Avenue, Melrose Park); and ▪ Lot G in DP 369480 (19 Hope Street, Melrose Park).
Site Coordinates	Northern-eastern corner of site (GDA2020-MGA56): ▪ Easting: 321178.079; ▪ Northing: 6256791.759. (Source: http://maps.six.nsw.gov.au)
State Survey Marks	Four state survey marks and two permanent marks are situated within close proximity to the site: ▪ SS 180653: on the Hughes Avenue (73m north-west); ▪ SS165816: on the Hope Street (259m south-east); ▪ SS180655: on the Hughes Avenue (237m north-west); ▪ SS88999: on the Hughes Avenue (243m west); ▪ PM33893 on the corner of Hughes Avenue and Hughes Avenue (238m west);and ▪ PM33894: on the corner of Hughes Avenue and Hughes Avenue (259m west); (Source: http://maps.six.nsw.gov.au)
LGA	City of Parramatta Council
Current Zoning	E4: General Industrial and R2: Low density Residential (Parramatta *Local Environmental Plan 2023*)

2.2 Local Land Use

The site is situated within an area of mixed use. The local sensitive receptors within close proximity (<250m) to the site are identified in **Table 2-2.**

Table 2-2 Local Sensitive Receptors

Direction	Land Use Description	Sensitive Receptor (and distance from site)
North	Residential Car park Industrial	Residences (immediately adjacent) Car park users (immediately adjacent)

Direction	Land Use Description	Sensitive Receptor (and distance from site)
South	Industrial properties Car park Ermington Bay Nature Trail Archer Park Ermington Bay Parramatta river	Users (approximately 70m south) Ermington Bay Nature Trail (approximately 300m southeast) Archer Park (approximately 367m southeast) Ermington Bay (approximately 410m south) Parramatta river (approximately 590m south)
East	Industrial properties Car park	Car park Users (approximately 150m south)
West	Residential properties	Residences (approximately 68m west)

2.3 Regional Setting

The topography, geology and soil landscape information are summarised in **Table 2-3**.

Table 2-3 Regional Setting

Attribute	Description
Topography	The site is located on the corner of Hughes Avenue and Hope Street within moderately (10° to 18°) south dipping topography with site levels varying from R.L. 14.78 at the west northern site corner to R.L. 10.26 at the east southern site corner.
Site Drainage	Likely to be consistent with the general slope of the site. Stormwater is expected to be collected in pits and drained to the municipal collection system, which ultimately drains to the Ermington Bay (approximately 410m south of the site) and ultimately to Parramatta River, (approximately 590m south of the site)
Regional Geology	The Department of Mineral Resources Geological Map Sydney 1:100,000 Geological Series Sheet 9130 indicates the site is underlain by Hawkesbury Sandstone (Rh) of Middle Triassic Age. Hawkesbury Sandstone is described as comprising medium to coarse grained quartz sandstone, with very minor shale and laminite lenses.
Soil Landscape	Based on PSI (ADE, 2020) the soil landscape at the Site is identified as belonging to the Lucas Heights Soil Landscape. The Lucas Heights soil landscape is defined as gently undulating crests and ridges on plateau surfaces of the Mittagong Formation (alternating bands of shale and fine grained sandstones). Local relief to 30 m, slopes <10%. Rock outcrop is absent. Low open-forest and woodland (dry sclerophyll). Soils—moderately deep (50–150 cm), hardsetting yellow podzolic soils and yellow soloths (Dy2.41). Limitations—localised water erosion hazard, localised shallow soils, stony soils with low soil fertility and low available water capacity.
Acid Sulfate Soil (ASS) Risk	With reference to the Prospect Parramatta River (9130N3) and Parramatta Local Environmental Plan 2023 the site is within a *Class 5* ASS area, indicating low potential for ASS to be present. Additionally the site lies within an area having '*No Known Occurrence*'. In such cases, ASSs are not known or expected to occur and "land management activities are not likely to be affected by ASS materials."
Nearest Surface Water Feature	Ermington Bay (approximately 410 m south of the site) and Parramatta River, (approximately 590 m south of the site).
Hydrogeological Environment	Based on PSI (ADE, 2020) the site is located underlying soil in the area generally consists of residual sediments. These late Permian / Triassic sediments comprise the underlying surficial sediment aquifer and are defined as porous, extensive aquifers of low to moderate productivity.
Groundwater Bore Records and	An online search for groundwater bores registered with Water NSW was conducted by EI on 22 June 2023 (Ref. https://realtimedata.waternsw.com.au/water.stm). The search revealed no registered bores were identified within a 500m radius of the site.

2.4 Site Inspection

A historical detailed site walkover was completed during the PSI (ADE, 2020. The latest site walkover completed by EI on 25 May 2023 noted the following findings:

- The parcel of land located at 19 Hope Street, Melrose Park (Lot G of DP369480) was found to be vacant and the former structures identified during the PSI were no longer present. The area was bounded by a metal fence and the former Skillco (Design and Construct) office and warehouse was demolished. Only the electrical transmission tower remains in the north-eastern corner of the Site. Some aggregate was found in the driveway (**Photograph 1, Appendix D**) and three (3) shipping containers are located onsite (**Photograph 2, Appendix D**).
- No above ground tanks were found to be present onsite.
- The lot at 69 Hughes Avenue (Lot A, DP356298) was found to be vacant and bounded by a metal fence (**Photograph 3, Appendix D**).
- Residential dwellings are located at 71, 73, 75 and 77 Hughes Avenue (refer to **Photographs 4** up to **7, Appendix D)**, which were inaccessible at the time of inspection. Observations recorded from street view revealed that the residential dwellings located at 73, 75 and 77 were older properties, suspected to be made from building materials predating the 1980's (e.g. asbestos fibre cement panels etc). The residential property located at 69 Hughes Street appeared to be constructed of modern building materials. The area of land for 69 Hughes Street is vacant consisting of grass and is bounded by a metal fence.

- Historically, as noted on the PSI, the parcel of land at 19 Hope Street contained the former Skillco (Design and Construct) office and warehouse in the south that appeared to be in poor to good condition. Fibre cement panels and fragments presumed to contain asbestos were observed within the south eastern entrance to the office foyer. Four (4) offices, two (2) bathrooms and a kitchenette with an adjoining warehouse were observed within the interior. The interior of the office area and warehouse were observed to be in good condition. No storage of hazardous chemicals spills or signs of contamination were observed within the interior. A power distribution box and switchboard were observed on the southern wall of the warehouse area. An outdoor garage area is located in the immediate north and north-eastern exterior of the Skillco warehouse, and was observed to contain a decommissioned bowser, liquid waste separator, air compressor and a shed containing oil, liquid softeners, paint etc. The ground of the garage area consisted of compacted clays overlying concrete and was observed to contain a drainage area in the south-western corner, minor surface staining was observed.
- The PSI also indicating from Safework information that one (1) 16,000 L underground unleaded petrol storage tank (UST), one (1) 5,000 L above ground diesel storage tank (AST) and one (1) fuel bowser was located on 19 – 25 Hope Street. During the works completed as part of the DSI, a GPR scanning was completed by a certified service locator, but was unable to detect any underground storage tank.

3. Previous Investigation

Previous investigations were completed for the site by ADE Consulting Group entitled:

- ADE (2020) *Phase I Preliminary Site Investigation, 19 Hope Street and 69, 71, 73, 75 and 77 Hughes Avenue, Melrose Park NSW*, Ref. MPR-02-18691| PSI.v1f, dated 15 December 2020.

A summary of the key findings of the report relevant to the DSI were provided in **Table 3-1**.

Table 3-1 Summary of the Previous Investigation

Project Task	Findings
***Preliminary Site Investigation* (ADE, 2020)**	
Objective	▪ Identify past and present potentially contaminating activities; ▪ Identify potential sources of contamination and types of contaminants; ▪ Discuss the Site conditions; ▪ Provide a preliminary assessment of Site contamination; and ▪ Assess whether any further investigations are required.
Scope of Works	The scope of the investigation included ▪ Completion of a Safety, Health & Environmental Work Method Statement (SH&EWMS) prior to undertaking works; ▪ Desktop Site review of: ‣ Land title records; ‣ Section 10.7 (formerly Section 149) planning certificate; ‣ NSW OEH public register of state heritage inventory items; ‣ NSW Environment Protection Authority (EPA) contaminated lands register for notifications; and ‣ Page | 9 Commercial in Confidence Phase I Preliminary Site Investigation 19 Hope Street & 69, 71, 73, 75, 77 Hughes Ave, Melrose Park NSW - Dial Before You Dig (DBYD) service search.

Project Task	Findings
	▪ Review of past and current activities on the Site; ▪ Review of past and current activities on neighbouring sites and identification of any potential onsite/off-site sources of contamination; ▪ Review of past aerial photographs of the Site and its surrounds to identify the locations of any previous buildings and / or other infrastructure associated with activities that could be on-site / offsite sources of contamination; ▪ Review of local geology and hydrogeology (including groundwater bore search); ▪ Review of the potential acid sulfate soil risk on the Site; ▪ Site inspection by experienced Environmental Consultants; and ▪ Preparation of a Stage I PSI report outlining: ‣ Detailed information on the results of the desktop review and site inspection; ‣ Conclusions regarding the potential for contamination at the Site; ‣ Conclusions regarding Site suitability for the proposed land use; and ‣ Recommendations for a Stage II DSI, should it be warranted.
Conclusions	▪ Due to the nature of residential construction from the 1940's to 2000's and the prevalent use of asbestos and lead materials during this time period, potential asbestos containing materials (ACM) and or lead and or containing products may have or can impact the surficial and / or upper soil profile; ▪ Potential Heavy Metals, Organochlorine Pesticides (OCPs) and Organophosphate pesticides (OCPs) contamination of the surficial and / or upper soil profile as a result of small-scale use of pesticides and herbicides; ▪ Potential for contamination via imported fill materials used in the construction throughout the past. Due to the uncontrolled nature of this material there is the potential for a range of contaminants being present including, but not limited to Heavy Metals, Poly Aromatic Hydrocarbons (PAHs), Total Recoverable Hydrocarbons (TRHs), Benzene, Toluene Ethyl-benzene and Xylene (BTEX), PCBs, OCPs, OPPs and asbestos; ▪ Potential for TPHs/TRHs, BTEX, Phenols, Heavy metals, asbestos, VOCs, PCBs and cyanides via accidental spillage and uncontrolled chemical waste management within the former outdoor garage footprint located at 19 Hope Street; and ▪ Potential for TPHs/TRHs, BTEX, Phenols, Heavy metals, VOCs, PAHs, PCBs, cyanides, OPPs, OCPs, via horizontal and vertical migration of the contaminants and/ or via rain to the ground and nearby surface waters.
Recommendations	▪ Based on the above findings, it was concluded that there was moderate potential for contamination to exist on the site as a result of the past and present land-uses. Further investigation was warranted, in order to determine the suitability of the site for proposed development. The following recommendation were provided: ▪ Undertake a Stage II DSI to assess soil and groundwater quality at the site in accordance with the NSW OEH 2011. ▪ Undertake a hazardous materials assessment before commencement of any demolition works with all hazardous materials identified on a register and a clearance certificate be obtained from a licenced removalist/ asbestos assessor.

4. Conceptual Site Model

In accordance with NEPC (2013) *Schedule B2 - Guideline on Site Characterisation*, EI developed a conceptual site model (CSM) assessing plausible pollutant linkages between potential contamination sources, migration pathways and receptors. The CSM provides a framework for identifying data gaps in the existing site characterisation and future site assessments. Potential contamination sources, exposure pathways and receptors that were considered relevant for this assessment are summarised along with a qualitative assessment of the potential risks posed by complete exposure pathways.

The CSM takes into account the re-zoning to the mixed use land use, as outlined in **Section 1.2** and the development plans attached under **Appendix C**. Under the proposed development with a lower ground floor level overlying two level basement car park, excavations across mostly of the site area are expected.

4.1 Subsurface Conditions

The general site geology encountered was a fill layer (thickness ranged between 0.1 m to 0.8 m), overlying residual silty clay, clay and sand (up to 2.63 mBGL) over sandstone and shale bedrock.

Groundwater seepage was found at 2.3 mBGL, during drilling of BH2M and standing water levels were measured between 1.92 Meters Below Top of Casing mBTOC (BH1M), 4.96 mBTOC (BH2M) and 2.9 mBGL (BH3M) Groundwater is expected to flow towards the south of the site towards Ermington Bay and ultimately Parramatta river.

4.2 Potential Contamination Sources

On the basis of site history and search findings detailed in **Section 3 and 4** the potential onsite contamination sources EI consider the potential onsite contamination sources as follows:

- Former on-site industrial activities (Automotive Garage/Workshop);
- Fill materials use on site;
- Uncontrolled demolition (previous and current dwellings and structures on-site);
- Hazardous building materials (including potential ACM and lead-based paints) likely to be present within the current site structures;
- Underground and Aboveground storage of fuel and Fuel Bowser (petrol UST, diesel AST and fuel dispenser observed). The previous report suggested these were proposed to be removed;
- Application of pesticides;
- Migration of potential contaminants from upgradient neighbouring properties (historical/ current surrounding Land Uses); and
- Electrical Switchboards and Associated Infrastructure.

4.3 Potential Contaminants

Potential contaminants at the site were considered to be:

<u>Soil:</u>

- Metals (arsenic (As), cadmium (Cd), chromium (Cr), copper (Cu), lead (Pb), mercury (Hg), nickel (Ni) and zinc (Zn));

- Total recoverable hydrocarbons (TRH);
- Volatile organic compounds (VOC); including the monocyclic aromatic hydrocarbon compounds *benzene, toluene, ethyl-benzene* and *xylenes* (BTEX);
- Chlorinated Volatile Organic Compounds (cVOC)
- Polycyclic aromatic hydrocarbons (PAH);
- Organochlorine and Organophosphorous pesticides (OCP/OPP);
- Oil and Grease;
- Total Petroleum Hydrocarbons (TPH);
- Ozone Depleting Substances (ODS);
- Cyanide;
- Phenols;
- Per- and Poly-Fluoroalkyl Substances (PFAS); and
- Asbestos.

Groundwater:

- Metals (aluminium (al), arsenic (As), cadmium (Cd), chromium (Cr), copper (Cu), lead (Pb), mercury (Hg), nickel (Ni) and zinc (Zn));
- TRH;
- Acidity (pH);
- VOC (including BTEX);
- PAHs;
- Cyanide;
- Phenols; and
- PFAS

4.4 Risk Assessment

An assessment of the potential contamination risks for the site is outlined in **Table 4-1**.

Table 4-1 Assessment of Potential Contamination Risk

Potential Source	Impacted Medium	COPC	Risk of Exposure
Former on-site industrial activities (Automotive Garage/Workshop)	Soil Groundwater	Priority Metals, PAHs, cVOCs, TRHs, TPHs, Oil and Grease, BTEX, Phenols, Cyanide, PFAS and Asbestos.	**Medium - High** Given the long-term historical industrial (since 1960) use of the site.
Accidental spillage and uncontrolled chemical waste management within the former outdoor garage footprint located at 19 Hope Street (ADE, 2020)	Soil Groundwater	Priority Metals, PAHs, VOCs, TPHs/TRHs, BTEX, Phenols, PCBs, Cyanide, PFAS and Asbestos.	**Medium - High** Given the long-term historical industrial (since 1960) use of the site.
Use of fill on site	Fill soil	Priority Metals, PAHs, TRHs, BTEX, PAH, OCPs / OPPs, PCBs,	**Low to Medium** Filling up to 0.8m thickness present

Potential Source	Impacted Medium	COPC	Risk of Exposure
		PFAS and Asbestos.	on-site. Soil stockpiles approximately 60 m^3 were identified (ADE, 2020).
Uncontrolled demolition (previous and current dwellings and structures on-site)	Fill soil	Priority Metals, TRHs, BTEX, OCPs / OPPs and Asbestos	**Low to medium** A visual inspection of drilled soils did not identify buried construction materials with an exception of bricks fragments at locations (TP1, BH1M, BH3M, BH4 and BH5).
Hazardous building materials (including potential ACM and lead-based paints) likely to be present within the current site structures	Building fabrics Near surface soil	Metal lead and asbestos	**Medium** Hazardous materials are expected on site structures. During demolition this may present a risk of exposure for the proposed development.
Underground and Aboveground storage of fuel and Fuel Bowser (petrol UST, diesel AST and fuel dispenser observed)	Soil and groundwater	PM, TRH, VOC (including BTEX), PAH and phenols	**Medium** Petrol USTs, Diesel AST and fuel dispenser were identified by (ADE, 2020) during the site visit and SafeWork records also indicated the presence of UST, AST and fuel dispenser (containing petrol and diesel).
Application of pesticides	Near surface soil (building footing areas)	PM (arsenic and copper), OCP, OPP	**Medium** Pesticides are expected to be limited to shallow, building footprint soils.
Migration of potential contaminants from neighbouring properties (historical/ current surrounding Land Uses)	Soil Groundwater Surface Water Sediment	Priority metals, TRH/TPH, BTEX, ODS, Phenols, asbestos, VOCs, PCBs, cyanides	**Medium** Local area has a long history of industrial use / activities.
Electrical Switchboards and Associated Infrastructure	Soil Groundwater	Priority metals (aluminium, copper and zinc), Asbestos, PCBs..	**Medium** Electrical infrastructure was identified on site.

4.5 Identified Receptors

The following potential receptors of site contamination were identified:

- Current and future site users;
- Demolition and construction workers;
- Future site users, including intrusive (maintenance) workers;
- Adjacent site users, hydraulically downgradient of the site; and
- Ecological receptors (Parramatta River ecosystems).

4.6 Revised CSM

Given the qualitative risk assessment summarised in **Section 4.4**, the risks to the receptors in **Section 4.5** were considered to be medium. Refer to **Table 4-2** for a revised CSM.

4.7 Data Gaps

Additional intrusive (soil and groundwater) sampling and analysis was required, to assess the contamination risks. The gaps, or decisions, requiring closure were:

- Are the contaminant concentrations present within the site at levels which indicate a potential unacceptable risk to the sensitive users of the site and surroundings?
- Were the previously reported USTs still present onsite?
- Are soil and/or groundwater at the site suitable for the proposed use?

These are addressed in this report.

Table 4-2 Revised Conceptual Site Model

Potential Source	Impacted Media	Contaminants of Potential Concern	Transport mechanism	Exposure pathway	Potential receptor
Former on-site industrial activities (Automotive Garage/Workshop)	Soil	Priority Metals, PAHs, VOCs, TRHs, BTEX, Phenols, Cyanide, PFAS and Asbestos.	Volatilisation of contamination from soil and diffusion to indoor air spaces.	Inhalation of vapours	Current and future site users Demolition / construction workers Future intrusive workers
Accidental spillage and uncontrolled chemical waste management within the former outdoor garage footprint located at 19 Hope	Soil Groundwater	Priority Metals, PAHs, VOCs, TPHs/TRHs, BTEX, Phenols, PCBs, Cyanide and Asbestos.	Migration in groundwater.	Ingestion Dermal contact Biota uptake	Current site users Adjacent land users Ecological receptors (via the stormwater channel)
Use of fill on site	Fill soil	Priority Metals, PAHs, TRHs, BTEX, PAH, OCPs / OPPs, PCBs, PFAS and Asbestos.	Disturbance of surface and subsurface soils during site redevelopment, future site maintenance and future use of the site post redevelopment.	Ingestion Dermal contact Inhalation of vapours	Demolition / construction workers
Uncontrolled demolition (previous and current dwellings and structures on-site)	Fill soil	Priority Metals, TRHs, BTEX, OCPs / OPPs and Asbestos	Disturbance of surface and subsurface soils during site redevelopment, future site maintenance and future use of the site post redevelopment.	Dermal Contact Ingestion Inhalation	Site Workers during demolition and construction Future site users Plants in accessible soil areas
Hazardous building materials (including potential ACM and lead-based paints) likely to be present within the current site structures	Soil	Metal lead and asbestos	Disturbance of surface and subsurface soils during site redevelopment, future site maintenance and future use of the site post redevelopment.	Ingestion Dermal contact Inhalation of fibres	Demolition / construction workers Surrounding lands users
Underground and Aboveground storage of fuel and Fuel Bowser (petrol UST, diesel AST and fuel dispenser observed)	Soil Groundwater	PM, TRH, VOC (including BTEX), PAH and phenols	Volatilisation of contamination from groundwater to indoor or outdoor air spaces (onsite and offsite)	Inhalation of vapours	Demolition / construction workers Adjacent site users Future site users Future intrusive workers

Potential Source	Impacted Media	Contaminants of Potential Concern	Transport mechanism	Exposure pathway	Potential receptor
Application of pesticides	Soil	PM (arsenic and copper), OCP, OPP	Disturbance of surface and subsurface soils during site development and future maintenance / use of the site post redevelopment. Atmospheric dispersion from soil to outdoor and indoor air spaces. Volatilisation from soil and diffusion to indoor and outdoor air spaces	Ingestion Dermal contact Inhalation of dust particulates Inhalation of vapours	Current site users Demolition / excavation / construction workers Future site users
Migration of potential contaminants from neighbouring properties (historical/ current surrounding Land Uses)	Soil Groundwater Surface Water Sediment	Priority metals, TRH, BTEX, Phenols, asbestos, VOCs, PCBs, cyanides	Disturbance of surface soils during site redevelopment, future site maintenance and future use of the site post redevelopment. Volatilisation from soil and diffusion to indoor and outdoor air spaces. Migration in groundwater.	Ingestion Dermal contact Inhalation of dust particulates Inhalation of vapours Biota uptake	Current site users Demolition / excavation / construction workers Adjacent land users Future site users Ecological receptors (via the stormwater channel)
Electrical Switchboards and Associated Infrastructure	Soil Groundwater	Priority metals (aluminium, copper and zinc), Asbestos, and PCBs,.	Dispersion of airborne particulates due to wind following demolition activities/dust generating activities.	Ingestion Dermal contact Inhalation of dust particulates	Current site users Demolition / excavation / construction workers Adjacent land users Future site users

5. Methodology

5.1 Sampling and Analysis Quality Plan

The sampling and analysis quality plan (SAQP) ensures that the data collected during environmental works are representative and provide a robust basis for assessment decisions. The SAQP for this DSI included the following:

- Data quality objectives (DQO), including a summary of the objectives of the DSI;
- Investigation methodology, including the media to be sampled, details of analytes and parameters to be monitored and a description of intended sampling points;
- Sampling procedures (including sample handling, preservation and storage);
- Field screening methods;
- Laboratory analysis methods; and
- Analytical quality assurance / quality control (QA/QC).

5.2 Data Quality Objectives

In accordance with the NEPC (2013) *Schedule B2 Guideline on Site Characterisation*, the USEPA (2006) *Data Quality Assessment* and EPA (2017) *Guidelines for the NSW Site Auditor Scheme*, DQO were developed following the seven step process (**Table 5-1**). In doing so, the appropriate levels of data quantity and quality needed for the specific requirements of the project were established.

Table 5-1 Summary of Project Data Quality Objectives

DQO Step	Details
1. State the Problem Summarise the contamination problem that will require new environmental data, and identify the resources available to resolve the problem; develop a conceptual site model.	Site redevelopment involves the demolition of existing structures, followed by the construction of a multi-storey residential complex, with mixed land use on the ground floor level, overlying two basement car park (**Section 1.2**). Based on the proposed land use, the site will be assessed against the NEPC (2013) setting of mixed use of residential and commercial. The investigation was required to assess the conditions of site soils and/or groundwater and enable the developer to meet their obligations under *SEPP 2021* and *CLM Act*, for the assessment and management of contaminated soil and/or groundwater. The findings of the DSI must provide supportive information on the environmental condition of the site, to determine suitability for the proposed re zoning.
2. Identify the Goal of the Study (Identify the decisions) Identify the decisions that need to be made on the contamination problem and the new environmental data required to make them.	Based on the objectives outlined in **Section 1.4**, the decisions that need to be made were: ▪ Has the nature, extent and source of any soil and/or groundwater impacts onsite been defined? ▪ What impact do the site specific, geologic and hydrogeological conditions have on the fate and transport of any impacts that may be identified? ▪ Does the level of impact coupled with the fate and transport of identified contaminants represent an unacceptable risk to identified human and/or environmental receptors on or offsite? ▪ Does the collected data provide sufficient information to allow the suitability of the site to be determined, or selection and design of an appropriate remedial strategy, if necessary? ▪ If the data does not provide sufficient information, what data gaps require closure to enable the suitability of the site to be determined, or selection and design of an appropriate remedial strategy?
3. Identify Information Inputs (Identify inputs to decision) Identify the information needed to support any decision and specify which inputs require new environmental measurements.	Inputs to the decision making process included: ▪ The proposed development and land use; ▪ Review of previous investigations; ▪ National and NSW EPA guidelines made or approved under the *NSW Contaminated Land Management Act 1997*; ▪ Observations during / from soil and groundwater sampling; and ▪ Laboratory analytical results for the selected soil and groundwater samples. At completion of the DSI, a decision is required regarding the suitability of the site for the proposed redevelopment, or if additional investigation is required to confirm that the site is suitable for the development or if remediation is required to make the site suitable.
4. Define the Boundaries of the Study Specify the spatial and temporal aspects of the environmental media that the data must represent to support decision.	Lateral – The proposed development area, as shown on **Figure 2**, **Appendix A**; Vertical – Investigations were advanced to the depth of natural soils or rock, majority depths ranged between 0.4 to 1.4 mBGL with three boreholes cored in sandstone with a maximum intrusive investigation advanced depth of maximum depth of 25.22 mBGL (refer to Borelogs in **Appendix E** ; Temporal – The results were valid for the day samples were collected and remain so as long as no changes occur in regards to site use, and contamination (if present) does not migrate onto the site from off-site sources.

DQO Step	Details
5. Develop the Analytic Approach (Develop a decision rule) To define the parameter of interest, specify the action level, and integrate previous DQO outputs into a single statement that describes a logical basis for choosing from alternative actions.	The decision rules for the investigation were: ▪ If the concentrations of contaminants in the soil and/or groundwater data exceed the adopted criteria, then assess the need to further investigate the extent of impacts onsite. ▪ Decision criteria for QA/QC measures are defined by the Data Quality Indicators (DQI) in **Table 5-2**.
6. Specify Performance or Acceptance Criteria (Specify limits on decision errors) Specify the decision-maker's acceptable limits on decision errors, which are used to establish performance goals for limiting uncertainties in the data.	Specific limits for this project were in accordance with National and NSW EPA guidance, and appropriate indicators of data quality and standard procedures for field sampling and handling. This included the following points to quantify tolerable limits: ▪ The null hypothesis for the investigation was that the 95% Upper Confidence Limits (UCL) of the average concentration of contaminants of concern exceed relevant commercial/industrial soil land use criteria across the site. ▪ Acceptance of site suitability was based on the probability that: ‣ The 95% UCL of the average concentration of the data set satisfied the given site criteria (thus, a limit on the decision error was 5% that a conclusive statement may be incorrect); ‣ The standard deviation of the data set was less than 50% of the relevant criteria; and ‣ No single result exceeded the criteria by 250% or more. ▪ Soil and groundwater concentrations for the potential chemicals that were below investigation criteria made or approved by the NSW EPA were treated as acceptable and indicative of suitability for the proposed land use(s). ▪ If contaminant concentrations exceeded the adopted criteria, further investigation was considered prudent. If no contamination was detected, no further action was required.

DQO Step	Details
7. Develop the Detailed Plan for Obtaining Data (Optimise the design for obtaining data) Identify the most resource-effective sampling and analysis design for general data that are expected to satisfy the DQOs.	In order to identify the most resource-effective sampling and analysis design and satisfy the DQOs: ▪ Soil sampling was conducted at fifteen locations (drilled boreholes) using a stratified sampling pattern across accessible parts of the site, in with low density systematic sampling in the broader site and a medium density at historical commercial/industrial usages of the site. A portion of the site was not assessable due to tenants occupyingexisting residential buildings, and will be assesses following demolition to ensure compliance with the minimum number points recommended under the NSW EPA (2022) S*ampling Design Part 1 – Application*. ▪ An upper soil profile sample was collected at each borehole location and tested for the potential contaminants (**Section 4.3**), to assess the conditions of the fill layer, and impacts from activities at ground level. ▪ Further discrete, natural samples were analysed for metals (arsenic (As), cadmium (Cd), chromium (Cr), copper (Cu), lead (Pb), mercury (Hg), nickel (Ni) and zinc (Zn)), total recoverable hydrocarbons (TRH), volatile organic compounds (VOC); including the monocyclic aromatic hydrocarbon compounds benzene, toluene, ethyl-benzene and xylenes (BTEX), polycyclic aromatic hydrocarbons (PAH), organochlorine and organophosphorous pesticides (OCP/OPP), Cyanide, Phenols, Per- and Poly-Fluoroalkyl Substances (PFAS), pH, pH peroxide, sPOCAS and asbestos. ▪ Three groundwater monitoring wells were installed. The three newly installed monitoring well were gauged and sampled to assess groundwater quality at the site. ▪ A groundwater monitoring event (GME) was completed, with laboratory analysis of representative samples for the potential contaminants. ▪ Review of the results was undertaken to determine if further sampling was warranted.

5.3 Data Quality Indicators

To ensure that the investigation data were of an acceptable quality, they were assessed against the quality indicators outlined in **Table 5-2**. Assessment of data quality is presented in **Section 6** and **Appendix I**.

Table 5-2 Data Quality Indicators

QA/QC Component	Data Quality Indicator(s)
Precision A quantitative measure of the variability (or reproducibility) of data	Data precision was assessed by reviewing the performance of blind field duplicate sample sets, through calculation of relative percentage differences (RPD). Data precision was deemed acceptable if RPDs were found to be less than 30%. RPDs that exceeded this range were considered acceptable where: ▪ Results were less than 10 times the limits of reporting (LOR); ▪ Results were less than 20 times the LOR and the RPD was less than 50%; or ▪ Heterogeneous materials or volatile compounds were encountered.
Accuracy A quantitative measure of the closeness of reported data to the "true" value	Data accuracy was assessed through the analysis of: ▪ Split field duplicate sample sets; ▪ Field and method blanks, analysed for the analytes targeted in the primary samples; ▪ Matrix spike sample sets; and ▪ Laboratory control samples.
Representativeness The confidence (expressed qualitatively) that data are representative of each medium present onsite	To ensure the data produced by the laboratory were representative of conditions encountered in the field, the following measures were taken: ▪ Blank samples run in parallel with field samples, to confirm there were no unacceptable instances of laboratory artefacts; ▪ Review of RPD values for field and laboratory duplicates to provide an indication that the samples were generally homogeneous, with no unacceptable instances of significant sample matrix heterogeneities; and ▪ The appropriateness of collection methodologies, handling, storage, and preservation techniques was assessed to ensure/confirm there was minimal opportunity for sample interference or degradation (i.e. volatile loss during transport due to incorrect preservation / transport methods).
Completeness A measure of the amount of useable data from a data collection activity	Analytical data sets acquired during the DSI were evaluated as complete upon confirmation that: ▪ Industry standard procedures for sampling protocols were adhered to; and ▪ Copies of all chain of custody (COC) documentation were included and found to be properly completed. It could therefore be considered whether the proportion of "useable data" generated in the data collection activities was sufficient for the purposes of the land use assessment.
Comparability The confidence (expressed qualitatively) that data may be considered to be equivalent for each sampling and analytical event	Data sets from separate sampling episodes were required and issues of comparability were reduced through adherence to SOPs and regulator-endorsed or published guidelines and standards on each data gathering activity. In addition, the data were collected by experienced samplers and NATA-accredited laboratory methodologies will be employed.

5.4 Sampling Rationale

With reference to the CSM described in **Section 4**, soil and groundwater investigation were planned in accordance with the following rationale:

- Sampling of fill and natural soils from fifteen locations (BH1 to BH5, HA1 to HA4 and TP1 to TP6), placed on stratified sampling pattern, with low density systematic sampling in the broader site inclusive of the existing residential properties and a medium density (TP3, TP5, TP6 and BH1M) targeting underground storage tank and historical commercial/industrial usages of the site. Systematically grid based sampling divided to encompass accessible site areas at the remaining sampling locations.

- Installation of three groundwater monitoring wells (BH1M, BH2M and BH3M); positioned hydraulically up and down gradient at the site.
- Completion of a single GME, at the three newly installed monitoring wells to characterise local groundwater conditions.
- Laboratory analysis of representative soil and groundwater samples for the potential contaminants, identified in **Section 4.3**.

5.5 Assessment Criteria

The assessment criteria adopted for this DSI are outlined in **Table 5-3**. These were selected from available published guidelines that are endorsed by national or state regulatory authorities, with due consideration of the exposure scenarios that are expected for various parts of the site, the likely exposure pathways, and the identified potential receptors.

For the purposes of this DSI, the adopted soil assessment criteria are referred to as the *Soil Investigation Levels* (SILs) and the adopted groundwater assessment criteria are referred to as *Groundwater Investigation Levels* (GILs).

Table 5-3 Adopted Investigation Levels for Soil and Groundwater

Medium	Guidelines	Rationale
Soil	NEPC (2013) HILs, HSLs and Management Limits for TRH	**Soil Health-based Investigation Levels (HILs)** NEPC (2013) *HIL-A* Residential settings with accessible soils. NEPC (2013) *HIL-D* thresholds for commercial/industrial settings. **Soil Health-based Screening Levels (HSLs)** NEPC (2013) *HSL-A&B* thresholds for vapour intrusion at low to high density residential sites were applied to assess soil conditions outside of proposed basement footprints. NEPC (2013) *HSL-D* thresholds for vapour intrusion at commercial sites were applied to assess potential human health impacts from residual vapours resulting from petroleum, BTEX and naphthalene. **Asbestos Health Based Screening Levels:** For asbestos in soil, the following criteria are applicable: ▪ No visible asbestos on soil surface in all areas of the site; ▪ Bonded ACM ▪ HSL-A: 0.01% for bonded ACM ▪ Friable Asbestos: 0.001% w/w in all areas of the site. **Ecological Investigation Levels (EILs) / Ecological Screening Levels (ESLs)** NEPC (2013) EILs/ESLs for commercial and industrial land use scenarios were adopted, to assess the potential impact to proposed landscaping area, where plants could be exposed to soils and where precipitation may result in subsurface infiltration and resulting leaching of soil impacts to groundwater. The derived EILs were determined by the addition of site specific Added Contaminant Limit (ACL) and the Ambient Background Concentration (ABC) for a high traffic NSW suburb. The adopted ESL criteria were based on grained criteria. **Management Limits for Petroleum Hydrocarbons** Where the HSLs and ESLs for petroleum hydrocarbons were exceeded, sample results were also assessed against the NEPC

Medium	Guidelines	Rationale
		(2013) *Management Limits* for the F1-F4 TRH fractions, to assess propensity for phase-separated hydrocarbons (PSH), fire and explosive hazards and adverse effects on buried infrastructure. .
Groundwater	ANZG (2018) GILs and NEPC (2013) Groundwater HSLs	**Groundwater Investigation Levels (GILs)** Default guideline values for freshwater and marine ecosystems at the 95% level of protection, except for the bio-accumulative metals cadmium and mercury, for which the 99% protection level was applied. **Health-based Screening Levels (HSLs)** The NEPC (2013) groundwater *HSL-A & B* thresholds for vapour intrusion in low - high density residential settings were applied to assess potential human health impacts from residual vapours resulting from petroleum, BTEX and naphthalene impacts.
	NHMRC (2022) Recreational Criteria	**Recreational Criteria** Where no criteria are available, the lowest value from the NHMRC (2022) Drinking Water Human health criteria (multiplied by a factor of 10) were used to present a recreational exposure scenario.
	HEPA (2020) PFAS	**Groundwater Investigation Levels for PFAS** The PFAS National Environmental Management Plan (NEMP) provides guideline values for PFAS compounds in aquatic ecosystems.

5.6 Soil Sampling

The soil sampling works conducted at the site are described in **Table 5-4**. Sampling locations are illustrated in **Figure 2**, **Appendix A**.

Table 5-4 Summary of Soil Sampling Methodology

Activity/Item	Details
Fieldwork	Intrusive soil investigations were conducted on 25, 26 and 31 May 2023, and comprised fifteen locations. Ground Penetrating Radar (GPR) survey was performed prior intrusive soil sampling.
Investigation Method	Test bores (BH1 to BH5) were drilled using a drill rig, fitted with solid flight augers while (HA1 to HA4) advanced by a hand auger and (TP1 to TP6) were excavated using an excavator provided by the client. A denser sampling grid at locations (TP3, TP5, TP6 and BH1M) targeting UST and systematically grid based sampling divided to encompass accessible site areas at the remaining sampling locations.. Borehole details are presented in the detailed logs attached in **Appendix E**.
Soil Logging	Drilled soils were classified in the field with respect to lithological characteristics and evaluated on a qualitative basis for odour and visual signs of contamination. Soil classifications and descriptions were based on Australian Standard (AS) 1726-2017.
Soil Sampling	Soil samples were collected using a dry grab method (the sampler wearing unused, dedicated nitrile gloves) and placed into laboratory-supplied, acid-washed, solvent-rinsed glass jars, snap-lock, plastic bags or jars with a Teflon free lid. Blind and split field duplicates were separated from the primary samples and placed into dedicated glass jars. At each location, aliquots of soil were placed into separate zip-lock bags for laboratory asbestos analysis.
Decontamination	Nitrile sampling gloves were replaced between each sampling location. Sampling equipment (i.e. metal trowel) was scrubbed and washed with a mixture of PFAS-free detergent solution (Alconox®) and potable water (1/20) until free of all residual materials, then rinsed with laboratory-supplied, purified water.

Activity/Item	Details
Management of Soil Cuttings	Soil cuttings were used to backfill the completed boreholes.
Sample Preservation and Transport	Samples were stored in an insulated chilled chest (with frozen ice packs), whilst on-site and in transit to the contracted laboratories. Soil samples were transported to SGS Australia Pty Ltd (SGS; the primary laboratory) and split (inter-laboratory) soil field duplicates were submitted to Envirolab Services Pty Ltd (Envirolab; the secondary laboratory) under strict chain-of-custody (COC) conditions. Signed COC certificates and sample receipt advice (SRA) were provided by SGS and Envirolab for confirmation purposes (**Appendix G**).
Laboratory Analysis and Quality Control	Soil samples were analysed by SGS and Envirolab for the potential contaminants. All samples were analysed within the required holding period, as documented in the corresponding laboratory reports (**Appendices H** and **I**). In addition to the split (inter-laboratory) field duplicate (analysed by Envirolab), QC testing comprised one blind (intra-laboratory) field duplicate, an equipment rinsate blank, a laboratory-prepared trip spike soil sample and a laboratory-prepared trip blank soil sample, all analysed by SGS.

5.7 Groundwater Sampling

The groundwater sampling works are described in **Table 5-5**. The monitoring well location is illustrated in **Figure 2**, **Appendix A.**

Table 5-5 Summary of Groundwater Sampling Methodology

Activity/Item	Details
Fieldwork	Three groundwater monitoring wells were installed on 25 and 26 May 2023. A single GME was completed on 31 May 2023 at the three newly installed wells (BH1M, BH2M and BH3M).
Well Construction	Well construction was in general accordance with the standards described in NUDLC (2020) and involved the following: ▪ Ø50 mm, Class 18 uPVC, threaded, machine-slotted screen and casing; ▪ Base and top of each well was sealed with a uPVC cap; ▪ Annular, graded sand filter was used to approximately 300 mm above top of screen interval; ▪ Granular bentonite was applied above annular filter to seal the screened interval; ▪ Cuttings backfilled to just below ground level; and ▪ Well completion comprised of a stickup of 1 m above ground level and a plastic J-cap closing the well
Well Development	Well development was conducted at the new wells, following installation. This involved agitation within the full length of the water column using a, Poly (PFAS-free) disposable bailer, followed by removal of water and accumulated sediment.
Well Survey	Wellhead elevations for the new monitoring wells BH1M, BH2M and BH3M were surveyed by EI after well installation.
Well Gauging	Monitoring wells were gauged to determine standing water levels (SWLs) prior to groundwater sampling. Gauging was conducted with a water/oil interface probe.
Well Purging and Field Testing	The measurement of water quality parameters was conducted repeatedly during purging and the details were recorded onto field data sheets, until water quality parameters stabilised. Field measurements for Dissolved Oxygen (DO), Electrical Conductivity (EC), temperature, oxidation-reduction potential (ORP) and pH of the purged water were also recorded during well purging. Field test results are summarised in **Table 7-3.** Refer to **Appendix F** for all field data sheets.

Activity/Item	Details
Groundwater Sampling	Groundwater samples were collected using a peristaltic low flow pump. Water was continuously measured for five parameters (Temperature, EC, ORP, DO, pH). Once three consecutive field measurements were recorded for purged water to within ± 10% for DO, ± 3% for EC , ± 0.2 units for pH, ± 0.2° for temperature and ± 20 mV for ORP, this was considered to indicate that representative groundwater quality had been achieved and final physio-chemical measurements were recorded. Groundwater samples were then collected from the low flow sampling pump discharge point.
Decontamination Procedure	The water level probe was washed in a solution of PFAS-free detergent solution (Alconox®), and potable water (1/20) until free of all residual materials, then rinsed with laboratory-supplied, purified water.
Sample Preservation	Sample containers were supplied by the laboratory with the following preservatives: ▪ one, 1 litre amber glass, acid-washed and solvent-rinsed bottle; ▪ two, 40ml glass vials, pre-preserved with dilute hydrochloric acid, Teflon-sealed; ▪ one, 250mL, HDPE bottle, pre-preserved with dilute nitric acid (1mL); and ▪ one, PFAS bottle container. Samples for metals analysis were field-filtered using 0.45 µm pore-size membranes. All containers were filled with sample to the brim then capped and stored in insulated chests (containing ice bricks), until completion of the fieldwork and during sample transit to the laboratory.
Sample Transport	After sampling, the ice brick filled chests were transported to the laboratories using strict COC procedures. SRA was provided by the laboratory to document sample condition upon receipt. Copies of the SRA and COC certificates are presented in **Appendix G**.
Laboratory Analysis and Quality Control	Groundwater samples were analysed by SGS and Envirolab for the selected contaminants. In addition to the split (inter-laboratory) field duplicate (analysed by Envirolab), QC testing comprised a blind (intra-laboratory) field duplicate, an equipment rinsate blank, a laboratory-prepared, trip spike water sample and a laboratory-prepared, trip blank water sample, all tested by SGS.

6. Data Quality Assessment

The assessment of data quality is defined as the scientific and statistical evaluation of environmental results to determine if they meet the objectives of the project (USEPA, 2006). For this DSI, data quality assessment involved an evaluation of the compliance of the field (sampling) and laboratory procedures with established protocols, as well as the accuracy and precision of the associated results from the quality control measures. The findings are summarised in **Table 6-1** and discussed in detail in **Appendix I**.

In summary, the overall quality of the analytical data from this DSI was considered to be of an acceptable standard for interpretive use and preparation of an updated CSM.

Table 6-1 Quality Control Process

Stage	Control	Conformance [Yes, Part, No]	Report Section(s)
Preliminaries	DQO established	Yes	See **Sections 5.2** and **5.3**
Field Work	Suitable documentation of fieldwork observations including borehole logs, field notes.	Yes	See **Appendices E** and **F**
Sampling Plan	Use of relevant and appropriate sampling plan (density, type, and location)	Part	See **Section 5.4**
	All media sampled and duplicates collected	Yes	See **Appendix G**
	Use of approved and appropriate sampling methods (soil, groundwater)	Yes	See **Sections 5.6** and **5.7**
	Preservation and storage of samples upon collection and during transport to the laboratory	Yes	See **Sections 5.6** and **5.7**
	Appropriate field rinsate and trip blanks taken	Yes	See **Appendix G**
	Completed field and analytical laboratory sample COC procedures and documentation	Yes	See **Appendix G**
Laboratory	Sample holding times within acceptable limits	Yes	See **Appendices H, I, J**
	Use of appropriate analytical procedures and NATA-accredited laboratories	Yes	See **Appendices H, I, J**
	LOR/PQL low enough to meet adopted criteria	Yes	See **Appendices H, I, J**
	Laboratory blanks	Yes	See **Appendices H, I, J**
	Laboratory duplicates	Yes	See **Appendices H, I, J**
	Matrix spikes	Yes	See **Appendices H, I, J**
	Surrogates (or System Monitoring Compounds)	Yes	See **Appendices H, I, J**
	Analytical results for replicated samples,	Yes	See **Appendices H, I,**

Stage	Control	Conformance [Yes, Part, No]	Report Section(s)
	including field and laboratory duplicates and inter-laboratory duplicates, expressed as RPD		**J**
	Checking for the occurrence of apparently unusual or anomalous results (e.g. laboratory results that appear to be inconsistent with field observations or measurements)	Yes	See **Appendices B, E, F**
Reporting	Report reviewed by senior staff to confirm project meets NSW EPA guidelines and objectives	Yes	See **Document Control**

7. Results

7.1 Soil Field Results

7.1.1 Sub-Surface Conditions

The lithology encountered, during the drilling of the test boreholes was generalised as a layer of silty clay fill (thickness ranged between 0.1m to 0.8m), overlying residual silty clay, clay and sand (up to 2.63 mBGL) over sandstone and shale bedrock.

More details encountered during the soil investigation are provided in **Table 7-1** and borehole logs are presented in **Appendix E**.

Table 7-1 Generalised Sub-Surface Profile

Layer	Description	Minimum and Maximum Depth (mBGL)
Fill	Silty CLAY; low to medium plasticity, dark brown, brown, grey mottled orange and red, with rootlets, brick fragments and trace of sub-angular to angular gravels, no odour. Moderate sulfur odour was detected at TP3 and BH1M.	0.0 – 0.8
Residual	CLAY, medium to high plasticity, brown mottled pale grey/ orange mottled red, moist, no odour. Silty CLAY; low to medium plasticity, brown mottled pale grey/ orange red with mottled pale grey with fine to medium ironstone, moist. Sand; fine to medium grained, grey.	0.8 – 2.62
Bedrock	Sandstone; fine to medium grained, pale grey to brown/ orange with iron staining, siltstone laminations, Shale; dark grey.	2.62 – 25.22

Note:
+ Termination depth of deepest borehole.

7.1.2 Ground Penetrating Radar (GPR) and findings

A Ground Penetrating Radar (GPR) was conducted on 25 May 2023. Site was surveyed targeting the underground storage tank locate at 19 Hope Street. No underground tank was located within the surveyed area.

7.1.3 Field Observations

Soil samples were collected from the test bores at various depths ranging between 0.2-1.3 mBGL. All examined soil samples were evaluated on a qualitative basis for odour and visual signs of contamination (e.g. hydrocarbon odours, oil staining, petrochemical filming, asbestos fragments, ash, charcoal) and the following observations were noted:

- No suspicious odours were detected in any of the borehole locations with an exception of moderate sulfur odour at TP3;
- No soil staining was observed in any of the examined soils;
- No fragments of potential ACM were observed in any of the drilled/examined soils;
- No ash was observed in any of the examined soils;
- Bricks were observed during drilling at locationsTP1, BH1M, BH3M, BH4 and BH5;

7.2 Groundwater Field Results

7.2.1 Monitoring Well Construction

Three groundwater monitoring wells (BH1M, BH2M and BH3M) were installed on 25 and 26 May 2023. Construction details for the installed groundwater monitoring are summarised in **Table 7-2**.

Table 7-2 Monitoring Well Construction Details

Well ID	Well Depth (mBGL)	Groundwater Level After Well Development (mAHD)	Well Stick-up (mBGL)	Screen Interval (mBGL)	Lithology Screened
BH1M	16	9.60	1	9.05 - 15.05	Sandstone
BH2M	16	12.31	1	9 - 15	Sandstone shale laminations and shale
BH3M	16	11.64	1	9 - 15	Sandstone shale

7.2.2 Field Observations

A GME was conducted on 31 May 2023. Field data were recorded before sampling, as presented in **Table 7-3**. Field data sheets are attached in **Appendix F**. Samples were evaluated on the basis of odour and visual signs of contamination, with the following observations noted:

- Groundwater was found to be pale (clear) in colour, with low turbidity;
- No suspicious odours were detected in any of the groundwater wells;
- No sheen was observed on the sampled groundwater; and
- Groundwater conditions were slightly acidic (pH: 5.4 to 6.4) and fresh to brackish (EC: 254-2,921 µS/cm) in regards to water salinity.

Table 7-3 Groundwater Field Data

Well	SWL (mBTOC [1])	DO (mg/L)	pH*	EC (µS/cm)	Temperature (°C)	ORP [2] (mV)
BH1M	2.88	0.15	~~12.69~~ (6.4)	1,673	19.82	-79.3
BH2M	4.40	0.67	~~12.49~~ (5.9)	2,921	20.33	-69.6
BH3M	5.29	0.26	~~11.36~~ (5.4)	254	19.58	-9.1

Notes:
[1] mBTOC – meters below top of casing.
[2] ORP readings were adjusted to Standard Hydrogen Electrode by adding field electrode potential (205mV).
* ~~12.69~~ Field measurement faulty due to equipment , pH data provide by the laboratory refer to **Table 2 – Appendix B**..

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7.3 Laboratory Analytical Results

7.3.1 Soil Analytical Results

Summary of the soil analytical results is presented in **Table 7-4**. Detailed tabulation is presented in **Table 1**, **Appendix B**.

The concentrations of the potential contaminants in soil samples were below the adopted GILs, with the following exception of Asbestos in BH3M_0.2-0.3.

Detections of metals, PAHs (Benzo(a)pyrene, Carcinogenic PAHs as B(a)P and Total PAHs, TRH – F3 and PFAS were reported at low levels. No exceedance of the criteria observed.

Table 7-4 Summary of Soil Analytical Results

Number of Primary Samples	Analyte	Minimum Concentration (mg/kg)	Maximum Concentration (mg/kg)	Samples Exceeding SILs
Priority Metals				
21	Arsenic	3	11	None
21	Cadmium	<0.3	<0.3	None
21	Chromium (Total)	8	38	None
21	Copper	1.7	35	None
21	Lead	10	130	None
21	Mercury	<0.05	0.6	None
21	Nickel	1.3	41	None
21	Zinc	7.6	140	None
PAH				
21	Naphthalene	<0.1	<0.1	None
21	Benzo(a)pyrene	<0.1	0.4	None
21	Carcinogenic PAH (as B(a)P TEQ)	<0.3	0.6	None
21	Total PAH	<0.8	2.6	None
BTEX				
21	Benzene	<0.1	<0.1	None
21	Toluene	<0.1	<0.1	None
21	Ethyl benzene	<0.1	<0.1	None
21	Xylenes (Total)	<0.3	<0.3	None
TRH				
21	TRH - F1	<25	<25	None
21	TRH - F2	<25	<25	None
21	TRH - F3	<90	150	None
21	TRH - F4	<120	<120	None
PFAS				
7	PFOA	<0.0008	<0.0008	None
7	PFOS	<0.0016	0.0024	None

Number of Primary Samples	Analyte	Minimum Concentration (mg/kg)	Maximum Concentration (mg/kg)	Samples Exceeding SILs
7	PFOS + PFHxS	<0.0016	0.0024	None
VOCs				
17	Chloroform (THM)	<0.1	<0.1	None
17	Bromodichloromethane (THM)	<0.1	<0.1	None
17	Dibromochloromethane (THM)	<0.1	<0.1	None
17	Isopropylbenzene (Cumene)	<0.1	<0.1	None
17	1,2,4-trimethylbenzene	<0.1	<0.1	None
17	Trichloroethene (TCE)	<0.1	<0.1	None
17	cis-1,2-dichloroethene	<0.1	<0.1	None
17	trans-1,2-dichloroethene	<0.1	<0.1	None
17	Total VOC	<24	<24	None
Pesticides				
21	OCP	<1	<1	None
21	OPP	<1	<1	None
PCB				
21	Total PCB	<1	<1	None
Phenols				
21	Phenols	<0.5	<0.5	None
Cyanide				
21	Cyanide	<0.5	<0.5	None
Asbestos				
21	Asbestos	Detected	Detected	BH3M_0.2-0.3 0.032 %/%

7.3.2 Groundwater Analytical Results

Summary of the soil analytical results is presented in **Table 7-5**. Detailed tabulation of the groundwater analytical results, showing the concentrations for individual samples alongside the adopted GILs, is presented in **Table 2**, **Appendix B**.

The concentrations of the potential contaminants in groundwater samples were below the adopted GILs, with the following exception of:

- Dissolved metal aluminium (75 µg/L) at BH1M, (170 µg/L) at BH2M and (69 µg/L) at BH3M, cooper (5 µg/L) at BH1M and (2 µg/L) at BH2M, nickel (31 µg/L) at BH1M and (64 µg/L) at BH2M and zinc (99 µg/L) at BH1M, (420 µg/L) at BH2M and (14 µg/L) at BH3M – exceedance of the ecological criteria for fresh waters;

- Total recoverable hydrocarbons (TRH – F3) (980 µg/L) at BH1M, exceedance of the ecological criteria for fresh waters;

No other exceedances of GILs were reported.

Detections of VOCs in well BH1M, BH2M and BH3M were observed.

Table 7-5 Summary of Groundwater Analytical Results

Number of Primary Samples	Analyte	Minimum Concentration (mg/kg)	Maximum Concentration (mg/kg)	Samples Exceeding SILs
Priority Metals				
3	Aluminium	69	170	ANZG (2018): 55 µg/L BH1M (75 µg/L) BH2M (170 µg/L) BH3M (6 9µg/L)
3	Arsenic	<1	1	None
3	Cadmium	<0.1	0.2	None
3	Chromium (Total)	<1	1	None
3	Copper	<1	5	ANZG (2018): 1.4 µg/L BH1M (5 µg/L) BH2M (2 µg/L)
3	Lead	<1	<1	None
3	Mercury	<0.01	<0.01	None
3	Nickel	7	64	ANZG (2018): 11 µg/L BH1M (31 µg/L) BH2M (64 µg/L)
3	Zinc	14	420	ANZG (2018): 8 µg/L BH1M (99 µg/L) BH2M (420 µg/L) BH3M (14 µg/L)
PAH				
3	Naphthalene	<0.1	<0.1	None
3	Benzo(a)pyrene	<0.1	<0.1	None
3	Total PAH	<1	<1	None
BTEX				
3	Benzene	<0.5	<0.5	None
3	Toluene	<0.5	<0.5	None
3	Ethyl benzene	<0.5	<0.5	None
3	o/p-Xylene	<1	<1	None
3	m-Xylene	<0.5	<0.5	None
TRH				
3	TRH - F1	<50	<50	None
3	TRH - F2	<60	<60	None
3	TRH - F3	<500	980	ANZG (2018): 500 µg/L BH1M (980 µg/L)

Number of Primary Samples	Analyte	Minimum Concentration (mg/kg)	Maximum Concentration (mg/kg)	Samples Exceeding SILs
3	TRH - F4	<500	<500	None
PFAS				
3	PFOA	<0.002	<0.002	None
3	PFOS	<0.002	<0.002	None
VOCs				
3	Chloroform (THM)	0.6	58	None
3	Bromodichloromethane (THM)	<0.5	8.4	None
3	Dibromochloromethane (THM)	<0.5	1.6	None
3	Isopropylbenzene (Cumene)	<0.5	<0.5	None
3	1,2,4-trimethylbenzene	<0.5	<0.5	None
3	Trichloroethene (TCE)	<0.5	<0.5	None
3	cis-1,2-dichloroethene	<0.5	<0.5	None
3	trans-1,2-dichloroethene	<0.5	<0.5	None
3	Total VOC	<10	68	None
Other Parameters				
3	Total Phenols	<0.05	<0.05	None
3	Total Cyanide	<0.004	<0.004	None
3	pH	5.4	6.4	None
3	Hardness mg CaCO3/L	13	340	None
3	Turbidity	5.3	39	None

8. Site Characterisation

8.1 Soil Impacts

The general site geology encountered was a layer of silty clay fill (thickness ranged between 0.1m to 0.8m), overlying residual silty clay, clay and sand (up to 2.63 mBGL) over sandstone and shale bedrock.

Based on **Table 1**, **Appendix B**, fill and natural soil samples analysed during this investigation were found to be below the human health and ecologic soil criteria for all samples, except the following:

- Asbestos at BH3 (depths between 0.2-0.3 mBGL, at least), exceeding the criteria and warranting remediation prior excavation works or during excavation works, which could be conducted following demolition as part of the waste classification of soils for off-site disposal.

8.2 Groundwater Impacts

During the GME on 31 May 2023 depth to water readings ranged from 2.88 to 5.29 mBGL. Groundwater flow direction was anticipated to be flowing in a southern direction, towards the Parramatta River based on the local topography and surrounding land features. Groundwater flow direction will be characterised during data gap assessment. Local groundwater conditions were slightly acidic (pH: 5.4 to 6.4) and fresh to brackish (EC: 254-2921 µS/cm) in regards to water salinity.

The laboratory analytical results for the three representative groundwater samples were found to comply with the adopted GILs, except for dissolved metal aluminium at BH1M, at BH2M and BH3M, copper at BH1M and BH2M, nickel at BH1M and at BH2M and zinc at BH1M, at BH2M and at BH3M.

Aluminium, copper, nickel and zinc were detected in groundwater above the adopted GIL. However, these metal exceedances are considered to be representative of background groundwater conditions (particularly given the local industrial settings of the site and surrounding areas), and is considered to present a low risk to the environment.

Elevated concentrations of TRH – F3 (BH1M: 980 µg/L) identified during the GME. BH1M was located essentially downgradient from the former USTs and associated infrastructure.

9. Conclusion

The property located at 19 Hope Street and 69, 71, 73, 75 and 77 Hughes Avenue, Melrose Park NSW was the subject of a DSI, conducted in order to assess the nature and degree of on-site contamination. The key findings of this DSI were as follows:

- During the investigation, site is currently occupied by four residential properties and two vacant lots.
- The general site geology encountered was a layer of silty clay fill (thickness ranged between 0.1m to 0.8m), overlying residual silty clay, clay and sand (up to 2.63 mBGL) over sandstone and shale bedrock.
- Contaminant concentrations in representative fill and natural soil samples were found to be below the adopted human health and ecological criteria applicable to Residential settings with accessible soils, with the following exception:
    - Asbestos at BH3 (depths between 0.2-0.3 mBGL, at least), exceeding the criteria and warranting remediation prior excavation works or during excavation works, which could be conducted following demolition as part of the waste classification of soils for off-site disposal.
- During the GME on 31 May 2023 depth to water readings ranged from 2.88 to 5.29 mBGL. Groundwater flow direction was anticipated to be flowing in a southern direction, towards the Parramatta River based local topography and surrounding land features.. Groundwater flow direction will be further characterized during data gap assessment. Local groundwater conditions were slightly acidic (pH: 5.4 to 6.4) and fresh to brackish (EC: 254-2,921μS/cm) in regards to water salinity.
- The laboratory analytical results for the three representative groundwater samples were found to comply with the adopted GILs, except for dissolved metal aluminium at BH1M, at BH2M and BH3M, cooper at BH1M and BH2M, nickel at BH1M and at BH2M and zinc at BH1M, at BH2M and at BH3M. Aluminium, copper, nickel and zinc were detected in groundwater above the adopted GIL. These metal exceedances are considered to be representative of background groundwater conditions (particularly given the local industrial settings of the site and surrounding areas), and is considered to present a low risk to the environment.
- Elevated concentrations of TRH (F3) at BH1M (980μg/L) identified during the GME. BH1M is located on the southern portion of the site and in proximity to the site boundary as such further assessment (monitoring) of local groundwater quality was warranted to further access the extent of the recorded impacts and assess the potential for offsite migration.
- The site can be made suitable for the potential future site development, provided the recommendations detailed in **Section 10** are implemented

Based on the findings obtained from this DSI, and with consideration of EI's *Statement of Limitations* (**Section 11**), EI consider the site can be made suitable for the proposed re zoning, given the recommendations detailed in **Section 10** are implemented.

10. Recommendations

EI provides the following recommendations in relation to the proposed development:

- Before commencement of demolition works, a Hazardous Materials Survey (HMS) should be completed for the existing building fabrics by a suitably qualified consultant.
  - Following removal, an asbestos clearance inspection and certificate should be completed by a suitably qualified professional (SafeWork NSW Licensed Asbestos Assessor), if identified by the HMS.
- Additional intrusive investigation to close data gaps remaining at the subject site, including:
  - Targeted additional GPR scanning following the removal of the existing shipping containers to locate UST targeting the area between TP2, TP5 and TP6;
  - Increasing soil sampling coverage to achieve soil characterisation within the footprint of the current building located at the western portion of the site(when accessible); and
  - Given the historical storage of hydrocarbons onsite (former Skillco), further assessment (monitoring) of the local groundwater quality was warranted.. Additional Groundwater investigation targeting exceedances, priority metals (Aluminium, copper, nickel and zinc) and TRH. All monitoring wells are to be surveyed to determine the groundwater flow directions.
- Delineation of the vertical and lateral extent of any detected soil impacts resulting from the presence of asbestos at locations (BH3);
- Preparation of an asbestos management plan (AMP) for the site, outlining the requirements for management of ACM building materials and asbestos-contaminated (fill) soil.

EI emphasise that these recommendations can be managed through the development application process.

11. Statement of Limitations

This report has been prepared for the exclusive use of Constant 26 Pty Ltd, whom is the only intended beneficiary of EI's work. The scope of the investigation carried out for the purpose of this report was limited to that agreed with Constant 26 Pty Ltd.

No other party should rely on this document without the prior written consent of EI, and EI undertakes no duty, or accepts any responsibility or liability, to any third party who purports to rely upon this document without EI's approval.

The findings presented in this report are the result of discrete and specific sampling methodologies used in accordance with best industry practices and standards. Due to the site-specific nature of soil sampling from point locations, it is considered likely that all variations in subsurface conditions across a site cannot be fully defined, no matter how comprehensive the field program.

While normal assessments of data reliability have been made, EI assumes no responsibility or liability for errors in any data obtained from previous assessments conducted on site, regulatory agencies (e.g. Council, NSW EPA), statements from sources outside of EI, or developments resulting from situations outside the scope of works of this project.

Despite all reasonable care and diligence, the ground conditions encountered and concentrations of contaminants measured may not be representative of conditions between the locations sampled and investigated. In addition, site characteristics may change at any time in response to variations in natural conditions, chemical reactions and other events (e.g. groundwater movement and or spillages of contaminating substances). These changes may occur subsequent to EI's investigation.

EI's assessment is necessarily based upon the results of the site investigation and the restricted program of surface and subsurface sampling, screening and chemical testing which was set out in the project proposal. Neither EI, nor any other reputable consultant, can provide unqualified warranties nor does EI assume any liability for site conditions not observed or accessible during the time of the investigations.

This report was prepared for Constant 26 Pty Ltd and no responsibility is accepted for use of any part of this report in any other context or for any other purpose or by other third parties. This report does not purport to provide legal advice.

This report and associated documents remain the property of EI subject to payment of all fees due for this assessment. The report shall not be reproduced except in full and with prior written permission by EI.

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Abbreviations

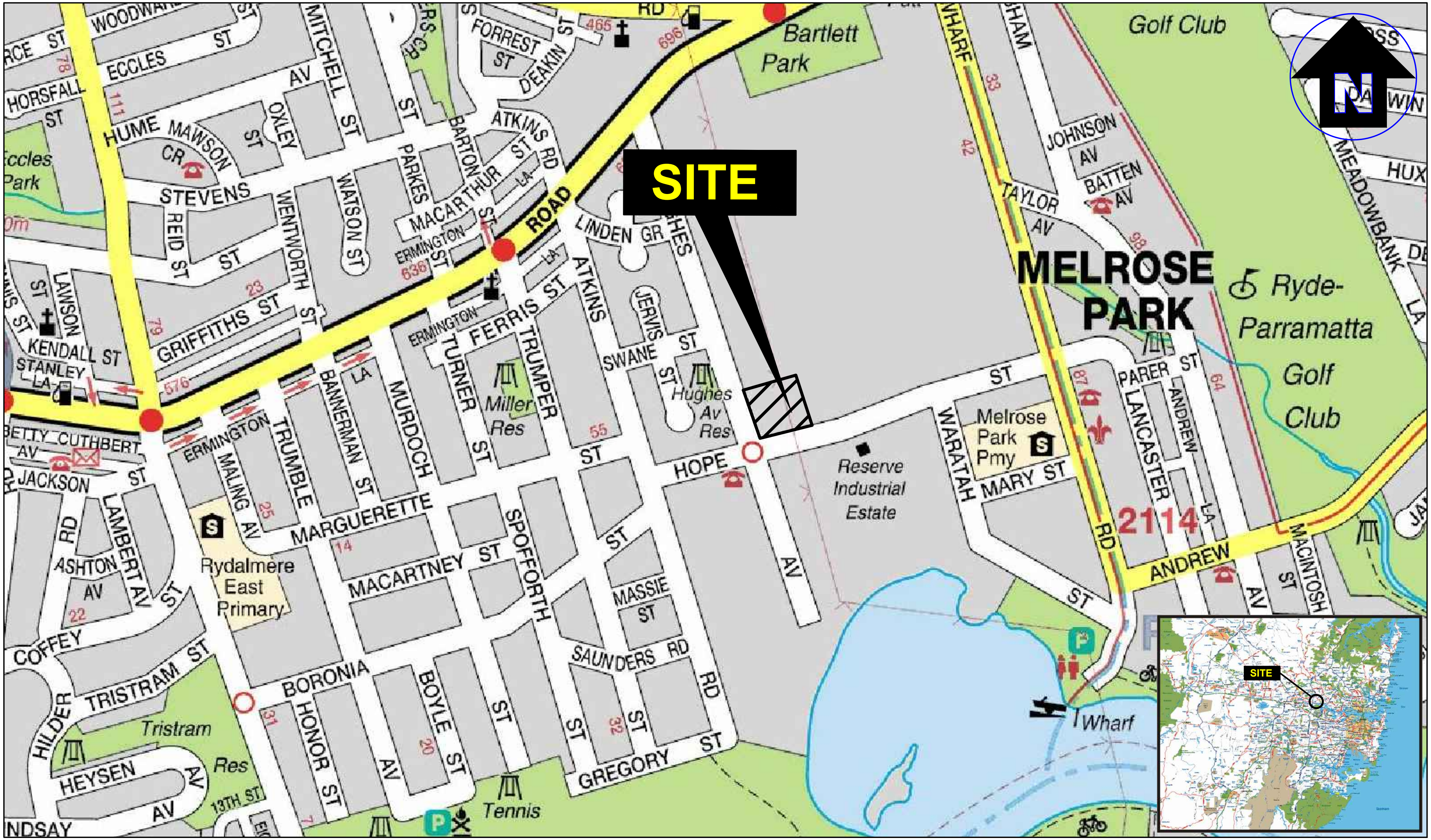
ACM	Asbestos-Containing Materials
AST	Aboveground storage tank
B(a)P	Benzo(a)Pyrene (a PAH compound)
BH	Borehole
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes
COC	Chain of Custody
CSM	Conceptual Site Model
CVOC	Chlorinated Volatile Organic Compounds (a sub-set of the VOC suite)
DO	Dissolved Oxygen
DP	Deposited Plan
DQO	Data Quality Objectives
DSI	Detailed Site Investigation
EC	electrical Conductivity
F1	C_6-C_{10} TRH (less the sum of BTEX concentrations)
F2	>C_{10}-C_{16} TRH (less the concentration of naphthalene)
F3	TRH >C16-C34
F4	TRH >C34-C40
GIL	Groundwater Investigation Level
GME	Groundwater Monitoring Event
HIL	Health-based Investigation Level
HSL	Health-based Screening Level
LGA	Local Government Area
LOR	Limit of Reporting (limit of reporting for respective laboratory method)
mAHD	Metres Australian Height Datum
mBGL	Metres Below Ground Level
mBTOC	Metres Below Top of Casing
mg/L	Milligrams per Litre
mV	Millivolts
µg/L	Micrograms per Litre
NATA	National Association of Testing Authorities, Australia
NEPC	National Environment Protection Council
NEPM	National Environment Protection Measure
NSW	New South Wales
NSW EPA	Environment Protection Authority (of New South Wales)
OCP	Organochlorine Pesticides
ODS	Ozone Depleting Substances
OPP	Organophosphate Pesticides
ORP	Oxidation-Reduction PotentialPAH Polycyclic Aromatic
Hydrocarbons	
PCB	Polychlorinated Biphenyls
PFAS	Per- and Poly-Fluoroalkyl Substances
PM	Priority Metal
POEO	Protection of the Environment Operations
pH	Potential Hydrogen (a measure of the acidity or basicity of an aqueous solution)
PQL	Practical Quantitation Limit (limit of detection for respective laboratory method)
PSH	Phase-Separated Hydrocarbons
QA/QC	Quality Assurance / Quality Control
RL	Reduced Level
RPD	Relative Percentage Differences
SAQP	Sampling and Analysis Quality Plan
SIL	Soil Investigation Level
SOP	Standard Operating Procedure

SRA	Sample Receipt Advice (document confirming laboratory receipt of samples)
SWL	Standing Water Level
TEQ	Toxicity Equivalent Quotient
TPH	Total Petroleum Hydrocarbons
TRH	Total Recoverable Hydrocarbons (non-specific analysis of organic compounds)
UCL	Upper Confidence Limit (of the mean)
USEPA	United States Environmental Protection Agency
UST	Underground storage tank
VOC	Volatile Organic Compounds (specific organic compounds which are volatile)

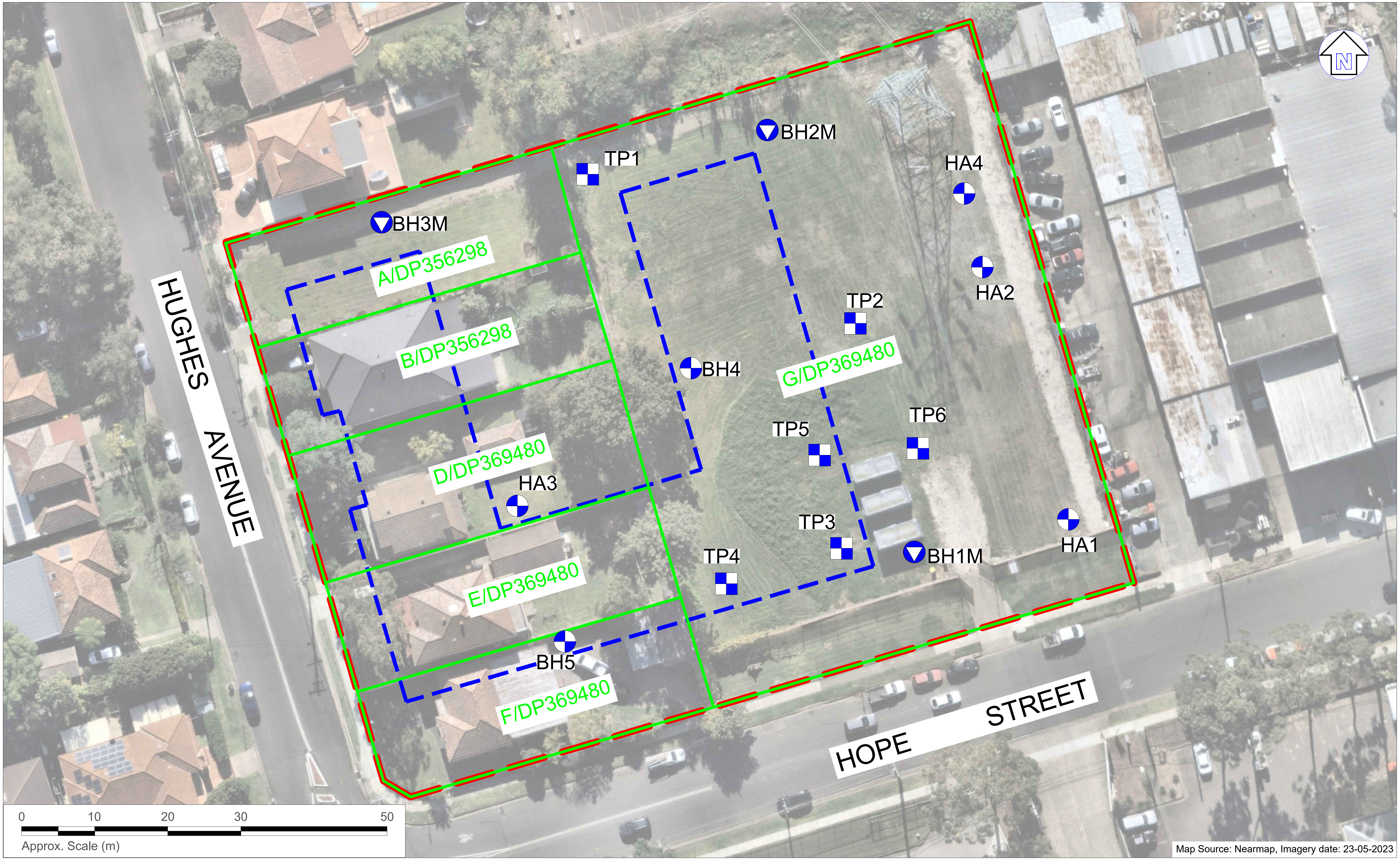
Appendix A – Figures

Figure 1 - Site Locality Plan

Figure 2 - Sampling Location Plan



eiaustralia Practical Solutions for Built Environments Suite 6.01, 55 Miller Street, PYRMONT 2009 Ph (02) 9516 0722 Fax (02) 9518 5088	Drawn:	C.L.	**Constant 26 Pty Ltd** Detailed Site Investigation Corner of Hughes Avenue and Hope Street, Melrose Park NSW Site Locality Plan	Figure: 1
	Approved:	S.R.		
	Date:	22-05-23		
	Scale:	Not To Scale		Project: E26047.E02.Rev1



LEGEND (All locations are approximate)

- Site boundary
- Proposed building footprint
- Lot boundary
- Test pit location
- Groundwater monitoring well location
- Borehole location

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Drawn:	C.L.
Approved:	S.R.
Date:	29-05-23

Constant 26 Pty Ltd
Detailed Site Investigation
Corner of Hughes Avenue and Hope Street, Melrose Park NSW

Sampling Location Plan

Figure: 2

Project: E26047.E02.Rev1

Appendix B – Tables

Table 1 - Summary of Soil Analytical results

E26047.E02 - Melrose Park

Sample ID	Date of sampling	Material description	Heavy Metals: As	Cd	Cr(Total)	Cu	Pb	Hg	Ni	Zn	PAHs: Benzo(a)pyrene	Carcinogenic PAHs as B(a)P	Naphthalene	Total PAHs	BTEX: Benzene	Toluene	Ethylbenzene	o-Xylene	m/p-Xylene	Total Xylenes
EI Investigation (2023)																				
Fill																				
BH1M_0.2-0.3	26/05/2023	Silty CLAY	8	<0.3	16	10	30	<0.05	4.2	47	<0.1	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
BH2M_0.2-0.3	26/05/2023	Silty CLAY	6	<0.3	15	11	21	<0.05	11	28	<0.1	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
BH3M_0.2-0.3	26/05/2023	Silty CLAY	6	<0.3	16	6.9	31	<0.05	4.5	49	<0.1	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
BH4_0.2-0.3	26/05/2023	Silty CLAY	7	<0.3	17	16	130	0.62	4.4	140	<0.1	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
BH5_0.2-0.3	26/05/2023	Silty CLAY	6	<0.3	24	4	30	<0.05	2.4	13	<0.1	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
TP1_0.2-0.3	26/05/2023	Silty CLAY	6	<0.3	12	35	61	<0.05	3.3	79	<0.1	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
TP2_0.2-0.3	26/05/2023	Silty CLAY	8	<0.3	28	18	56	<0.05	14	72	<0.1	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
TP3_0.2-0.3	26/05/2023	Silty CLAY	11	<0.3	22	5.2	25	<0.05	1.7	35	<0.1	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
TP6_0.2-0.3	26/05/2023	Silty CLAY	5	<0.3	33	23	29	<0.05	31	130	<0.1	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
HA1_0.2-0.3	26/05/2023	Silty CLAY	3	<0.3	10	2.1	10	<0.05	1.6	7.6	<0.1	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
HA2_0.2-0.3	31/05/2023	Silty CLAY	5	<0.3	38	24	24	<0.05	41	71	<0.1	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
HA3_0.2-0.3	31/05/2023	Silty CLAY	6	<0.3	14	24	15	<0.05	11	62	<0.1	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
HA4_0.2-0.3	31/05/2023	Silty CLAY	5	<0.3	11	18	76	<0.05	3.4	120	<0.1	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
Natural																				
BH1M_1.2-1.3	26/05/2023	Silty CLAY	6	<0.3	16	7.3	22	<0.05	3.3	26	<0.1	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
BH2M_0.7-0.8	26/05/2023	Silty CLAY	6	<0.3	14	7.3	15	<0.05	4.3	16	<0.1	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
BH3M_0.7-0.8	26/05/2023	Silty CLAY	10	<0.3	25	4.8	24	<0.05	1.3	13	<0.1	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
BH4_0.7-0.8	26/05/2023	Silty CLAY	6	<0.3	21	6.1	28	<0.05	4.4	77	<0.1	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
BH5_0.7-0.8	26/05/2023	Silty CLAY	6	<0.3	21	7.8	74	<0.05	2.7	23	0.4	0.6	<0.1	2.6	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
TP1_0.7-0.8	26/05/2023	Silty CLAY	6	<0.3	24	1.7	20	<0.05	2.3	8.7	<0.1	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
TP2_0.7-0.8	26/05/2023	Silty CLAY	6	<0.3	19	3.2	15	<0.05	1.7	9.5	<0.1	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
TP4_0.7-0.8	26/05/2023	Silty CLAY	6	<0.3	8.4	18	33	0.08	8.8	68	<0.1	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
Statistical Analysis																				
Minimum concentration			3	<0.3	8	2	10	<0.05	1	8	<0.1	<0.3	<0.1	<0.8	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
Maximum concentration			11	<0.3	38	35	130	0.6	41	140	<0.1	<0.3	0	3	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
95% UCL			NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
SILs																				
HIL A - Residential with garden / accessible soil			100	20	100 Cr(VI)	7,000	300	40	400	8,000		3		300						
HIL D - Commercial			3000	900	3600 Cr(VI)	240,000	1,500	730	6,000	400,000		40		4,000						
HSL - A/B (low density residential) Soil texture classification - Sand	0 m to <1 m												3		0.6	190	NL	45		
	1 m to <2 m												NL		0.6	260	NL	70		
HSL - A/B (low density residential) Soil texture classification - Clay	0 m to <1 m												6		0.8	560	NL	130		
	1 m to <2 m												NL		1	NL	NL	NL		
	2 m to <4 m												NL		2	NL	NL	NL		
	4 m +												NL		3	NL	NL	NL		
HSL - D (low density residential) Soil texture classification - Sand	0 m to <1 m												230		3	NL	NL	NL		
	1 m to <2 m												NL		3	NL	NL	NL		
HSL - D (low density residential) Soil texture classification - Clay	0 m to <1 m												NL		4	NL	NL	NL		
	1 m to <2 m												NL		6	NL	NL	NL		
	2 m to <4 m												NL		9	NL	NL	NL		
	4 m +												NL		20	NL	NL	NL		
ESL/EIL - urban residential and public open space [2]			100		200	200	1,100		130	490	33		170		50	85	70			105
Management Limits - Residential parkland and public open space, coarse grained soil texture [1] -Table 1A(3)																				
PFAS - HIL - A																				
PFAS - EIL - Direct Exposure																				
PFAS - EIL - Indirect Exposure																				
Asbestos contamination HSL A Non Bonded / Friable Asbestos (%w/w) -Table 7																				

Sample ID	TRH: F1	F2	F3	F4	PFAS: PFOA	PFOS	PFOS + PFHxS	VOC: Chloroform (THM)	Isopropylbenzene (Cumene)	1,2,4-trimethylbenzene	Trichloroethene (TCE)	cis-1,2-dichloroethene	trans-1,2-dichloroethene	Bromodichloromethane (THM)	Dibromochloromethane (THM)	Total VOC	Pestices: OCPs	OPPs	PCBs: Total	Asbestos: Present (Fibre Type)/ Absent	>7mm w/w%	<7mm w/w%	Asbestos in soil (>2mm to <7mm AF/FA) w/w%	AF/FA in >2mm to <7mm Sample (g)
EI Investigation (2023)																								
Fill																								
BH1M_0.2-0.3	<25	<25	<90	<120	<0.0008	<0.0016	<0.0016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<24	<1	<1	<1	Absent	<0.01	<0.001	<0.001	<0.00001
BH2M_0.2-0.3	<25	<25	<90	<120	<0.0008	<0.0016	<0.0016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<24	<1	<1	<1	Absent	<0.01	<0.001	<0.001	<0.00001
BH3M_0.2-0.3	<25	<25	<90	<120	<0.0008	<0.0016	<0.0016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<24	<1	<1	<1	Present (Chrysotile)	<0.01	0.032	0.032	0.144
BH4_0.2-0.3	<25	<25	<90	<120	<0.0008	<0.0016	<0.0016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<24	<1	<1	<1	Absent	<0.01	<0.001	<0.001	<0.00001
BH5_0.2-0.3	<25	<25	<90	<120	<0.0008	0.0024	0.0024	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<24	<1	<1	<1	Absent	<0.01	<0.001	<0.001	<0.00001
TP1_0.2-0.3	<25	<25	<90	<120	NA	NA	NA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<24	<1	<1	<1	Absent	<0.01	<0.001	<0.001	<0.00001
TP2_0.2-0.3	<25	<25	<90	<120	NA	NA	NA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<24	<1	<1	<1	Absent	<0.01	<0.001	<0.001	<0.00001
TP3_0.2-0.3	<25	<25	<90	<120	<0.0008	<0.0016	<0.0016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<24	<1	<1	<1	Absent	<0.01	<0.001	<0.001	<0.00001
TP6_0.2-0.3	<25	<25	<90	<120	<0.0008	0.0017	0.0017	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<24	<1	<1	<1	Absent	<0.01	<0.001	<0.001	<0.00001
HA1_0.2-0.3	<25	<25	<90	<120	NA	NA	NA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<24	<1	<1	<1	Absent	<0.01	<0.001	<0.001	<0.00001
HA2_0.2-0.3	<25	<25	<90	<120	NA	NA	NA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<24	<1	<1	<1	Absent	<0.01	<0.001	<0.001	<0.00001
HA3_0.2-0.3	<25	<25	<90	<120	NA	NA	NA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<24	<1	<1	<1	Absent	NA	NA	NA	NA
HA4_0.2-0.3	<25	<25	<90	<120	NA	NA	NA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<24	<1	<1	<1	Absent	<0.01	<0.001	<0.001	<0.00001
Natural																								
BH1M_1.2-1.3	<25	<25	<90	<120	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.1	<0.1	NA	<1	<1	<1	NA	NA	NA	NA	NA
BH2M_0.7-0.8	<25	<25	150	<120	NA	NA	NA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<24	<1	<1	<1	NA	NA	NA	NA	NA
BH3M_0.7-0.8	<25	<25	<90	<120	NA	NA	NA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<24	<1	<1	<1	NA	NA	NA	NA	NA
BH4_0.7-0.8	<25	<25	<90	<120	NA	NA	NA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<24	<1	<1	<1	NA	NA	NA	NA	NA
BH5_0.7-0.8	<25	<25	<90	<120	NA	NA	NA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<24	<1	<1	<1	NA	NA	NA	NA	NA
TP1_0.7-0.8	<25	<25	<90	<120	NA	NA	NA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<24	<1	<1	<1	NA	NA	NA	NA	NA
TP2_0.7-0.8	<25	<25	<90	<120	NA	NA	NA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<24	<1	<1	<1	NA	NA	NA	NA	NA
TP4_0.7-0.8	<25	<25	<90	<120	NA	NA	NA	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<24	<1	<1	<1	NA	NA	NA	NA	NA
Statistical Analysis																								
Minimum concentration	<25	<25	<90	<120	<0.0008	<0.0016	<0.0016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<24	<1	<1	<1	Absent	<0.01	<0.001	<0.001	<0.00001
Maximum concentration	<25	<25	150	<120	<0.0008	0.0024	0.0024	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<24	<1	<1	<1	Present	<0.01	0.032	0.032	0.144
95% UCL	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC	NC
SILs																								
HIL A - Residential with garden / accessible soil											0.02	0.08					240		1					
HIL D - Commercial											0.02	0.3					3600		7					
HSL - A/B (low density residential) Soil texture classification - Sand, 0 m to <1 m	50	130																						
HSL - A/B Sand, 1 m to <2 m	85	280																						
HSL - A/B (low density residential) Soil texture classification - Clay, 0 m to <1 m	60	330																						
HSL - A/B Clay, 1 m to <2 m	10	NL																						
HSL - A/B Clay, 2 m to <4 m	180	NL																						
HSL - A/B Clay, 4 m +	340	NL																						
HSL - D (low density residential) Soil texture classification - Sand, 0 m to <1 m	260	NL																						
HSL - D Sand, 1 m to <2 m	370	NL																						
HSL - D (low density residential) Soil texture classification - Clay, 0 m to <1 m	310	NL																						
HSL - D Clay, 1 m to <2 m	480	NL																						
HSL - D Clay, 2 m to <4 m	NL	NL																						
HSL - D Clay, 4 m +	NL	NL																						
ESL/EIL - urban residential and public open space [2]	180	120	300	2800													180 DDT	180						
Management Limits - Residential parkland and public open space, coarse grained soil texture [1] -Table 1A(3)	700	1,000	2500	10,000																				
PFAS - HIL - A					0.01	0.1	NR																	
PFAS - EIL - Direct Exposure					NR	10	1																	
PFAS - EIL - Indirect Exposure					NR	NR	0.01																	
Asbestos contamination HSL A Non Bonded / Friable Asbestos (%w/w) -Table 7																				0.001				

Notes: All results are recorded in mg/kg (unless stated otherwise stated).

Highlighted values indicates concentration exceeds Human Health Based Soil Criteria.
Highlighted values indicates concentration exceeds ecological criteria.
Highlighted indicates the adopted criteria exceeded.
Indicates no recommended assessment criteria are currently available or applicable.

SILs — Soil Investigation levels from Schedule B1 (table reference indicated) of the National Environmental Protection Measure 1999 - Amendment 2013.
HIL A — NEPC 2013 'HIL A' Health Based Investigation Levels applicable for residential with garden/ accesible soil.
HSL A&B — NEPC 2013 'HSL A&B' Health Based Screening Levels applicable for vapour intrusion for low to high density residential in areas where residential occupation exists in the ground floor and there are no car parks under - Applicable to deep soil areas only.

NA — 'Not Analysed' i.e. the sample was not analysed or Not Applicable (for TCLPs)
NC — Not Calculated'
NL — 'Not Limiting' - The soil vapour limit exceeds the soil concentration at which the pore water phase cannot dissolve any more of the individual chemical.
ND — Not Detected
NVA — No Visible Asbestos
C1-C6 — Composite samples All creiteria are divided by 3.
F1 — To obtain F1 subtract the sum of BTEX concentrations from the C6-C10 fraction.
F2 — To obtain F2 subtract Naphthalene from the >C10-C16 fraction.
F3 — (>C16-C34)
F4 — (>C34-C40)
1 — Coarse Grained soil values were applied, as the site soils were predominantly sand in nature.

Table 2 - Summary of Groundwater Analytical Results E26047.02_Melrose Park

Sample ID	Date of sampling	Al	As*	Cd	Cr*	Cu	Pb	Hg	Ni	Zn	Benzo(a)pyrene	Total PAHs	Naphthalene	Benzene	Toluene	Ethylbenzene	o/p-Xylene	m-Xylene
		Metals									PAHs			BTEX				
Groundwater Site Investigation - (EI, 2023)																		
BH1M	31/05/2023	75	<1	<0.1	<1	5	<1	<0.01	31	99	<0.1	<1	<0.1	<0.5	<0.5	<0.5	<1	<0.5
BH2M		170	<1	0.2	<1	2	<1	<0.01	64	420	<0.1	<1	<0.1	<0.5	<0.5	<0.5	<1	<0.5
BH3M		69	1	<0.1	1	<1	<1	<0.01	7	14	<0.1	<1	<0.1	<0.5	<0.5	<0.5	<1	<0.5
Statistical Analysis																		
Minimum Concentration		69	<1	<0.1	<1	<1	<1	<0.01	7	14	<0.1	<1	<0.1	<0.5	<0.5	<0.5	<1	<0.5
Maximum Concentration		170	1	0.2	1	5	<1	<0.01	64	420	<0.1	<1	<0.1	<0.5	<0.5	<0.5	<1	<0.5
GILs																		
HSL A - Low to high density residential Soil texture classification – Clay		0m to <1m											5	0.7	480	NL	NL	NL
		1m to <2m											NL	1	NL	NL	NL	NL
		2m to <4m											NL	2	NL	NL	NL	NL
		4m+											NL	3	NL	NL	NL	NL
ANZG (2018)	Fresh Water	55	24 (AsIII) 13 (AsV)	0.2	1 [3] (Cr VI)	1.4	3.4	0.06 [2]	11	8 [3]	0.1 [2]		16	950	180	80	350	275
	Recreational water		100	20		1,000 *	100	10.00	200	3,000*								
PFAS NEPM (2020) [9]	Interim Marine																	

Sample ID	Date of sampling	F1	F2	F3	F4	PFOS	PFOA	Chloroform (THM)	Isopropylbenzene (Cumene)	1,2,4-trimethylbenzene	Trichloroethene (TCE)	cis-1,2-dichloroethene	trans-1,2-dichloroethene	Bromodichloromethane (THM)	Dibromochloromethane (THM)	Total VOC	Total Cyanide	Total Phenols	pH	Hardness mg CaCO3/L	Turbidity
		TRH				PFAS		VOC									Other Parameters				
Groundwater Site Investigation - (EI, 2023)																					
BH1M	31/05/2023	<50	<60	980	<500	<0.002	0.002	58	<0.5	<0.5	<0.5	<0.5	<0.5	8.4	1.6	68	<0.004	<0.05	6.4	220	24
BH2M		<50	<60	<500	<500	<0.002	0.002	28	<0.5	<0.5	<0.5	<0.5	<0.5	2.7	0.6	31	<0.004	<0.05	5.9	340	39
BH3M		<50	<60	<500	<500	<0.002	0.002	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<0.004	<0.05	5.4	13	5.3
Statistical Analysis																					
Minimum Concentration		<50	<60	<500	<500	<0.002	0.002	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	31	<0.004	<0.05	5.4	13	5.3
Maximum Concentration		<50	<60	<500	<500	<0.002	0.002	58	<0.5	<0.5	<0.5	<0.5	<0.5	8.4	1.6	68	<0.004	<0.05	6.4	340	39
GILs																					
HSL A - Low to high density residential Soil texture classification – Clay	0m to <1m	50	280																		
	1m to <2m	90	NL																		
	2m to <4m	150	NL																		
	4m+	290	NL																		
ANZG (2018)	Fresh Water	50	60	500	500													320			
	Recreational water																				
PFAS NEPM (2020) [9]	Interim Marine					0.13	220														

Notes:

Yellow: Highlighted indicates criteria exceeded

Blue: Highlighted indicates criteria not met

All values are µg/L unless stated otherwise

HSL A & B NEPC 1999 Amendment 2013 'HSL A & B' Health Based Screening Levels for vapour intrusion applicable for low-high density residential settings.

NL Not Limiting

F1 f BTEX concentrations from the C6-C10 fraction.

F2 To obtain F2 subtract naphthalene from the >C10-C16 fraction.

F3 (>C16-C34)

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Date	Sample Identification	Description	TRH				BTEX				Heavy Metals							
			F1	F2	F3	F4	Benzene	Toluene	Ethylbenzene	Xylene (total)	Arsenic	Cadmium	Chromium (Total)	Copper	Lead	Mercury	Nickel	Zinc
Intra-laboratory Duplicate																		
31/05/2023	HA2_0.2-0.3	Primary Soil Sample	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	3	<0.3	38	24	24	<0.05	41	71
31/05/2023	QD1	Intra-laboratory duplicate of HA2_0.2-0.3	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	4	<0.3	31.0	19.0	25	<0.05	31.0	63
		RPD	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***28.57***	***0.00***	***20.29***	***23.26***	***4.08***	***0.00***	***27.78***	***11.94***
31/05/2023	HA1_0.2-0.3	Primary Soil Sample	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	3	<0.3	10	2	10	<0.05	2	8
31/05/2023	QD2	Intra-laboratory duplicate of HA1_0.2-0.3	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	4	<0.3	12.0	3.3	12	<0.05	3	12
		RPD	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***28.57***	***0.00***	***18.18***	***44.44***	***18.18***	***0.00***	**51.16**	***46.15***
Inter-laboratory Duplicate																		
31/05/2023	HA2_0.2-0.3	Primary Soil Sample	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	3	<0.3	38	24	24	<0.05	41	71
31/05/2023	QT1	Inter-laboratory duplicate of HA2_0.2-0.3	<25	<50	<100	<100	<0.2	<0.5	<1	<1	7	<0.4	28	18	28	<0.1	17	47
		RPD	***0.00***	***NA***	***NA***	***NA***	***NA***	***NA***	***NA***	***NA***	**80.00**	***NA***	***30.30***	***28.57***	***15.38***	***NA***	**82.76**	***40.68***
31/05/2023	HA1_0.2-0.3	Primary Soil Sample	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	3	<0.3	10	2	10	<0.05	2	8
31/05/2023	QT2	Inter-laboratory duplicate of HA1_0.2-0.3	<25	<25	<90	<100	<0.2	<0.5	<1	<1	7	<0.4	21	4	12	<0.1	3	12
		RPD	***0.00***	***0.00***	***0.00***	***NA***	***NA***	***NA***	***NA***	***NA***	**80.00**	***NA***	**70.97**	**62.30**	***18.18***	***NA***	**60.87**	***46.15***
Trip Blank																		
26/05/2023	Trip Blank	Soil	-	-	-	-	<0.1	<0.1	<0.1	<0.3	-	-	-	-	-	-	-	-
31/05/2023	Trip Blank	Soil	-	-	-	-	<0.1	<0.1	<0.1	<0.3	-	-	-	-	-	-	-	-
Trip Spike																		
26/05/2023	Trip Spike	Soil	-	-	-	-	[96%]	[97%]	[100%]	-	-	-	-	-	-	-	-	-
31/05/2023	Trip Spike	Soil	-	-	-	-	[107%]	[90%]	[123%]	-	-	-	-	-	-	-	-	-
Rinsate Blanks																		
31/05/2023	QR1	Equipment rinsate water	<50	<60	<500	<500	<0.5	<0.5	<0.5	<1.5	<1	<0.1	<1	<1	<1	<0.1	<1	<5

Indicates values where a single result is found to be less than detection, with the duplicate sample found to be over the detection limit.
RPD exceeds 30-50% range referenced from AS4482.1 (2005)

Note: All soil results are reported in mg/kg and water results are reported in µg/L.

F1 = TRH C6-C10 less the sum of BTEX
F2 = TRH >C10-C16 less naphthalene
F3 = TRH >C16-C34
F4 = TRH >C34-C40

Date	Sample Identification	Description	TRH				BTEX				Heavy Metals							
			F1	F2	F3	F4	Benzene	Toluene	Ethylbenzene	Xylene (total)	Arsenic	Cadmium	Chromium (Total)	Copper	Lead	Mercury	Nickel	Zinc
Inter-laboratory Duplicate																		
31/05/2023	GWBH1M	Primary Groundwater Sample	<50	<60	980.0	<500	<0.5	<0.5	<0.5	<1.5	<1	<0.1	<1	5	<1	<0.01	31	99
31/05/2023	QD1	Inter-laboratory duplicate of GWBH1M	<50	<60	<500	<500	<0.5	<0.5	<0.5	<1.5	<1	0.1	<1	5	<1	<0.1	29	93
		RPD	***0.00***	***0.00***	**78.05**	***0.00***	***0.00***	***0.00***	***0.00***	***NA***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***NA***	***6.67***	***6.25***
Intra-laboratory Duplicate																		
31/05/2023	GWBH1M	Primary Groundwater Sample	<50	<60	980.0	<500	<0.5	<0.5	<0.5	<1.5	<1	<0.1	<1	5	<1	<0.01	31	99
31/05/2023	QT1	Inter-laboratory duplicate of GWBH1M	<10	<50	<100	<100	<1	<1	<1	-	-	-	-	-	-	-	-	-
		RPD	***NA***	***NA***	**170.87**	***NA***	***NA***	***NA***	***NA***	***NA***	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Trip Blank																		
31/05/2023	Trip Blank	Water	-	-	-	-	<0.5	<0.5	<0.5	<1.5	-	-	-	-	-	-	-	-
Trip Spike																		
31/05/2023	Trip Spike	Water	-	-	-	-	[98%]	[100%]	[97%]	-	-	-	-	-	-	-	-	-

Indicates values where a single result is found to be less than detection, with the duplicate sample found to be over the detection limit.
RPD exceeds 30-50% range referenced from AS4482.1 (2005)

Note: All water results are reported in µg/L.

F1 = TRH C6-C10 less the sum of BTEX
F2 = TRH >C10-C16 less naphthalene
F3 = TRH >C16-C34
F4 = TRH >C34-C40

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Appendix C – Proposed Development

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NOTES

REV	DATE	DESCRIPTION
A	9/12/20	For Planning Proposal
B	9/6/21	Council Feedback
C	22/4/22	Planning Prop. Report Update

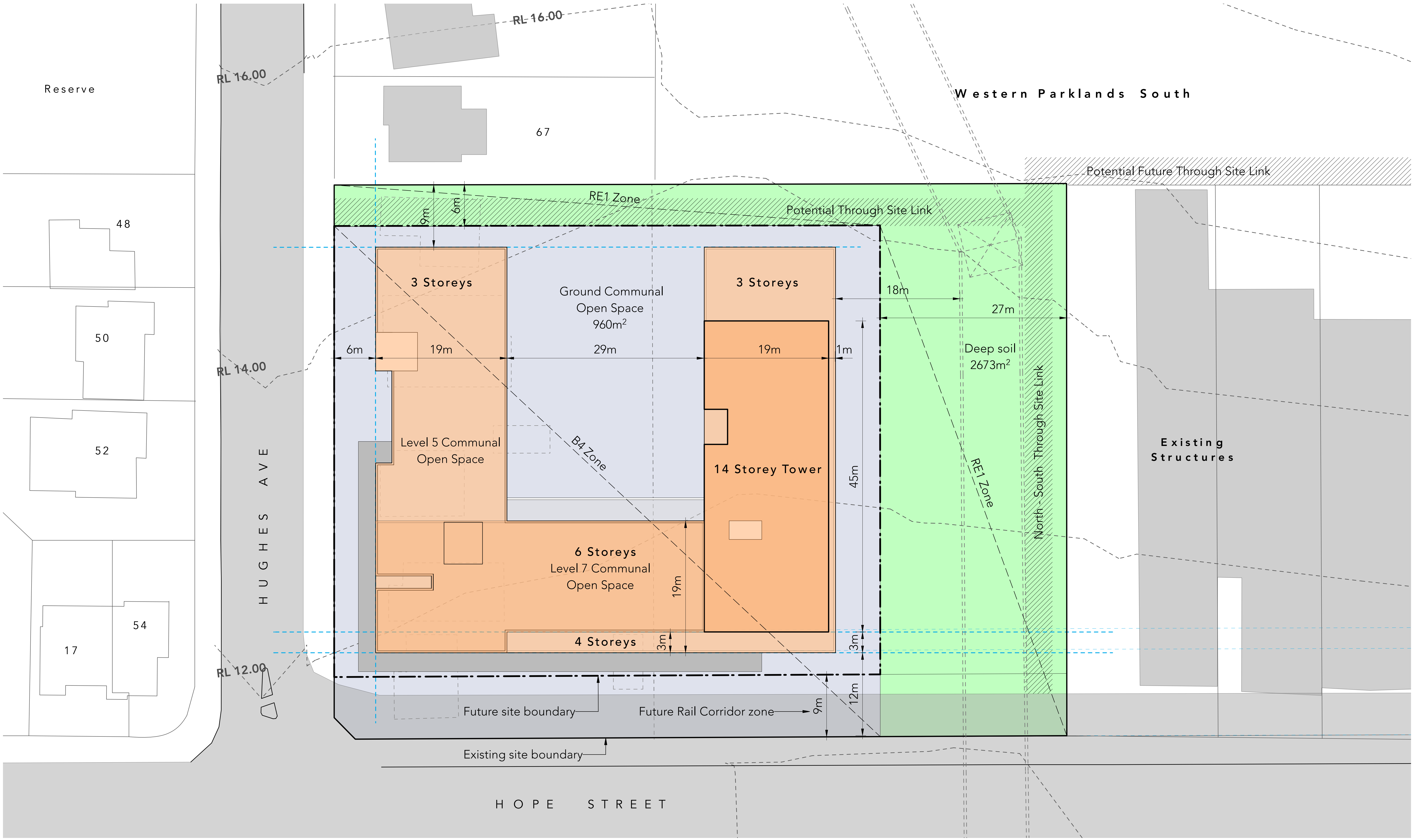
PROJECT
Planning Proposal
Tomola Site - Melrose Park

PROJECT ADRESS
Corner Hughes Ave &
Hope St Ermington

CLIENT
Constant 26 Pty Ltd

TITLE
Cover

SCALE	DRAWN	CHECKED BY
NTS @ A3	TD	RO
PROJECT NO.	DATE	STAGE
2005	22/4/22	PP
DWG NO.		REVISION
PP01		C



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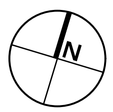


REV	DATE	DESCRIPTION
A	9/12/20	For Planning Proposal
B	9/6/21	Council Feedback
C	22/4/22	Planning Prop. Report Update

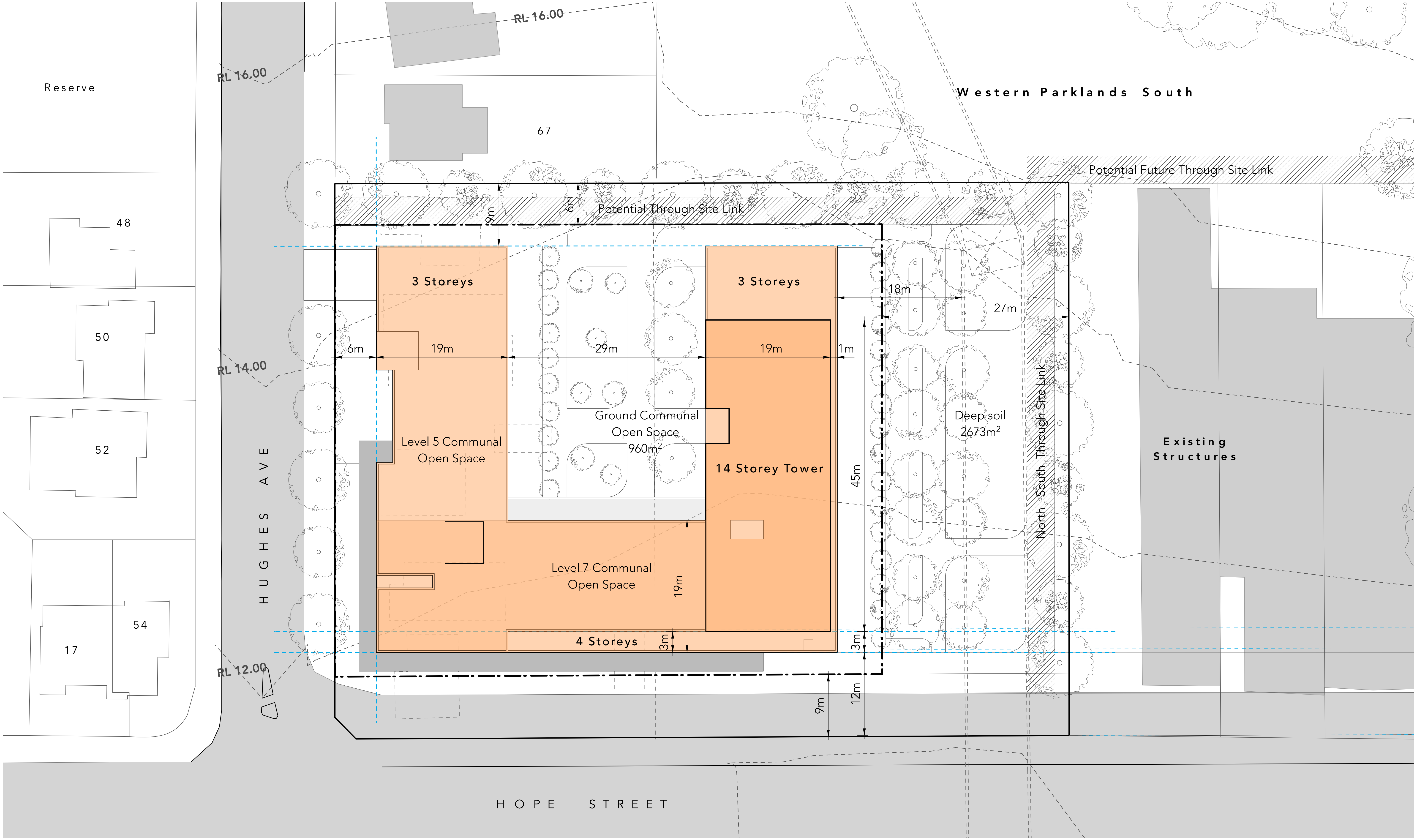
PROJECT
Planning Proposal
Tomola Site - Melrose Park

PROJECT ADRESS
Corner Hughes Ave &
Hope St Ermington

CLIENT
Constant 26 Pty Ltd

TITLE
Site Plan

SCALE	DRAWN	CHECKED BY
1:500 @ A3	TD	RO
PROJECT NO.	DATE	STAGE
2005	22/4/22	PP
DWG NO.		REVISION
PP03		C



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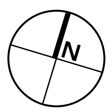


REV	DATE	DESCRIPTION
A	9/12/20	For Planning Proposal
B	22/4/22	Planning Prop. Report Update

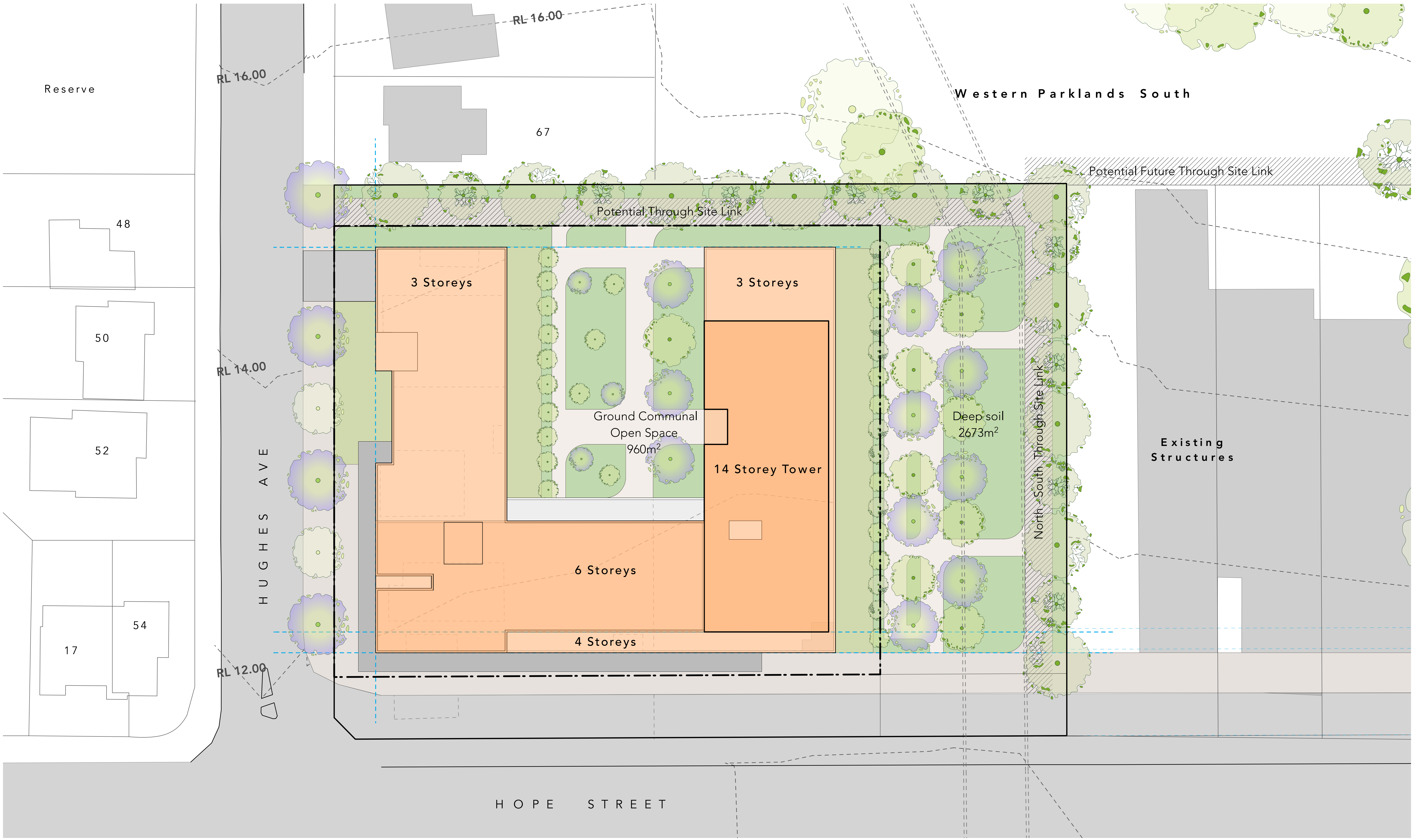
PROJECT
Planning Proposal
Tomola Site - Melrose Park

PROJECT ADRESS
Corner Hughes Ave &
Hope St Ermington

CLIENT
Payce MP 2 Pty Ltd &
SH Melrose Development 1 Pty Ltd

TITLE
Site Plan

SCALE	DRAWN	CHECKED BY
1:500 @ A3	TD	RO
PROJECT NO.	DATE	STAGE
2005	22/4/22	PP
DWG NO.		REVISION
PP03.1		B



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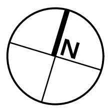

REV	DATE	DESCRIPTION
A	9/12/20	For Planning Proposal
B	9/6/21	Council Feedback
C	22/4/22	Planning Prop. Report Update

PROJECT
Planning Proposal
Tomola Site - Melrose Park

PROJECT ADRESS
Corner Hughes Ave &
Hope St Ermington

CLIENT
Constant 26 Pty Ltd

TITLE
Landscape Plan

SCALE	DRAWN	CHECKED BY
1:500 @ A3	TD	RO
PROJECT NO.	**DATE**	**STAGE**
2005	22/4/22	PP
DWG NO.		**REVISION**
PP04		C

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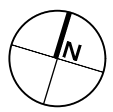


REV	DATE	DESCRIPTION
A	9/12/20	For Planning Proposal
B	9/6/21	Council Feedback
C	22/4/22	Planning Prop. Report Update

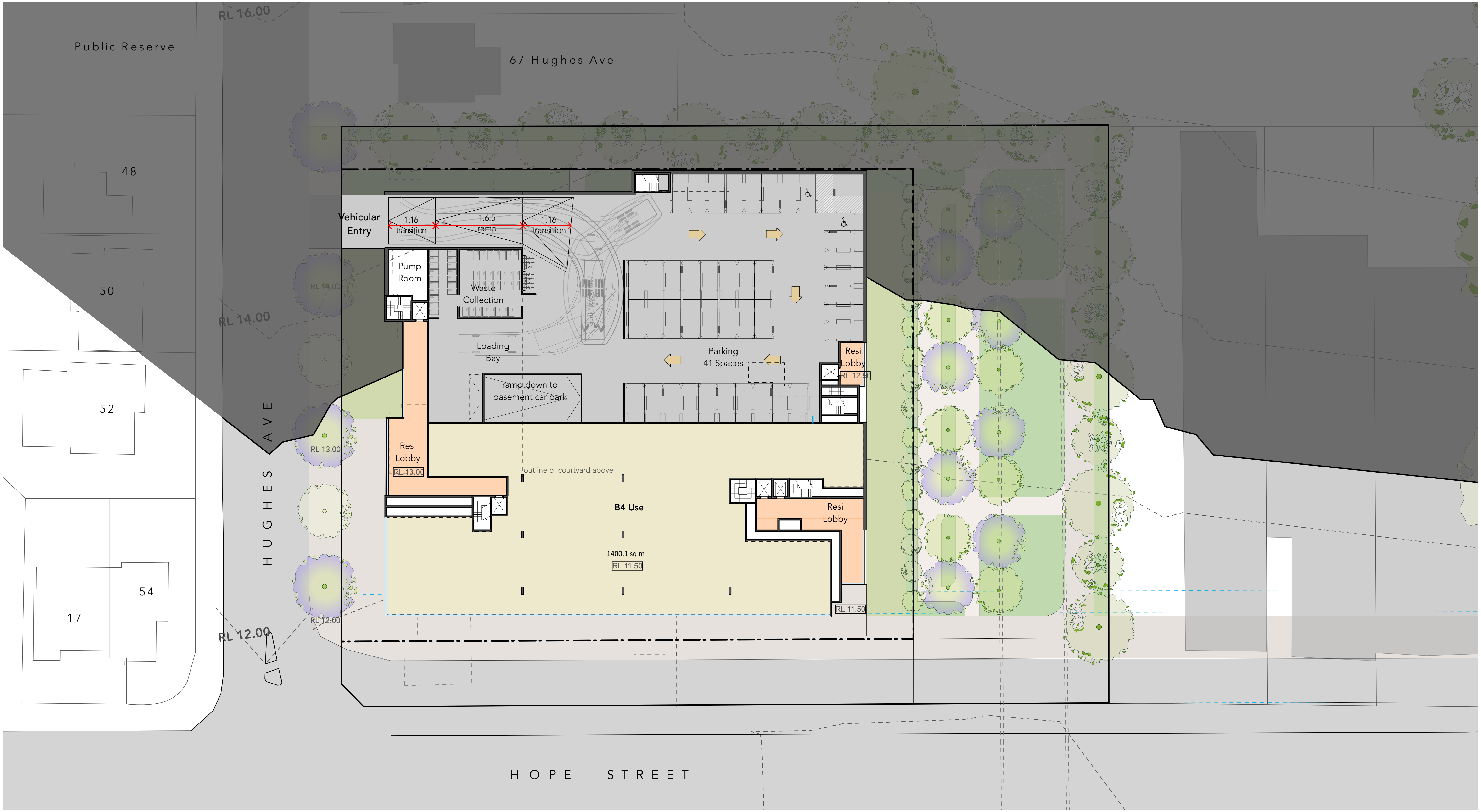
PROJECT
Planning Proposal
Tomola Site - Melrose Park

PROJECT ADRESS
Corner Hughes Ave & Hope St Ermington

CLIENT
Constant 26 Pty Ltd

TITLE
Typical Basement Plan

SCALE	DRAWN	CHECKED BY
1:500 @ A3	LT	RO
PROJECT NO.	**DATE**	**STAGE**
2005	22/4/22	PP
DWG NO.		**REVISION**
PP05		C



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REV	DATE	DESCRIPTION
A	9/12/20	For Planning Proposal
B	9/6/21	Council Feedback
C	22/4/22	Planning Prop. Report Update

PROJECT
Planning Proposal
Tomola Site - Melrose Park

PROJECT ADRESS
Corner Hughes Ave &
Hope St Ermington

CLIENT
Constant 26 Pty Ltd

TITLE
Ground Level Plan

SCALE	DRAWN	CHECKED BY
1:500 @ A3	LT	RO
PROJECT NO.	**DATE**	**STAGE**
2005	22/4/22	PP

DWG NO.
PP06

REVISION
C

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NOTES

REV	DATE	DESCRIPTION
A	9/12/20	For Planning Proposal
B	9/6/21	Council Feedback
C	22/4/22	Planning Prop. Report Update

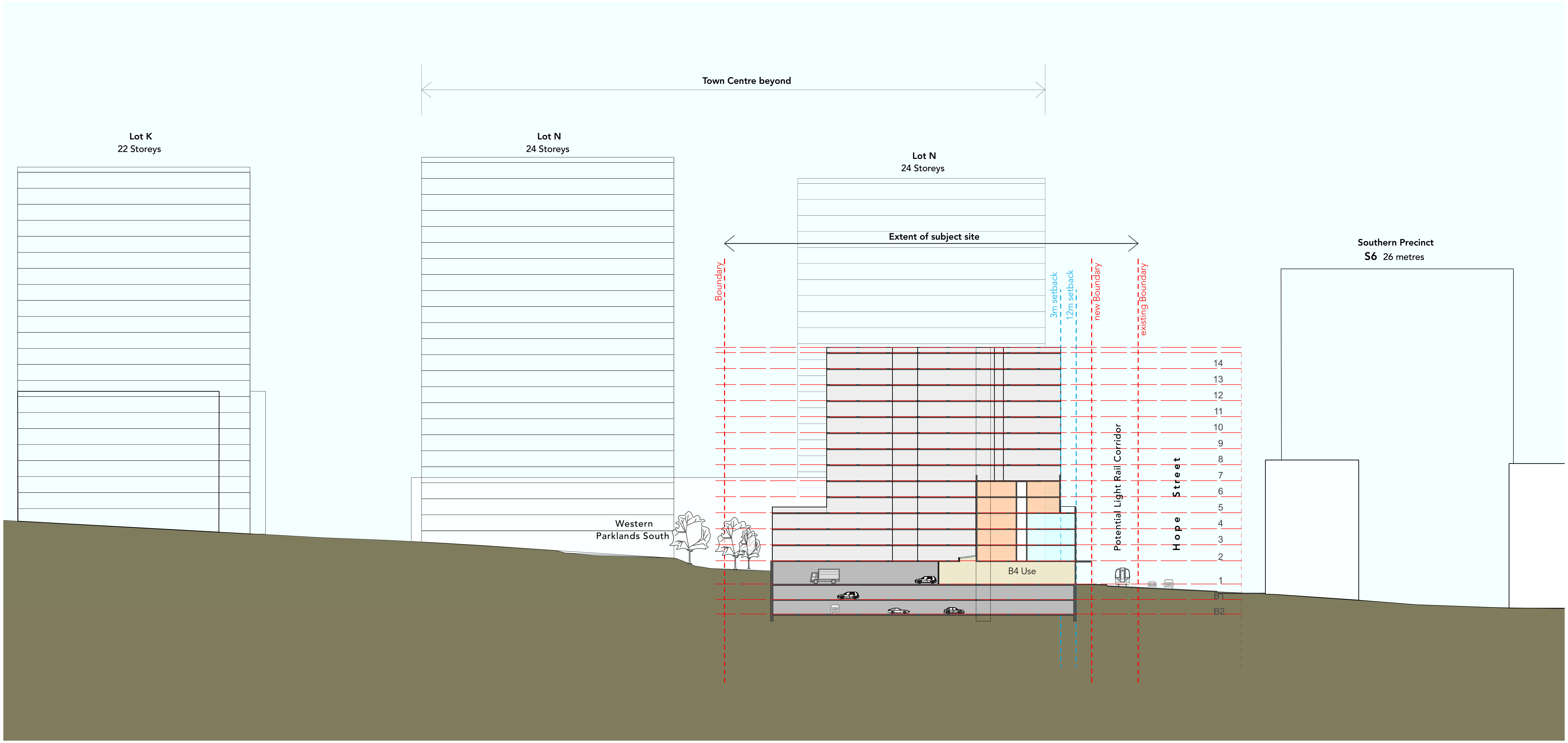
PROJECT
Planning Proposal
Tomola Site - Melrose Park

PROJECT ADRESS
Corner Hughes Ave &
Hope St Ermington

CLIENT
Constant 26 Pty Ltd

TITLE
Level 2 Plan

SCALE	DRAWN	CHECKED BY
1:500 @ A3	LT	RO
PROJECT NO.	**DATE**	**STAGE**
2005	22/4/22	PP
DWG NO.		**REVISION**
PP07		C



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REV	DATE	DESCRIPTION
A	9/12/20	For Planning Proposal
B	9/6/21	Council Feedback
C	22/4/22	Planning Prop. Report Update

PROJECT
Planning Proposal
Tomola Site - Melrose Park

PROJECT ADRESS
Corner Hughes Ave &
Hope St Ermington

CLIENT
Constant 26 Pty Ltd

TITLE
Section

SCALE	DRAWN	CHECKED BY
1:750 @ A3	LT	RO

PROJECT NO.	DATE	STAGE
2005	22/4/22	PP

DWG NO.	REVISION
PP13	**C**

Appendix D – Site Photographs

Photograph 1: General condition of southern portion of 19 Hope Street (25 May 2023).

Photograph 2: Shipping containers at 19 Hope Street (25 May 2023).

Photograph 3: General site condition, vacant land at 69 Hughes Avenue (25 May 2023).

Photograph 4: General site condition, residential dwelling at 77 Hughes Avenue (25 May 2023).

Photograph 5: General site condition, residential dwelling at 75 Hughes Avenue (25 May 2023).

Photograph 6: General site condition, residential dwelling at 73 Hughes Avenue (25 May 2023).

Photograph 7: General site condition, residential 71 dwelling at Hughes Avenue (25 May 2023).

Photograph 8: View of the material from natural material from TP1(25 May 2023).

Appendix E – Borehole Logs

BOREHOLE LOG

BH ID: HA1

Location	Cnr of Hughes Ave & Hope St, Melrose Park, NSW	**Started**	31 May 2023		
Client	M Projects	**Completed**	31 May 2023		
Job No.	E26047.E02	**Logged By**	AL	**Date**	31 May 2023
Sheets	1 of 1	**Review By**	SR	**Date**	

Drilling Contractor	-	**Surface RL**	-	**Latitude**	-
Plant	-	**Inclination**	90°	**Longtitude**	-

METHOD	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	SAMPLE RECOVERY	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / REL. DENSITY	MATERIAL ORIGIN & OBSERVATIONS
		HA1_0.20-0.30		0.00			Topsoil: Silty CLAY: low plasticity, brown, dry, No odour, with trace of rootlets. fine grained silt.			TOPSOIL
							Terminated at 0.40m. Refusal on hard surface.			

Depth scale: 0, 1, 2, 3, 4, 5

This log should be read in conjunction with EI Australia's accompanying explanatory notes.

BOREHOLE LOG

BH ID: HA2

Location	Cnr of Hughes Ave & Hope St, Melrose Park, NSW	**Started**	31 May 2023
Client	M Projects	**Completed**	31 May 2023
Job No.	E26047.E02	**Logged By**	AL — **Date** 31 May 2023
Sheets	1 of 1	**Review By**	SR — **Date**

Drilling Contractor	-	**Surface RL**	-	**Latitude**	-
Plant	-	**Inclination**	90°	**Longtitude**	-

METHOD	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	SAMPLE RECOVERY	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / REL. DENSITY	MATERIAL ORIGIN & OBSERVATIONS
		HA2_0.20-0.30		0.00			Topsoil: Silty CLAY: low plasticity, brown, dry, No odour, with trace of rootlets. fine grained silt.			TOPSOIL
				0.30			CLAY: low plasticity, orange mottled red, dry, No odour			
		HA2_0.70-0.80		0.50			Silty CLAY: low plasticity, grey, dry, No odour			
							Terminated at 0.80m. Refusal on hard surface.			

Depth scale: 0, 1, 2, 3, 4, 5

BOREHOLE LOG

BH ID: HA3

Location	Cnr of Hughes Ave & Hope St, Melrose Park, NSW	**Started**	31 May 2023
Client	M Projects	**Completed**	31 May 2023
Job No.	E26047.E02	**Logged By**	AL **Date** 31 May 2023
Sheets	1 of 1	**Review By**	SR **Date**

Drilling Contractor -	**Surface RL** -	**Latitude**	-
Plant -	**Inclination** 90°	**Longtitude**	-

METHOD	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	SAMPLE RECOVERY	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / REL. DENSITY	MATERIAL ORIGIN & OBSERVATIONS
		HA3_0.20-0.30		0.00			Topsoil: Silty CLAY: low plasticity, brown, dry, No odour, with trace of rootlets. fine grained silt.			TOPSOIL
		HA3_0.70-0.80		0.30			CLAY: medium to high plasticity, orange mottled red, dry, No odour			
							Terminated at 0.90m. Target Depth Reached.			

Depth scale: 0, 1, 2, 3, 4, 5

BOREHOLE LOG

BH ID: HA4

Location	Cnr of Hughes Ave & Hope St, Melrose Park, NSW	**Started**	31 May 2023		
Client	M Projects	**Completed**	31 May 2023		
Job No.	E26047.E02	**Logged By**	AL	**Date**	31 May 2023
Sheets	1 of 1	**Review By**	SR	**Date**	

Drilling Contractor	-	**Surface RL**	-	**Latitude**	-
Plant	-	**Inclination**	90°	**Longtitude**	-

METHOD	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	SAMPLE RECOVERY	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / REL. DENSITY	MATERIAL ORIGIN & OBSERVATIONS
				0.00			Topsoil: Silty CLAY: low plasticity, brown, dry, No odour, with trace of rootlets. fine grained silt.			TOPSOIL
		HA4_0.2-0.3		0.10			Silty CLAY: low to medium plasticity, Orange, mottled red, dry, No odour			RESIDUAL SOIL
							Terminated at 0.40m. Refusal on hard surface.			

Depth scale: 0, 1, 2, 3, 4, 5

This log should be read in conjunction with EI Australia's accompanying explanatory notes.

Test Pit LOG

TP ID: TP1

Location	Cnr of Hughes Ave & Hope St, Melrose Park, NSW	**Started**	26 May 2023		
Client	M Projects	**Completed**	26 May 2023		
Job No.	E26047.E02	**Logged By**	AL	**Date**	26 May 2023
Sheets	1 of 1	**Review By**	SR	**Date**	

Drilling Contractor	-	**Surface RL**	-	**Latitude**	-
Plant	-	**Inclination**	90°	**Longtitude**	-

METHOD	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	SAMPLE RECOVERY	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / REL. DENSITY	MATERIAL ORIGIN & OBSERVATIONS
		TP1_0.2-0.3		0.00			FILL: Silty CLAY: low to medium plasticity, brown, with rootlets and brick fragments, No odour			FILL
		TP1_0.7-0.8		0.30			Silty CLAY: low to medium plasticity, orange mottled red, dry, No odour			RESIDUAL SOIL
				1			Terminated at 1.00m. Target Depth Reached.			

Test Pit LOG

TP ID: TP2

Location	Cnr of Hughes Ave & Hope St, Melrose Park, NSW	**Started**	26 May 2023		
Client	M Projects	**Completed**	26 May 2023		
Job No.	E26047.E02	**Logged By**	AL	**Date**	26 May 2023
Sheets	1 of 1	**Review By**	SR	**Date**	

Drilling Contractor	-	**Surface RL**	-	**Latitude**	-
Plant	-	**Inclination**	90°	**Longtitude**	-

METHOD	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	SAMPLE RECOVERY	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / REL. DENSITY	MATERIAL ORIGIN & OBSERVATIONS
		TP2_0.20-0.30		0.00			Topsoil: Silty CLAY: low plasticity, brown, dry, No odour, with trace of rootlets. fine grained silt.			TOPSOIL
		TP2_0.70-0.80		0.40			CLAY: low to medium plasticity, orange mottled red, dry, No odour			RESIDUAL SOIL
				1			Terminated at 1.00m. Target Depth Reached.			
				2						
				3						
				4						
				5						

Test Pit LOG

TP ID: TP3

Location	Cnr of Hughes Ave & Hope St, Melrose Park, NSW	**Started**	26 May 2023		
Client	M Projects	**Completed**	26 May 2023		
Job No.	E26047.E02	**Logged By**	AL	**Date**	26 May 2023
Sheets	1 of 1	**Review By**	SR	**Date**	

Drilling Contractor	-	**Surface RL**	-	**Latitude**	-
Plant	-	**Inclination**	90°	**Longtitude**	-

METHOD	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	SAMPLE RECOVERY	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / REL. DENSITY	MATERIAL ORIGIN & OBSERVATIONS
		TO3_0.20-0.30		0.00			Topsoil: Silty CLAY: low plasticity, brown, dry, No odour, with trace of rootlets. fine grained silt.			TOPSOIL
		TO3_0.70-0.80 TO3_1.20-1.30		0.50			CLAY: low to medium plasticity, orange mottled red, dry, Yes odour			RESIDUAL SOIL
							Terminated at 1.40m. Target Depth Reached.			

Test Pit LOG

TP ID: TP4

Location	Cnr of Hughes Ave & Hope St, Melrose Park, NSW	**Started**	26 May 2023		
Client	M Projects	**Completed**	26 May 2023		
Job No.	E26047.E02	**Logged By**	AL	**Date**	26 May 2023
Sheets	1 of 1	**Review By**	SR	**Date**	

Drilling Contractor	-	**Surface RL**	-	**Latitude**	-
Plant	-	**Inclination**	90°	**Longtitude**	-

METHOD	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	SAMPLE RECOVERY	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / REL. DENSITY	MATERIAL ORIGIN & OBSERVATIONS
		TP4_0.20-0.30		0.00			Topsoil: Silty CLAY: low plasticity, brown, dry, No odour, with trace of rootlets. fine grained silt.			TOPSOIL
		TP4_0.70-0.80		0.40			CLAY: low to medium plasticity, orange mottled red, dry, No odour			RESIDUAL SOIL
				1			Terminated at 1.00m. Target Depth Reached.			
				2						
				3						
				4						
				5						

Test Pit LOG

TP ID: TP5

Location	Cnr of Hughes Ave & Hope St, Melrose Park, NSW	**Started**	26 May 2023		
Client	M Projects	**Completed**	26 May 2023		
Job No.	E26047.E02	**Logged By**	AL	**Date**	26 May 2023
Sheets	1 of 1	**Review By**	SR	**Date**	

Drilling Contractor	-	**Surface RL**	-	**Latitude**	-
Plant	-	**Inclination**	90°	**Longtitude**	-

METHOD	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	SAMPLE RECOVERY	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / REL. DENSITY	MATERIAL ORIGIN & OBSERVATIONS
		TP5_0.20-0.30		0.00			Topsoil: Silty CLAY: low plasticity, brown, dry, No odour, with trace of rootlets. fine grained silt.			TOPSOIL
		TP5_0.70-0.80		0.40			CLAY: low to medium plasticity, orange mottled red, dry, No odour			RESIDUAL SOIL
				1			Terminated at 1.00m. Target Depth Reached.			
				2						
				3						
				4						
				5						

Test Pit LOG

TP ID: TP6

Location	Cnr of Hughes Ave & Hope St, Melrose Park, NSW	**Started**	26 May 2023		
Client	M Projects	**Completed**	26 May 2023		
Job No.	E26047.E02	**Logged By**	AL	**Date**	26 May 2023
Sheets	1 of 1	**Review By**	SR	**Date**	

Drilling Contractor	-	**Surface RL**	-	**Latitude**	-
Plant	-	**Inclination**	90°	**Longtitude**	-

METHOD	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	SAMPLE RECOVERY	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / REL. DENSITY	MATERIAL ORIGIN & OBSERVATIONS
		TP6_0.20-0.30		0.00			Topsoil: Silty CLAY: low plasticity, brown, dry, No odour, with trace of rootlets. fine grained silt.			TOPSOIL
		TP6_0.70-0.80		0.40			CLAY: low to medium plasticity, orange mottled red, dry, No odour			RESIDUAL SOIL
				1			Terminated at 1.00m. Target Depth Reached.			

BOREHOLE LOG

BH ID: BH1M

Location	Cnr of Hughes Ave & Hope St, Melrose Park, NSW	**Started**	25 May 2023		
Client	M Projects	**Completed**	25 May 2023		
Job No.	E26047.E02	**Logged By**	AL	**Date**	25 May 2023
Sheets	1 of 2	**Review By**	SR	**Date**	

Drilling Contractor	Matrix Drilling	**Surface RL**	≈10.50 m (AHD)	**Northing**	-4003944.1211 (MGA 2020 Zone 56)
Plant	Comacchio Geo 405	**Inclination**	90°	**Easting**	16816805.4101 (MGA 2020 Zone 56)

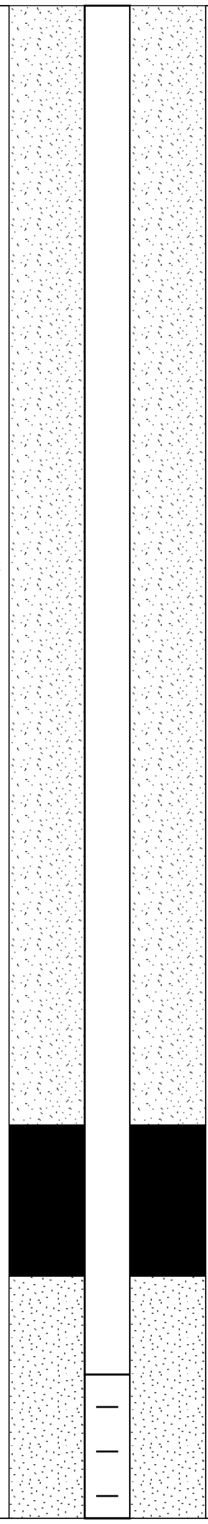
WATER	SAMPLES & FIELD TESTS	DEPTH (m)	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION
GWNE	BH1M_0.2-0.3	0.00	10.50	FILL: Silty CLAY: low to medium plasticity, brown, trace of rootlets, brick fragments, and sub-angular gravels, dry, no odour.	
	BH1M_0.7-0.8	0.75	9.75	Silty CLAY: low to medium plasticity, brown mottled pale grey, moist, yes odour.	M < PL
		1.87	8.63	SAND: fine to medium grained, grey	M
		1.95	8.55	From 1.95m, pale grey to brown, grading into extremely weathered sandstone, moist, yes odour.	
90% Water		2.62	7.88	SANDSTONE: fine to medium grained, orange with ironstaining	
		6.27	4.23	From 6.27m, pale grey, with siltstone laminations	

Depth scale: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

BACKFILL DETAILS

Grout 0.00m - 7.40m

Bentonite 7.40m - 8.40m



STANDPIPE DETAILS

-1.0m - 9.05m PVC casing (50mm Ø)

BOREHOLE LOG

BH ID: BH1M

Location	Cnr of Hughes Ave & Hope St, Melrose Park, NSW	**Started**	25 May 2023		
Client	M Projects	**Completed**	25 May 2023		
Job No.	E26047.E02	**Logged By**	AL	**Date**	25 May 2023
Sheets	2 of 2	**Review By**	SR	**Date**	

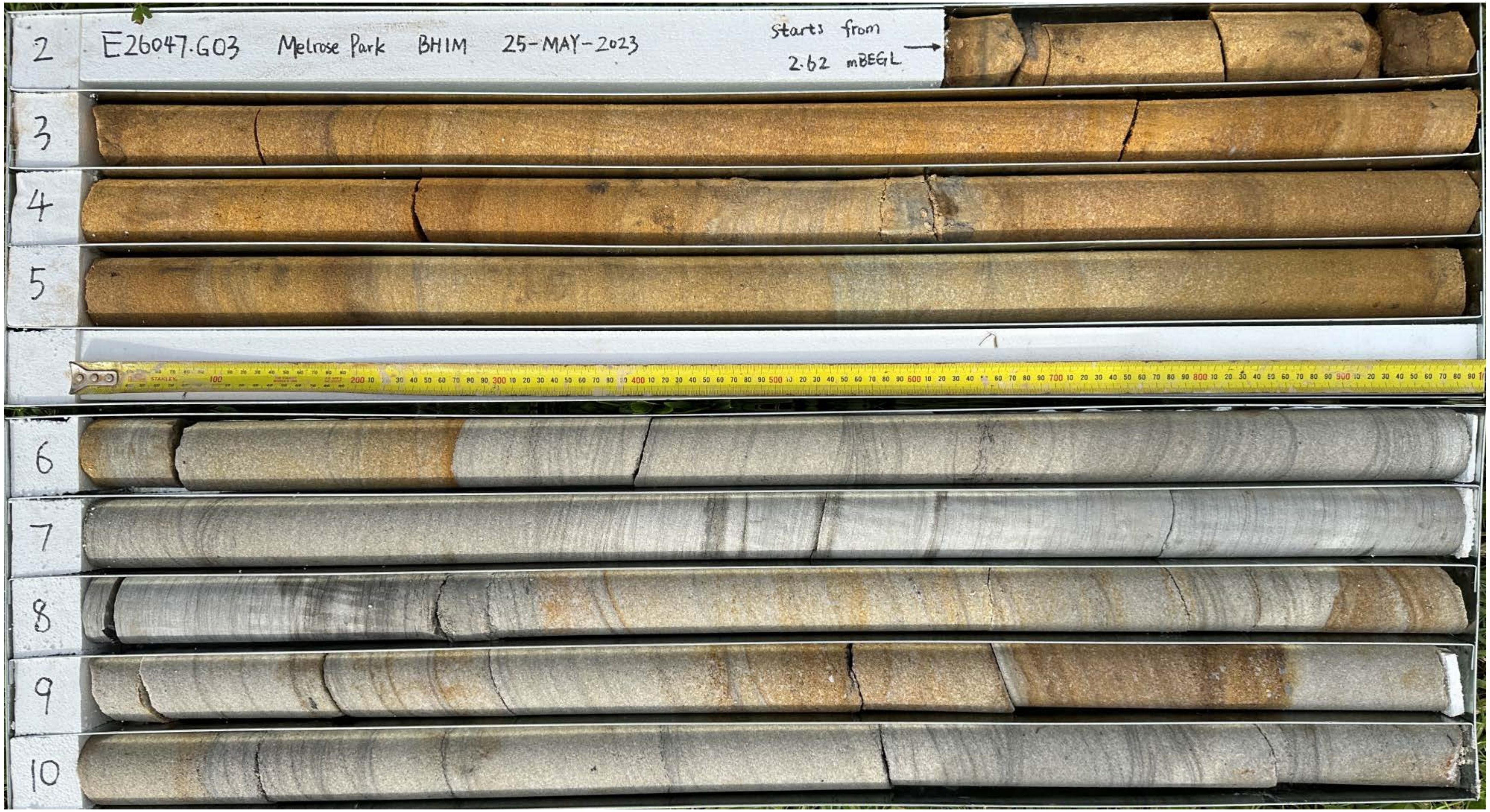
Drilling Contractor	Matrix Drilling	**Surface RL**	≈10.50 m (AHD)	**Northing**	-4003944.1211 (MGA 2020 Zone 56)
Plant	Comacchio Geo 405	**Inclination**	90°	**Easting**	16816805.4101 (MGA 2020 Zone 56)

WATER	SAMPLES & FIELD TESTS	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION	BACKFILL DETAILS	STANDPIPE DETAILS
90% Water		11, 12, 13, 14					Sand 8.40m - 15.26m	9.05m - 15.05m PVC screen (50mm Ø)
		14.72		-4.22	SHALE: dark grey			
		14.77, 15		-4.27	SANDSTONE: fine to medium grained, pale grey, with siltstone laminations			
		16, 17, 18, 19, 20		-4.76	Terminated at 15.26m. Target Depth Reached.			

This log should be read in conjunction with EI Australia's accompanying explanatory notes.

CORE PHOTOGRAPH OF BOREHOLE: BH1M

Project	Proposed Residential Development			**Depth Range**	2.62m to 11.0m BEGL		
Location	Cnr of Hughes Ave & Hope St, Melrose Park NSW			**Contractor**	Matrix Drilling Pty Ltd		
Position	See Figure 2	**Surface RL**	≈ 10.50m (AHD)	**Drill Rig**	Comacchio Geo 405		
Job No.	E26047.G03	**Inclination**	-90°	**Logged**	JC	**Date**	25 / 05 / 2023
Client	PAYCE MP 2 Pty Ltd	**Box**	1-2 of 3	**Checked**		**Date**	



CORE PHOTOGRAPH OF BOREHOLE: BH1M

Project	Proposed Residential Development			**Depth Range**	11.0m to 15.26m BEGL
Location	Cnr of Hughes Ave & Hope St, Melrose Park NSW			**Contractor**	Matrix Drilling Pty Ltd
Position	See Figure 2	**Surface RL**	≈ 10.50m (AHD)	**Drill Rig**	Comacchio Geo 405
Job No.	E26047.G03	**Inclination**	-90°	**Logged**	JC **Date** 25 / 05 / 2023
Client	PAYCE MP 2 Pty Ltd	**Box**	3 of 3	**Checked**	**Date**

BOREHOLE LOG

BH ID: BH2M

Location	Cnr of Hughes Ave & Hope St, Melrose Park, NSW	**Started**	25 May 2023
Client	M Projects	**Completed**	26 May 2023
Job No.	E26047.E02	**Logged By**	AL **Date** 26 May 2023
Sheets	1 of 2	**Review By**	SR **Date**

Drilling Contractor	Matrix Drilling	**Surface RL**	≈14.30 m (AHD)	**Northing**	-4003865.2316 (MGA 2020 Zone 56)
Plant	Comacchio Geo 405	**Inclination**	90°	**Easting**	16816773.9624 (MGA 2020 Zone 56)

WATER	SAMPLES & FIELD TESTS	DEPTH (m)	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION
	BH2M_0.2-0.3 BH2M_0.7-0.8	0.00	14.30	FILL: Silty CLAY: low to medium plasticity, brown, trace of sub-angular to angular gravels and rootlets, dry, no odour.	M < PL
		0.80	13.50	Silty CLAY: low to medium plasticity, pale grey mottled orange red, dry no odour.	
		2.30	12.00	From 2.30m, orange brown, grading into extremely weathered sandstone	
90% Water		2.63	11.67	SANDSTONE: fine to medium graine, brown with ironstaining	
		5.61	8.69	From 5.61m, pale grey, with siltstone laminations	
		7.55	6.75	From 7.55m, with shale laminations	
		8.48	5.82	From 8.48m, orange brown with ironstaining	

BACKFILL DETAILS

Grout
0.00m - 7.50m

Bentonite
7.50m - 8.50m

STANDPIPE DETAILS

-0.76m - 9.0m
PVC casing (50mm Ø)

BOREHOLE LOG

BH ID: BH2M

Location	Cnr of Hughes Ave & Hope St, Melrose Park, NSW	**Started**	25 May 2023		
Client	M Projects	**Completed**	26 May 2023		
Job No.	E26047.E02	**Logged By**	AL	**Date**	26 May 2023
Sheets	2 of 2	**Review By**	SR	**Date**	

Drilling Contractor	Matrix Drilling	**Surface RL**	≈14.30 m (AHD)	**Northing**	-4003865.2316 (MGA 2020 Zone 56)
Plant	Comacchio Geo 405	**Inclination**	90°	**Easting**	16816773.9624 (MGA 2020 Zone 56)

WATER	SAMPLES & FIELD TESTS	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION	BACKFILL DETAILS	STANDPIPE DETAILS
90% Water		11						
		12					Sand 8.50m - 15.25m	9.0m - 15.0m PVC screen (50mm Ø)
		13						
		13.26		1.04	From 13.26m, with shale laminations			
		14						
		14.28		0.02	SHALE: dark grey			
		14.60		-0.30	SANDSTONE: fine to medium grained, pale grey,with shale laminations			
		15						
				-0.95	Terminated at 15.25m. Target Depth Reached.			
		16						
		17						
		18						
		19						
		20						

CORE PHOTOGRAPH OF BOREHOLE: BH2M

Project	Proposed Residential Development			**Depth Range**	2.63m to 11.0m BEGL		
Location	Cnr of Hughes Ave & Hope St, Melrose Park NSW			**Contractor**	Matrix Drilling Pty Ltd		
Position	See Figure 2	**Surface RL**	≈ 14.30m (AHD)	**Drill Rig**	Comacchio Geo 405		
Job No.	E26047.G03	**Inclination**	-90°	**Logged**	JC	**Date**	26 / 05 / 2023
Client	PAYCE MP 2 Pty Ltd	**Box**	1-2 of 3	**Checked**		**Date**	

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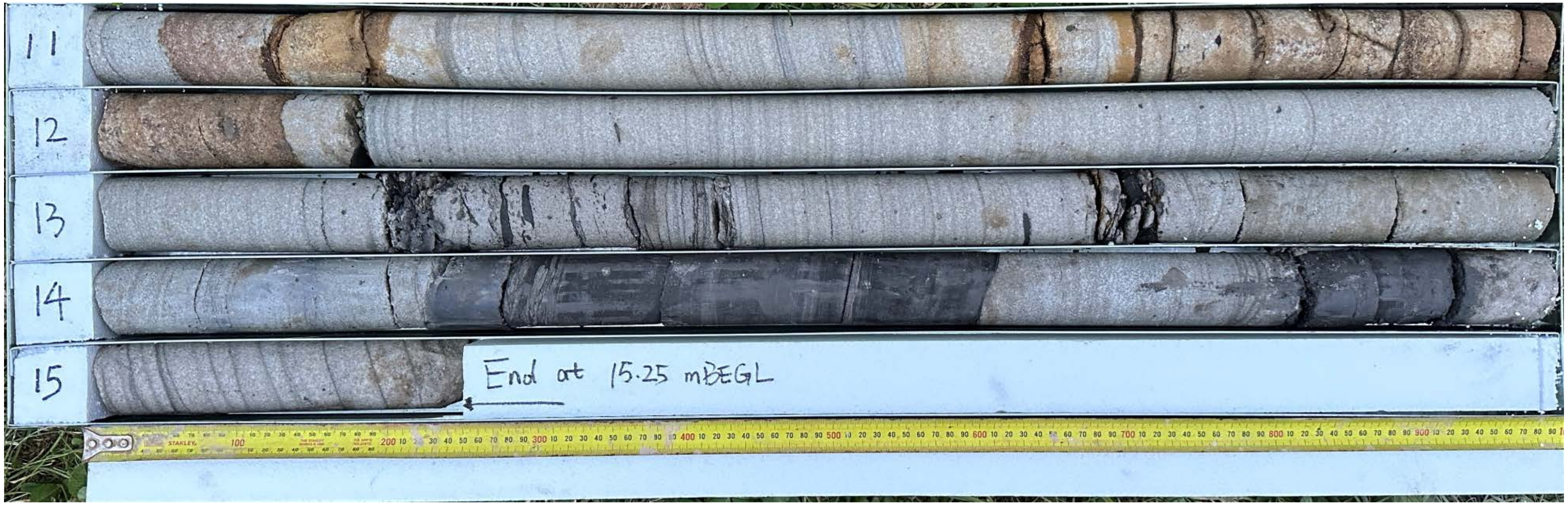
CORE PHOTOGRAPH OF BOREHOLE: BH2M

Project	Proposed Residential Development			**Depth Range**	11.0m to 15.25m BEGL		
Location	Cnr of Hughes Ave & Hope St, Melrose Park NSW			**Contractor**	Matrix Drilling Pty Ltd		
Position	See Figure 2	**Surface RL**	≈ 14.30m (AHD)	**Drill Rig**	Comacchio Geo 405		
Job No.	E26047.G03	**Inclination**	-90°	**Logged**	JC	**Date**	26 / 05 / 2023
Client	PAYCE MP 2 Pty Ltd	**Box**	3 of 3	**Checked**		**Date**	



BOREHOLE LOG

BH ID: BH3M

Location	Cnr of Hughes Ave & Hope St, Melrose Park, NSW	**Started**	26 May 2023		
Client	M Projects	**Completed**	26 May 2023		
Job No.	E26047.E02	**Logged By**	AL	**Date**	26 May 2023
Sheets	1 of 2	**Review By**	SR	**Date**	

Drilling Contractor	Matrix Drilling	**Surface RL**	≈14.20 m (AHD)	**Northing**	-4003882.2609 (MGA 2020 Zone 56)
Plant	Comacchio Geo 405	**Inclination**	90°	**Easting**	16816710.8999 (MGA 2020 Zone 56)

WATER	SAMPLES & FIELD TESTS	DEPTH (m)	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION
GWNE	BH3M_0.2-0.3	0.00	14.20	FILL: Silty CLAY: low to medium plasticity, dark brown, with sub-angular to angular gravels, trace of brick fragments and rootlets, dry, no odour	M < PL
	BH3M_0.7-0.8	0.60	13.60	Silty CLAY: low to medium plasticity, orange red with mottled pale grey, with fine to medium grained ironstone, moist, no odour	
		0.70	13.50	From 0.70m, grading into extremely weathered sandstone	
90% Water		1.00	13.20	SANDSTONE: fine to medium grained, orange to pale grey with ironstaining	

Depth scale: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

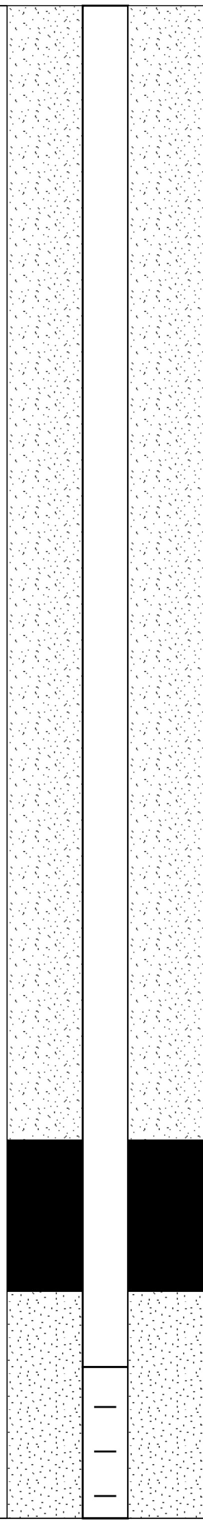
BACKFILL DETAILS

Grout
0.00m - 7.50m

Bentonite
7.50m - 8.50m

STANDPIPE DETAILS

-0.84m - 9.0m
PVC casing (50mm Ø)



BOREHOLE LOG

BH ID: BH3M

Location	Cnr of Hughes Ave & Hope St, Melrose Park, NSW	**Started**	26 May 2023
Client	M Projects	**Completed**	26 May 2023
Job No.	E26047.E02	**Logged By**	AL **Date** 26 May 2023
Sheets	2 of 2	**Review By**	SR **Date**

Drilling Contractor	Matrix Drilling	**Surface RL**	≈14.20 m (AHD)	**Northing**	-4003882.2609 (MGA 2020 Zone 56)
Plant	Comacchio Geo 405	**Inclination**	90°	**Easting**	16816710.8999 (MGA 2020 Zone 56)

WATER	SAMPLES & FIELD TESTS	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION	BACKFILL DETAILS	STANDPIPE DETAILS
90% Water		11, 12, 13			SANDSTONE: fine to medium grained, orange to pale grey with ironstaining		Sand 8.50m - 15.24m	9.0m - 15.0m PVC screen (50mm Ø)
		13.34		0.86	SHALE: dark grey			
		13.60, 14, 15		0.60	SANDSTONE: fine to medium grained, pale grey with shale laminations			
		16, 17, 18, 19, 20		-1.04	Terminated at 15.24m. Target Depth Reached.			

CORE PHOTOGRAPH OF BOREHOLE: BH3M

Project	Proposed Residential Development			**Depth Range**	1.0m to 9.0m BEGL		
Location	Cnr of Hughes Ave & Hope St, Melrose Park NSW			**Contractor**	Matrix Drilling Pty Ltd		
Position	See Figure 2	**Surface RL**	≈ 14.20m (AHD)	**Drill Rig**	Comacchio Geo 405		
Job No.	E26047.G03	**Inclination**	-90°	**Logged**	JC	**Date**	26 / 05 / 2023
Client	PAYCE MP 2 Pty Ltd	**Box**	1-2 of 4	**Checked**		**Date**	

CORE PHOTOGRAPH OF BOREHOLE: BH3M

Project	Proposed Residential Development			**Depth Range**	9.0m to 15.245m BEGL
Location	Cnr of Hughes Ave & Hope St, Melrose Park NSW			**Contractor**	Matrix Drilling Pty Ltd
Position	See Figure 2	**Surface RL**	≈ 14.20m (AHD)	**Drill Rig**	Comacchio Geo 405
Job No.	E26047.G03	**Inclination**	-90°	**Logged**	JC **Date** 26 / 05 / 2023
Client	PAYCE MP 2 Pty Ltd	**Box**	3-4 of 4	**Checked**	**Date**

BOREHOLE LOG

BH ID: BH4

Location	Cnr of Hughes Ave & Hope St, Melrose Park, NSW	**Started**	25 May 2023		
Client	M Projects	**Completed**	25 May 2023		
Job No.	E26047.E02	**Logged By**	JC	**Date**	25 May 2023
Sheets	1 of 4	**Review By**		**Date**	

Drilling Contractor	Geosense Drilling Engineers	**Surface RL**	≈11.50 m (AHD)	**Northing**	-4003910.8797 (MGA 2020 Zone 56)
Plant	Comacchio Geo 205	**Inclination**	90°	**Easting**	16816761.3610 (MGA 2020 Zone 56)

METHOD	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	SAMPLE RECOVERY	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / REL. DENSITY	MATERIAL ORIGIN & OBSERVATIONS
AD/T	GWNE	BH4_0.50-0.82 SPT 0.50-0.82 0,2,5/20 mm HB N=R		0.00		11.50	FILL: Silty CLAY: low to medium plasticity, dark brown, trace of angular to sub-angular gravels and brick fragments	M < PL	-	FILL
				0.70		10.80	Silty CLAY: low to medium plasticity, brown with mottled orange red	M < PL	-	RESIDUAL SOIL
				0.82		10.68				

Log continued on next page.

Depth scale: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

BOREHOLE LOG

BH ID: BH4

Location	Cnr of Hughes Ave & Hope St, Melrose Park, NSW	**Started**	25 May 2023		
Client	M Projects	**Completed**	25 May 2023		
Job No.	E26047.E02	**Logged By**	JC	**Date**	25 May 2023
Sheets	2 of 4	**Review By**		**Date**	

Drilling Contractor	Geosense Drilling Engineers	**Surface RL**	≈11.50 m (AHD)	**Northing**	-4003910.8797 (MGA 2020 Zone 56)
Plant	Comacchio Geo 205	**Inclination**	90°	**Easting**	16816761.3610 (MGA 2020 Zone 56)

Column headings: METHOD | Flush Return | TCR % | RQD % | DEPTH (m) | GRAPHIC LOG | RL (m AHD) | MATERIAL DESCRIPTION | WEATHERING | ESTIMATED STRENGTH Is(50) ▼ - Axial ▽ - Diametral (VL 0-1, L 0-3, M 1, H 3, VH 10, EH) | DISCONTINUITIES & ADDITIONAL DATA | FRACTURE SPACING (30, 100, 300, 1000, 3000)

Log continued from previous page.

Flush Return: 95% Water

DEPTH (m)	RL (m AHD)	MATERIAL DESCRIPTION	WEATHERING
		SANDSTONE: fine to medium grained, brown with mottled pale grey	DW
1.00	10.50	Silty CLAY: medium plasticity, brown with mottled orange red, grading into extremely weathered sandstone	XW
1.30	10.20	SANDSTONE: fine to medium grained, pale grey to orange red	HW - MW
1.62	9.88	NO CORE: 380mm thick	-
2.00	9.50	SANDSTONE: fine to medium grained, pale grey with ironstaining	HW - MW; DW; DW - SW

DISCONTINUITIES & ADDITIONAL DATA:

2.08-2.20: XWZ Silty sand Clay VN

2.43: JT 45° RO Silty sand Clay VN

2.57-2.62: CS CN

4.32: JT 15° RO Silty clay Clay VN

4.55-4.60: XWS Silty clay Clay VN

4.81: CS Crushed sandstone and silty clay

5.85-6.19: JT 30-75° PR RO Fe SN

6.57: JT 45-65° PR RO CN

9.05-9.13: XWS Silty clay

9.62: JT 0° PR RO Fe SN

BOREHOLE LOG

BH ID: BH4

Location	Cnr of Hughes Ave & Hope St, Melrose Park, NSW	**Started**	25 May 2023		
Client	M Projects	**Completed**	25 May 2023		
Job No.	E26047.E02	**Logged By**	JC	**Date**	25 May 2023
Sheets	3 of 4	**Review By**		**Date**	

Drilling Contractor	Geosense Drilling Engineers	**Surface RL**	≈11.50 m (AHD)	**Northing**	-4003910.8797 (MGA 2020 Zone 56)
Plant	Comacchio Geo 205	**Inclination**	90°	**Easting**	16816761.3610 (MGA 2020 Zone 56)

METHOD	Flush Return	TCR %	RQD %	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	WEATHERING	ESTIMATED STRENGTH Is(50) ▼ - Axial ▽ - Diametral (VL 0-1, L 0-3, M 1, H 3, VH 10, EH)	DISCONTINUITIES & ADDITIONAL DATA	FRACTURE SPACING (30, 100, 300, 1000, 3000)
NMLC	95% Water	98	85	10–19.21			SANDSTONE: fine to medium grained, pale grey with ironstaining	SW - FR		10.26: XWS Silty clay Clay VN 13.60-13.68: XWS Clay Clay VN 14.60: XWS Clay Clay VN 16.39: XWS Crushed sandstone and silty clay	
				19.21		-7.71	SHALE: dark grey			19.78-19.82: XWS Clay Clay VN	

Depth scale: 11, 12, 13, 14, 15, 16, 17, 18, 19, 20

This log should be read in conjunction with EI Australia's accompanying explanatory notes.

BOREHOLE LOG

BH ID: BH4

Location	Cnr of Hughes Ave & Hope St, Melrose Park, NSW	**Started**	25 May 2023		
Client	M Projects	**Completed**	25 May 2023		
Job No.	E26047.E02	**Logged By**	JC	**Date**	25 May 2023
Sheets	4 of 4	**Review By**		**Date**	

Drilling Contractor	Geosense Drilling Engineers	**Surface RL**	≈11.50 m (AHD)	**Northing**	-4003910.8797 (MGA 2020 Zone 56)
Plant	Comacchio Geo 205	**Inclination**	90°	**Easting**	16816761.3610 (MGA 2020 Zone 56)

METHOD	Flush Return	TCR %	RQD %	DEPTH (m)	RL (m AHD)	MATERIAL DESCRIPTION	WEATHERING	ESTIMATED STRENGTH Is(50) ▼ - Axial ▽ - Diametral (VL 0-1, L 0-3, M 1, H 3, VH 10, EH)	DISCONTINUITIES & ADDITIONAL DATA	FRACTURE SPACING (30, 100, 300, 1000, 3000)
	95% Water					SHALE: dark grey		M–H		300–1000
				20.50	9.00	SANDSTONE: fine to medium grained, pale grey		M–H		300–1000
				21.85	10.35	SHALE: dark grey		M–H ▼		300–1000
				22.24	10.74	SANDSTONE: fine to medium grained, pale grey with shale laminations		H–VH		300–1000
				22.95	11.45	SHALE: dark grey		H–VH		300–1000
				23.03	11.53	SANDSTONE: fine to medium grained, pale grey		H–VH ▼		300–1000
				25.22	13.72	Terminated at 25.22m. Target Depth Reached.				

This log should be read in conjunction with EI Australia's accompanying explanatory notes.

BOREHOLE LOG

BH ID: BH5

Location	Cnr of Hughes Ave & Hope St, Melrose Park, NSW	**Started**	26 May 2023		
Client	M Projects	**Completed**	26 May 2023		
Job No.	E26047.E02	**Logged By**	JC	**Date**	26 May 2023
Sheets		**Review By**		**Date**	

Drilling Contractor	Geosense Drilling Engineers	**Surface RL**	≈11.50 m (AHD)	**Northing**	-4003962.7583 (MGA 2020 Zone 56)
Plant	Comacchio Geo 205	**Inclination**	90°	**Easting**	16816720.0726 (MGA 2020 Zone 56)

METHOD	GROUND WATER LEVELS	SAMPLES & FIELD TESTS	SAMPLE RECOVERY	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY / REL. DENSITY	MATERIAL ORIGIN & OBSERVATIONS
AD/T	GWNE			0.00		11.50	CONCRETE: 100mm thick	-	-	CONCRETE
				0.10		11.40	FILL: Silty CLAY: low to medium plasticity, dark brown, with sub-angular to angular gravels, trace of brick fragments and rootlets	M < PL	-	FILL
		BH5_0.50-0.70 SPT 0.50-0.70 2,3/50 mm HB N=R		0.30		11.20	Silty CLAY: low to medium plasticity, orange red with mottled pale grey, with fine to medium grained ironstone	M < PL	-	RESIDUAL SOIL
				0.70		10.80				

Log continued on next page.

Depth scale: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

BOREHOLE LOG

BH ID: BH5

Location	Cnr of Hughes Ave & Hope St, Melrose Park, NSW	**Started**	26 May 2023		
Client	M Projects	**Completed**	26 May 2023		
Job No.	E26047.E02	**Logged By**	JC	**Date**	26 May 2023
Sheets	2 of 3	**Review By**		**Date**	

Drilling Contractor	Geosense Drilling Engineers	**Surface RL**	≈11.50 m (AHD)	**Northing**	-4003962.7583 (MGA 2020 Zone 56)
Plant	Comacchio Geo 205	**Inclination**	90°	**Easting**	16816720.0726 (MGA 2020 Zone 56)

METHOD	Flush Return	TCR %	RQD %	DEPTH (m)	GRAPHIC LOG	RL (m AHD)	MATERIAL DESCRIPTION	WEATHERING	ESTIMATED STRENGTH Is(50) ▼ - Axial ▽ - Diametral (VL 0-1, L 0-3, M 1, H 3, VH 10, EH)	DISCONTINUITIES & ADDITIONAL DATA	FRACTURE SPACING (30, 100, 300, 1000, 3000)
				0			*Log continued from previous page.*				
NMLC	95% Water	100	90	0.7			SANDSTONE: fine to medium grained, pale grey with ironstaining	DW		1.86: JT 15° PR RO CN	
	0% Water									3.34-3.38: JT 15° PR RO Silty clay angular sandstone fragments Clay VN	
				3.43				DW - SW		5.77: JT 15° PR RO Silty clay Infilled	
				6.38						6.52: XWS Silty clay	
										9.59: JT 30° PR RO CN	
				10							

BOREHOLE LOG

BH ID: BH5

Location	Cnr of Hughes Ave & Hope St, Melrose Park, NSW	**Started**	26 May 2023		
Client	M Projects	**Completed**	26 May 2023		
Job No.	E26047.E02	**Logged By**	JC	**Date**	26 May 2023
Sheets	3 of 3	**Review By**		**Date**	

Drilling Contractor	Geosense Drilling Engineers	**Surface RL**	≈11.50 m (AHD)	**Northing**	-4003962.7583 (MGA 2020 Zone 56)
Plant	Comacchio Geo 205	**Inclination**	90°	**Easting**	16816720.0726 (MGA 2020 Zone 56)

METHOD	Flush Return	TCR %	RQD %	DEPTH (m)	RL (m AHD)	MATERIAL DESCRIPTION	WEATHERING	ESTIMATED STRENGTH Is(50) ▼ - Axial ▽ - Diametral (VL 0-1, L 0-3, M 1, H 3, VH 10, EH)	DISCONTINUITIES & ADDITIONAL DATA	FRACTURE SPACING (30, 100, 300, 1000, 3000)
	0% Water					SANDSTONE: fine to medium grained, pale grey with ironstaining	SW - FR	▼	11.45: XWS Silty clay Clay VN	
				13.77	-2.27	SHALE: dark grey				
				13.83	-2.33	SANDSTONE: fine to medium grained, pale grey to brown, with shale laminations		▼	14.65: JT 15° PR RO Silty clay and sandstone fragments Infilled 15.00-15.31: FZ 75-90° IR RO CN	
				15.31	-3.81	Terminated at 15.31m. Target Depth Reached.				

Depth scale: 11, 12, 13, 14, 15, 16, 17, 18, 19, 20

Appendix F –Field Data Sheets

WATER SAMPLING FIELD SHEET

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Site Address:	19 Hope Street Melrose Park	Job Number:	E26047
Client:		Date:	31/5/23
Field Staff:	AC	Sampling Location ID	BH1M
Well Location:		Round No:	

MEDIUM ☑Groundwater ☐Surface Water ☐Stormwater ☐Other:

SAMPLING POINT INFO

Well Installation Date:		Stick up / down (m):	+1 (+ above ground - below ground)
Initial Well Depth (mBTOC):		Screen Interval (mBTOC):	9
Previous Sampling Date:		Previous SWL (mBTOC):	

PID READINGS

PID Headspace (ppm):	0	PID Background (ppm):	0
PID Breathing Space (ppm):	0		

PRE PURGE

Total Well Depth (mBTOC):	16	Well Head Condition:	Good
SWL (mBTOC):	1.92	Water Column (m):	14.08

PHASE SEPARATED HYDROCARBONS (PSH)

Depth to PSH (mBTOC):		PSH Visually Confirmed (Bailer):	
PSH Thickness (mm):			

Field Filtered

Yes (0.45 µm) ☑ No ☐ (Request lab 0.45 µm filter the sample)

PURGE AND SAMPLE

Sampling Method ☐Bladder ☑Peristaltic ☐Submersible ☐Other:

Depth of Pump Inlet (mBTOC):	9	Fill Timer:	
Pump Pressure Regulator (psi):		Discharge Timer:	
Weather Conditions:		Cycle:	
Pump on time:	10:28	Pump off time:	11:10

WATER QUALITY PARAMETERS

Probe Make and Model: Bump Test Date and Time:

Time	Volume (L)	SWL (mbtoc)	Temp (°C)	EC (µS/cm)	Redox (mV)	DO (mg/L)	pH (units)	Comments (colour, turbidity, odour, sheen etc.)
10:30	0.5	2.09	19.27	2015	-290.5	12.3	12.81	clear, low turbidity, No Odour, No Sheen
10:35	1	2.34	19.41	1662	-274.5	0.13	12.61	
10:40	1.5	2.7	19.76	1684	-282.4	0.09	12.65	
10:45	2	2.79	19.82	1683	-284.1	0.12	12.69	
10:50	2.5	2.88	19.87	1673	-284.3	0.15	12.69	
Stabilisation range: 3 consecutive readings			±0.2°C	±3%	±20mV	±10%	±0.2	

OTHER COMMENTS/OBSERVATIONS: Pump inlet at maximum depth due to pump limitations

QD/QT

SIGNATURE:

WATER SAMPLING FIELD SHEET

eiaustralia

Site Address:	19 Hope Street Melrose Park	Job Number:	E26047
Client:		Date:	31/5/23
Field Staff:	AC	Sampling Location ID	BH2M
Well Location:		Round No:	

MEDIUM ☒Groundwater ☐Surface Water ☐Stormwater ☐Other:

SAMPLING POINT INFO

Well Installation Date:		Stick up / down (m):	+1 (+ above ground - below ground)
Initial Well Depth (mBTOC):		Screen Interval (mBTOC):	9
Previous Sampling Date:		Previous SWL (mBTOC):	

PID READINGS

PID Headspace (ppm):	0	PID Background (ppm):	0
PID Breathing Space (ppm):	0		

PRE PURGE

Total Well Depth (mBTOC):	16	Well Head Condition:	Good
SWL (mBTOC):	4.96	Water Column (m):	11.04

PHASE SEPARATED HYDROCARBONS (PSH)

Depth to PSH (mBTOC):		PSH Visually Confirmed (Bailer):	
PSH Thickness (mm):			

Field Filtered

Yes (0.45 µm) ☒ No ☐ (Request lab 0.45 µm filter the sample)

PURGE AND SAMPLE

Sampling Method ☐Bladder ☒Peristaltic ☐Submersible ☐Other:

Depth of Pump Inlet (mBTOC):	9	Fill Timer:	
Pump Pressure Regulator (psi):		Discharge Timer:	
Weather Conditions:		Cycle:	
Pump on time:	11:25	Pump off time:	11:40

WATER QUALITY PARAMETERS

Probe Make and Model: Bump Test Date and Time:

Time	Volume (L)	SWL (mbtoc)	Temp (°C)	EC (µS/cm)	Redox (mV)	DO (mg/L)	pH (units)	Comments (colour, turbidity, odour, sheen etc.)
11:30	0.5	3.6	20.25	2662	-271	2.37	12.54	clear, low turbidity, No odour, No sheen
11:35	1	3.9	20.28	2663	-272.8	0.67	12.48	
11:40	1.5	4.1	20.20	2863	-274	0.64	12.5	
11:45	2	4.2	20.23	2875	-275.3	0.64	12.51	
11:50	2.5	4.4	20.33	2921	-274.6	0.67	12.49	
Stabilisation range: 3 consecutive readings			±0.2°C	±3%	±20mV	±10%	±0.2	

OTHER COMMENTS/OBSERVATIONS: Pump inlet at maximum depth due to pump limitations

SIGNATURE:

WATER SAMPLING FIELD SHEET

eiaustralia

Site Address:	19 Hope Street Melrose Park	Job Number:	E26047
Client:		Date:	31/5/23
Field Staff:	AC	Sampling Location ID	BH3M
Well Location:		Round No:	

MEDIUM ☒Groundwater ☐Surface Water ☐Stormwater ☐Other:

SAMPLING POINT INFO

Well Installation Date:		Stick up / down (m):	+1 (+ above ground - below ground)
Initial Well Depth (mBTOC):		Screen Interval (mBTOC):	9m
Previous Sampling Date:		Previous SWL (mBTOC):	

PID READINGS

PID Headspace (ppm):	0	PID Background (ppm):	0
PID Breathing Space (ppm):	0		

PRE PURGE

Total Well Depth (mBTOC):	16	Well Head Condition:	good
SWL (mBTOC):	2.9	Water Column (m):	13.1

PHASE SEPARATED HYDROCARBONS (PSH)

Depth to PSH (mBTOC):		PSH Visually Confirmed (Bailer):	
PSH Thickness (mm):			

Field Filtered

Yes (0.45 µm) ☒ No ☐ (Request lab 0.45 µm filter the sample)

PURGE AND SAMPLE

Sampling Method ☐Bladder ☒Peristaltic ☐Submersible ☐Other:

Depth of Pump Inlet (mBTOC):	9m	Fill Timer:	
Pump Pressure Regulator (psi):		Discharge Timer:	
Weather Conditions:		Cycle:	
Pump on time:	12:03	Pump off time:	12:40

WATER QUALITY PARAMETERS

Probe Make and Model: Bump Test Date and Time:

Time	Volume (L)	SWL (mbtoc)	Temp (°C)	EC (µS/cm)	Redox (mV)	DO (mg/L)	pH (units)	Comments (colour, turbidity, odour, sheen etc.)
12:10	0.5	4.99	19.19	362	-246.5	2.39	11.9	clear, low turbidity, No odour, No Sheen
12:15	1	5.08	19.47	263	-220.4	0.51	11.46	
12:20	1.5	5.17	19.57	258	-217.1	0.34	11.4	
12:25	2	5.24	19.56	256	-215.8	0.29	11.38	
12:30	2.5	5.29	19.58	254	-214.1	0.26	11.36	
Stabilisation range: 3 consecutive readings			±0.2°C	±3%	±20mV	±10%	±0.2	

OTHER COMMENTS/OBSERVATIONS: Pump inlet at maximum depth due to pump limitation

SIGNATURE:

Appendix G – Chain of Custody and Sample Receipt Documentation

SGS EHS Sydney COC

SE248200

Sheet 1 of 3

Site: 19 Hope Street, Melrose Park

Project No: E26047

Laboratory: **SGS Australia**
Unit 16, 33 Maddox Street,
ALEXANDRIA NSW 2015
P: 02 8594 0400 F: 02 8594 0499

Analysis

Sample ID	Laboratory ID	Container Type	Sampling Date	Sampling Time	SOIL	WATER	0.45 µm field filtered	OTHER	HM ^A /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM ^A /TRH/BTEX/PAHs	HM ^A /TRH/BTEX	BTEX	VOCs	~~Asbestos~~ Cyanide	Asbestos Quantification	Excavated Natural Material (ENM) Suite	ENM Suite - Stockpile discrete (TRH/BTEX/PAHs)	ENM Suite - Stockpile composite (HM ^A /pH / EC / Foreign Materials)	~~Dewatering Suite~~ Phenols	pH / pH peroxide	sPOCAS	Chromium Reducible Sulfur (CrS)	PFAS	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	Sulphate / Chloride	Lead	TCLP HM ^B / PAH
BH1M_0.2-0.5	1	PF/S/ZLB	25/5/23	AM	X				X				X		X				X				X					
BH2M-0.2-0.5	2		-	AM					X				X		X				X				X					
BH3M-0.2-0.5	3		26/5/23	AM					X				X		X				X				X					
BH4_0.2-0.5	4		25/5/23	PM					X				X		X				X				X					
BH5_0.2-0.5	5		26/5/23	AM					X				X		X				X				X					
TP1-0.2-0.5	6			AM					X				X		X				X									
TP2-0.2-0.5	7								X				X		X				X									
TP3_0.2-0.5	8								X				X		X				X				X					
TP4_0.2-0.5																												
TP5_0.2-0.5																												
TP6_0.2-0.5	9								X				X		X				X				X					

Comments

HM ^A
Arsenic
Cadmium
Chromium
Copper
Lead
Mercury
Nickel
Zinc

HM ^B
Arsenic
Cadmium
Chromium
Lead
Mercury
Nickel

Dewatering Suite
pH & EC
TDS / TDU
Hardness
Total Cyanide
Metals (Al, As, Cd, Cr, Cu, Pb, Hg, Ni, Zn)
TRH (F1, F2, F3, F4)
BTEX
PAH
Total Phenol

LABORATORY TURNAROUND

- [X] Standard
- [ ] 24 Hours
- [ ] 48 Hours
- [ ] 72 Hours
- [ ] Other____

Container Type:
J = solvent washed, acid rinsed, Teflon sealed glass jar
S = solvent washed, acid rinsed glass bottle
P = natural HDPE plastic bottle
VC = glass vial, Teflon Septum
ZLB = Zip-Lock Bag BB = Bulk Bag

PF: PFAS jar

Investigator: I attest that these samples were collected in accordance with standard EI field sampling procedures.

Report with EI Waste Classification Table [X]

Sampler's Name (EI):	Received by (SGS):
Print: Antony Lo	Print:
Signature: [signature]	Signature: [signature]
Date: 29/5/23	Date: 26/05/23 @ 3:05

Sampler's Comments:
1) Please cc Sergio
2) Trip blank and trip spike to be delivered today

eiaustralia
Contamination | Remediation | Geotechnical

Suite 6.01, 55 Miller Street,
PYRMONT NSW 2009
Ph: 9516 0722
lab@eiaustralia.com.au

COC June 2021 FORM v.5 - SGS

IMPORTANT:
Please e-mail laboratory results to: lab@eiaustralia.com.au

Sheet 2 of 3		Project No: E26047
Site: 19 Hope Street, Melrose Park		
Laboratory:	SGS Australia Unit 16, 33 Maddox Street, ALEXANDRIA NSW 2015 P: 02 8594 0400 F: 02 8594 0499	

Sample ID	Laboratory ID	Container Type	Sampling Date	Sampling Time	SOIL	WATER	0.45 µm field filtered	OTHER	HM^A /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM^A /TRH/BTEX/PAHs	HM^A /TRH/BTEX	BTEX	VOCs	~~Asbestos~~ CYANIDE; PHENOLS	Asbestos Quantification	Excavated Natural Material (ENM) Suite	ENM Suite - Stockpile discrete (TRH/BTEX/PAHs)	ENM Suite - Stockpile composite (HM^A /pH / EC / Foreign Materials)	Dewatering Suite	pH / pH peroxide	~~sPOCAS~~ HOLD	Chromium Reducible Sulfur (CrS)	PFAS	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	Sulphate / Chloride	Lead	TCLP HM^B / PAH
HA1_0.2-0.3		PF/S/ZLB	25/5/23	AM	X				X												X							
HA2_0.2-0.3																					X							
HA3_0.2-0.3	10		26/5/23	PM					X				X	X														
BH1M_0.7-0.8	11	J/ZLB	25/5/23	AM																X								
BH2M-0.7-0.8	12			PM						X			X	X						X								
BH3M_0.7-0.8	13		26/5/23	AM						X			X	X						X								
BH4_0.7-0.8	14		25/5/23	PM						X			X	X						X								
BH5_0.7-0.8	15		26/5/23	AM						X			X	X														
TP1_0.7-0.8	16									X			X	X														
TP2_0.7-0.8	17									X			X	X														
TP3_0.7-0.8	18																			X								
TP4-0.7-0.8	19									X			X	X														

Comments

HM^A: Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Zinc

HM^B: Arsenic, Cadmium, Chromium, Lead, Mercury, Nickel

Dewatering Suite: pH & EC, TDS / TDU, Hardness, Total Cyanide, Metals (Al, As, Cd, Cr, Cu, Pb, Hg, Ni, Zn), TRH (F1, F2, F3, F4), BTEX, PAH, Total Phenol

LABORATORY TURNAROUND

- [X] Standard
- [ ] 24 Hours
- [ ] 48 Hours
- [ ] 72 Hours
- [ ] Other______

Container Type:
J = solvent washed, acid rinsed, Tefton sealed glass jar
S = solvent washed, acid rinsed glass bottle
P = natural HDPE plastic bottle
VC = glass vial, Tefton Septum
ZLB = Zip-Lock Bag BB = Bulk Bag

PF: PFAS Jar

Investigator: I attest that these samples were collected in accordance with standard EI field sampling procedures.

Report with EI Waste Classification Table [X]

Sampler's Name (EI):	Received by (SGS):
Print Antony Lo	Print
Signature	Signature
Date 29/5/23	Date 26/05/23 @3.05

Sampler's Comments:

IMPORTANT:
Please e-mail laboratory results to: lab@eiaustralia.com.au

eiaustralia
Contamination | Remediation | Geotechnical

Suite 6.01, 55 Miller Street,
PYRMONT NSW 2009
Ph: 9516 0722
lab@eiaustralia.com.au

COC June 2021 FORM v.5 - SGS

Sheet 3 of 3

Site: 19 Hope Street, Melrose Park

Project No: E26047

Laboratory: SGS Australia
Unit 16, 33 Maddox Street,
ALEXANDRIA NSW 2015
P: 02 8594 0400 F: 02 8594 0499

Sample ID	Laboratory ID	Container Type	Sampling Date	Sampling Time	SOIL	WATER	0.45 µm field filtered	OTHER	HM^A /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM^A /TRH/BTEX/PAHs	HM^A /TRH/BTEX	BTEX	VOCs	~~Asbestos~~ cyanide & phenols	Asbestos Quantification	Excavated Natural Material (ENM) Suite	ENM Suite - Stockpile discrete (TRH/BTEX/PAHs)	ENM Suite - Stockpile composite (HM^A /pH / EC / Foreign Materials)	Dewatering Suite	pH / pH peroxide	sPOCAS	Chromium Reducible Sulfur (CrS)	PFAS	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	Sulphate / Chloride	Lead	TCLP HM^B / PAH
TP5_0.7-0.8	20	S/ZLB	26/5/23	AM	X															X								
TP6_0.7-08	21		26/5/23	AM																X								
HA2-0.7-08			25/5/23	AM																								
HA3-0.7-08	22		26/5/23	PM																X								
BH1M_1.2-1.3	23		25/5/23	AM						X			X	X						X								
TP3-1.2-1.3	24	✓	26/5/23	AM	✓															X								
Trip blank	25		[illegible]									X																
Trip Spike	26	✓			✓							X																

Comments

HM^A: Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Zinc

HM^B: Arsenic, Cadmium, Chromium, Lead, Mercury, Nickel

Dewatering Suite: pH & EC, TDS / TDU, Hardness, Total Cyanide, Metals (Al, As, Cd, Cr, Cu, Pb, Hg, Ni, Zn), TRH (F1, F2, F3, F4), BTEX, PAH, Total Phenol

LABORATORY TURNAROUND

- [X] Standard
- [ ] 24 Hours
- [ ] 48 Hours
- [ ] 72 Hours
- [ ] Other____

Container Type:
J = solvent washed, acid rinsed, Tefton sealed glass jar
S = solvent washed, acid rinsed glass bottle
P = natural HDPE plastic bottle
VC = glass vial, Tefton Septum
ZLB = Zip-Lock Bag BB = Bulk Bag

Investigator: I attest that these samples were collected in accordance with standard EI field sampling procedures.

Report with EI Waste Classification Table [X]

Sampler's Name (EI):	Received by (SGS):
Print: Antony Lo	Print:
Signature: [signature]	Signature: B. Subaray
Date: 26/5/23	Date: 26/05/23 @ 3:05

Sampler's Comments:

IMPORTANT:
Please e-mail laboratory results to: lab@eiaustralia.com.au

eiaustralia
Contamination | Remediation | Geotechnical

Suite 6.01, 55 Miller Street,
PYRMONT NSW 2009
Ph: 9516 0722
lab@eiaustralia.com.au

COC June 2021 FORM v.5 - SGS

SAMPLE RECEIPT ADVICE

SE248200

CLIENT DETAILS		LABORATORY DETAILS	
Contact	Sergio Raposeira	Manager	Huong Crawford
Client	EI AUSTRALIA	Laboratory	SGS Alexandria Environmental
Address	SUITE 6.01 55 MILLER STREET PYRMONT NSW 2009	Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	61 2 95160722	Telephone	+61 2 8594 0400
Facsimile	(Not specified)	Facsimile	+61 2 8594 0499
Email	sergio.raposeira@eiaustralia.com.au	Email	au.environmental.sydney@sgs.com
Project	**E26047 19 Hope Street Melrose Park**	Samples Received	Fri 26/5/2023
Order Number	**E26047**	Report Due	Fri 2/6/2023
Samples	26	SGS Reference	**SE248200**

SUBMISSION DETAILS

This is to confirm that 26 samples were received on Friday 26/5/2023. Results are expected to be ready by COB Friday 2/6/2023. Please quote SGS reference SE248200 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	26 Soil	Type of documentation received	COC
Date documentation received	26/5/2023	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	11.5°C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

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

COMMENTS

PFAS subcontracted to SGS Melbourne, 10/585 Blackburn Road, Notting Hill, VIC, NATA Accreditation Number. 2562/14420. Report No.
5 Soil samples have been placed on hold as no tests have been assigned for them by the client. These samples will not be processed.
TP4_1.2-1.3 - extra sample received.
FM1 and FM2 - 2 extra material sample received.

SAMPLE RECEIPT ADVICE

SE248200

CLIENT DETAILS

Client EI AUSTRALIA

Project E26047 19 Hope Street Melrose Park

SUMMARY OF ANALYSIS

No.	Sample ID	OC Pesticides in Soil	OP Pesticides in Soil	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	PCBs in Soil	Total Phenolics in Soil	TRH (Total Recoverable Hydrocarbons) in Soil	VOC's in Soil	Volatile Petroleum Hydrocarbons in Soil
001	BH1M_0.2-0.3	30	14	26	11	1	10	79	7
002	BH2M_0.2-0.3	30	14	26	11	1	10	79	7
003	BH3M_0.2-0.3	30	14	26	11	1	10	79	7
004	BH4_0.2-0.3	30	14	26	11	1	10	79	7
005	BH5_0.2-0.3	30	14	26	11	1	10	79	7
006	TP1_0.2-0.3	30	14	26	11	1	10	79	7
007	TP2_0.2-0.3	30	14	26	11	1	10	79	7
008	TP3_0.2-0.3	30	14	26	11	1	10	79	7
009	TP6_0.2-0.3	30	14	26	11	1	10	79	7
010	HA3_0.2-0.3	30	14	26	11	1	10	79	7
012	BH2M_0.7-0.8	-	-	26	-	1	10	79	7
013	BH3M_0.7-0.8	-	-	26	-	1	10	79	7
014	BH4_0.7-0.8	-	-	26	-	1	10	79	7
015	BH5_0.7-0.8	-	-	26	-	1	10	79	7
016	TP1_0.7-0.8	-	-	26	-	1	10	79	7
017	TP2_0.7-0.8	-	-	26	-	1	10	79	7
019	TP4_0.7-0.8	-	-	26	-	1	10	79	7
023	BH1M_1.2-1.3	-	-	26	-	1	10	79	7

CONTINUED OVERLEAF

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

SAMPLE RECEIPT ADVICE

SE248200

CLIENT DETAILS

Client EI AUSTRALIA

Project E26047 19 Hope Street Melrose Park

SUMMARY OF ANALYSIS

No.	Sample ID	VOC's in Soil
025	Trip Blank	11
026	Trip Spike	11

CONTINUED OVERLEAF

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

SAMPLE RECEIPT ADVICE

SE248200

CLIENT DETAILS

Client EI AUSTRALIA

Project E26047 19 Hope Street Melrose Park

SUMMARY OF ANALYSIS

No.	Sample ID	Fibre Identification in soil	Gravimetric Determination of Asbestos in Soil	Mercury in Soil	Moisture Content	Per- and Polyfluoroalkyl Substances (PFAS) in	Total Cyanide in soil by Discrete Analyser	Total Recoverable Elements in Soil/Waste
001	BH1M_0.2-0.3	2	9	1	1	59	-	7
002	BH2M_0.2-0.3	2	9	1	1	59	-	7
003	BH3M_0.2-0.3	2	9	1	1	59	-	7
004	BH4_0.2-0.3	2	9	1	1	59	-	7
005	BH5_0.2-0.3	2	9	1	1	59	-	7
006	TP1_0.2-0.3	2	9	1	1	-	-	7
007	TP2_0.2-0.3	2	9	1	1	-	-	7
008	TP3_0.2-0.3	2	9	1	1	59	-	7
009	TP6_0.2-0.3	2	9	1	1	59	-	7
010	HA3_0.2-0.3	2	-	1	1	-	1	7
012	BH2M_0.7-0.8	-	-	1	1	-	1	7
013	BH3M_0.7-0.8	-	-	1	1	-	1	7
014	BH4_0.7-0.8	-	-	1	1	-	1	7
015	BH5_0.7-0.8	-	-	1	1	-	1	7
016	TP1_0.7-0.8	-	-	1	1	-	1	7
017	TP2_0.7-0.8	-	-	1	1	-	1	7
019	TP4_0.7-0.8	-	-	1	1	-	1	7
023	BH1M_1.2-1.3	-	-	1	1	-	1	7

CONTINUED OVERLEAF

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

CLIENT DETAILS

Client EI AUSTRALIA

Project E26047 19 Hope Street Melrose Park

SUMMARY OF ANALYSIS

No.	Sample ID	Moisture Content
025	Trip Blank	1

CONTINUED OVERLEAF

SAMPLE RECEIPT ADVICE

SE248200

CLIENT DETAILS

Client: EI AUSTRALIA

Project: E26047 19 Hope Street Melrose Park

SUMMARY OF ANALYSIS

No.	Sample ID	Field pH for Acid Sulphate Soil
011	BH1M_0.7-0.8	4
012	BH2M_0.7-0.8	4
013	BH3M_0.7-0.8	4
014	BH4_0.7-0.8	4
018	TP3_0.7-0.8	4
020	TP5_0.7-0.8	4
021	TP6_0.7-0.8	4
022	HA3_0.7-0.8	4
023	BH1M_1.2-1.3	4
024	TP3_1.2-1.3	4

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

Ming To

From: Antony Lo - EIAustralia <antony.lo@eiaustralia.com.au>
Sent: Monday, 19 June 2023 11:34 AM
To: Ming To; Samplereceipt; Customer Service
Cc: Sergio Raposeira - EIAustralia; Laboratory Results - EIAustralia
Subject: RE: Sample Receipt for 324760 E26047, Melrose Park

CAUTION: This email originated from outside of the organisation. Do not act on instructions, click links or open attachments unless you recognise the sender and know the content is authentic and safe.

Ref: 324760-A
TAT: 3 day.
Due: 22/06/2023
MT

Hi Envirolab team,

Can we please have these samples tested for heavy metals on a 3 day TAT

Kind regards,

Antony Lo
BEnvMgmt
Environmental Engineer

T 02 9516 0722
E antony.lo@eiaustralia.com.au

Suite 6.01, 55 Miller Street
Pyrmont, NSW 2009

www.eiaustralia.com.au

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From: Ming To [mailto:MTo@envirolab.com.au]
Sent: Monday, 5 June 2023 5:54 PM
To: Sergio Raposeira - EIAustralia; Laboratory Results - EIAustralia
Cc: Antony Lo - EIAustralia
Subject: RE: Sample Receipt for 324760 E26047, Melrose Park

> **Caution:** This email originated from outside your organization and might have suspicious subject or content. PLEASE DO NOT CLICK ANY LINKS AND\OR OPEN ANY ATTACHEMENTS UNLESS YOU CAN CONFIRM THE SENDER.

Hi Sergio,

Apologies this on hold SRA was sent by accident while updating the testing per COC received today.
Update SRA will be sent to you when ready.

Kind Regards,

Ming To | Customer Service | Envirolab Services

Great Science. Great Service.

12 Ashley Street Chatswood NSW 2067

Ming To

From:	Antony Lo - ElAustralia <antony.lo@eiaustralia.com.au>
Sent:	Monday, 19 June 2023 11:43 AM
To:	Ming To; Samplereceipt; Customer Service
Cc:	Sergio Raposeira - ElAustralia; Laboratory Results - ElAustralia
Subject:	RE: Sample Receipt for 324760 E26047, Melrose Park

324760-A

CAUTION: This email originated from outside of the organisation. Do not act on instructions, click links or open attachments unless you recognise the sender and know the content is authentic and safe.

Thank you,

Can you please also include TRH as well for this job.

Kind regards,

Antony Lo
BEnvMgmt
Environmental Engineer

T 02 9516 0722
E antony.lo@eiaustralia.com.au

Suite 6.01, 55 Miller Street
Pyrmont, NSW 2009

www.eiaustralia.com.au

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Practical Solutions for Built Environments

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From: Ming To [mailto:MTo@envirolab.com.au]
Sent: Monday, 19 June 2023 11:36 AM
To: Antony Lo - EIAustralia; Samplereceipt; Customer Service
Cc: Sergio Raposeira - EIAustralia; Laboratory Results - EIAustralia
Subject: RE: Sample Receipt for 324760 E26047, Melrose Park

> **Caution:** This email originated from outside your organization and might have suspicious subject or content. PLEASE DO NOT CLICK ANY LINKS AND\OR OPEN ANY ATTACHEMENTS UNLESS YOU CAN CONFIRM THE SENDER.

Hi Antony,

No problem, we can get that organised for you.

Kind Regards,

Ming To | Customer Service | Envirolab Services

Great Science. Great Service.

12 Ashley Street Chatswood NSW 2067
T 612 9910 6200

E-MAILED 1/6/23 @ 3:08 pm

Sheet _1_ of _1_

Site: 19 Hope Street, Melrose Park

Project No: E26047

Laboratory: **SGS Australia**
Unit 16, 33 Maddox Street,
ALEXANDRIA NSW 2015
P: 02 8594 0400 F: 02 8594 0499

Sample ID	Laboratory ID	Container Type	Sampling Date	Sampling Time	SOIL	WATER	0.45 µm field filtered	OTHER	HM [A] /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM [A] /TRH/BTEX/PAHs	HM [A] /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification	Excavated Natural Material (ENM) Suite	ENM Suite - Stockpile discrete (TRH/BTEX/PAHs)	ENM Suite - Stockpile composite (HM [A] /pH / EC / Foreign Materials)	Dewatering Suite	pH / pH peroxide	sPOCAS	Chromium Reducible Sulfur (CrS)	PFAS + Cyanide	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	Sulphate / Chloride	Lead	TCLP HM [B] / PAH
GW BH1M	1	S/P/LL/LP	31/5/23	AM		X	X			X			X						X				X					
GW BH2M	2	↓	↓	↓		↓	↓			↓			↓						↓				↓					
GW BH3M	3	↓	↓	↓		↓	↓			↓			↓						↓				↓					
QD1	4	S/P/VC	↓	↓		↓	↓				X																	
Trip blank	5		↓	↓		↓						X																
Trip spike	6		↓	↓		↓						X																

Comments

HM [A]: Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Zinc

HM [B]: Arsenic, Cadmium, Chromium, Lead, Mercury, Nickel

Dewatering Suite: pH & EC, TDS / TDU, Hardness, Total Cyanide, Metals (Al, As, Cd, Cr, Cu, Pb, Hg, Ni, Zn), TRH (F1, F2, F3, F4), BTEX, PAH, Total Phenol

LABORATORY TURNAROUND

- [x] Standard
- [ ] 24 Hours
- [ ] 48 Hours
- [ ] 72 Hours
- [ ] Other____

SGS EHS Sydney COC
SE248519

Container Type:
J = solvent washed, acid rinsed, Tefton sealed glass jar
S = solvent washed, acid rinsed glass bottle
P = natural HDPE plastic bottle
VC = glass vial, Tefton Septum
ZLB = Zip-Lock Bag BB = Bulk Bag

LP: Large plastic bottle 500mL

Investigator: I attest that these samples were collected in accordance with standard EI field sampling procedures.

Report with EI Waste Classification Table ☐

Sampler's Name (EI):	Received by (SGS):
Print: Antony Lo	Print: Van L
Signature: [signature]	Signature: [signature]
Date: 1/6/23	Date: 31/5/23 ~~14:40~~ 16:15

Sampler's Comments:
1) Please send QT1 to envirolab
2) Please CC Sergio

IMPORTANT:
Please e-mail laboratory results to: lab@eiaustralia.com.au

eiaustralia
Contamination | Remediation | Geotechnical

Suite 6.01, 55 Miller Street,
PYRMONT NSW 2009
Ph: 9516 0722
lab@eiaustralia.com.au

SAMPLE RECEIPT ADVICE

SE248519

CLIENT DETAILS

Contact	Sergio Raposeira
Client	EI AUSTRALIA
Address	SUITE 6.01 55 MILLER STREET PYRMONT NSW 2009
Telephone	61 2 95160722
Facsimile	(Not specified)
Email	sergio.raposeira@eiaustralia.com.au
Project	**E26047 19 Hope Street, Melrose Park**
Order Number	**E26047**
Samples	6

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
Samples Received	Wed 31/5/2023
Report Due	Thu 8/6/2023
SGS Reference	**SE248519**

SUBMISSION DETAILS

This is to confirm that 6 samples were received on Wednesday 31/5/2023. Results are expected to be ready by COB Thursday 8/6/2023.
Please quote SGS reference SE248519 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	6 Water	Type of documentation received	COC
Date documentation received	1/6/2023@3:08pm	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	17.2C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

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

COMMENTS

PFAS subcontracted to SGS Melbourne, 10/585 Blackburn Road, Notting Hill, VIC, NATA Accreditation Number. 2562/14420. Report No.

SAMPLE RECEIPT ADVICE

SE248519

CLIENT DETAILS

Client EI AUSTRALIA

Project E26047 19 Hope Street, Melrose Park

SUMMARY OF ANALYSIS

No.	Sample ID	Conductivity and TDS by Calculation - Water	PAH (Polynuclear Aromatic Hydrocarbons) in Water	pH in water	Total Dissolved Solids (TDS) in water	Total Phenolics in Water	TRH (Total Recoverable Hydrocarbons) in Water	VOCs in Water	Volatile Petroleum Hydrocarbons in Water
001	GWBH1M	1	23	1	1	1	9	77	7
002	GWBH2M	1	23	1	1	1	9	77	7
003	GWBH3M	1	23	1	1	1	9	77	7
004	QD1	-	-	-	-	-	9	11	7
005	Trip blank	-	-	-	-	-	-	11	-
006	Trip Spike	-	-	-	-	-	-	11	-

CONTINUED OVERLEAF

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

SGS

SAMPLE RECEIPT ADVICE

SE248519

CLIENT DETAILS

Client EI AUSTRALIA

Project E26047 19 Hope Street, Melrose Park

SUMMARY OF ANALYSIS

No.	Sample ID	Mercury (dissolved) in Water	Metals in Water (Dissolved) by ICPOES	Total Cyanide in water by Discrete Analyser	Trace Metals (Dissolved) in Water by ICPMS	Turbidity
001	GWBH1M	1	3	1	8	1
002	GWBH2M	1	3	1	8	1
003	GWBH3M	1	3	1	8	1
004	QD1	1	-	-	7	-

CONTINUED OVERLEAF

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

SAMPLE RECEIPT ADVICE

CLIENT DETAILS

Client EI AUSTRALIA

Project E26047 19 Hope Street, Melrose Park

SUMMARY OF ANALYSIS

No.	Sample ID	Per- and Polyfluoroalkyl Substances (PFAS) in
001	GWBH1M	56
002	GWBH2M	56
003	GWBH3M	56

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

Appendix H – Laboratory Analytical Reports

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Sergio Raposeira
Client	EI AUSTRALIA
Address	SUITE 6.01 55 MILLER STREET PYRMONT NSW 2009
Telephone	61 2 95160722
Facsimile	(Not specified)
Email	sergio.raposeira@eiaustralia.com.au
Project	**E26047 19 Hope Street Melrose Park**
Order Number	**E26047**
Samples	26

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	**SE248200 R0**
Date Received	26/5/2023
Date Reported	6/6/2023

COMMENTS

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

PFAS subcontracted to SGS Melbourne, 10/585 Blackburn Road, Notting Hill, VIC, NATA Accreditation Number. 2562/14420. Report No. ME334448.

MA-1523: Majority of surrogate and spike recoveries within acceptance criteria.

No respirable fibres detected in all soil samples using trace analysis technique.
Asbestos analysed by Approved Identifiers Ravee Sivasubramaniam and Yusuf Kuthpudin .
Sample # 3: Asbestos found in approx 10x5x3mm cement sheet fragments X6.

SIGNATORIES

Akheeqar BENIAMEEN Chemist	**Bennet LO** Senior Chemist	**Huong CRAWFORD** Production Manager	**Kamrul AHSAN** Senior Chemist
Ly Kim HA Organic Section Head	**Ravee SIVASUBRAMANIAM** Hygiene Team Leader	**Shane MCDERMOTT** Inorganic/Metals Chemist	

VOC's in Soil [AN433] Tested: 29/5/2023

PARAMETER	UOM	LOR	BH1M_0.2-0.3 SOIL - 25/5/2023 SE248200.001	BH2M_0.2-0.3 SOIL - 25/5/2023 SE248200.002	BH3M_0.2-0.3 SOIL - 26/5/2023 SE248200.003	BH4_0.2-0.3 SOIL - 25/5/2023 SE248200.004	BH5_0.2-0.3 SOIL - 26/5/2023 SE248200.005
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorodifluoromethane (CFC-12)	mg/kg	1	<1	<1	<1	<1	<1
Chloromethane	mg/kg	1	<1	<1	<1	<1	<1
Vinyl chloride (Chloroethene)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Bromomethane	mg/kg	1	<1	<1	<1	<1	<1
Chloroethane	mg/kg	1	<1	<1	<1	<1	<1
Trichlorofluoromethane	mg/kg	1	<1	<1	<1	<1	<1
Acetone (2-propanone)	mg/kg	10	<10	<10	<10	<10	<10
Iodomethane	mg/kg	5	<5	<5	<5	<5	<5
1,1-dichloroethene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acrylonitrile	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dichloromethane (Methylene chloride)	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Allyl chloride	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carbon disulfide	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-dichloroethene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,1-dichloroethane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Vinyl acetate*	mg/kg	10	<10	<10	<10	<10	<10
cis-1,2-dichloroethene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Bromochloromethane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chloroform (THM)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2,2-dichloropropane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2-dichloroethane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,1,1-trichloroethane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,1-dichloropropene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carbon tetrachloride	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dibromomethane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2-dichloropropane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Trichloroethene (Trichloroethylene,TCE)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-nitropropane	mg/kg	10	<10	<10	<10	<10	<10
Bromodichloromethane (THM)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
MIBK (4-methyl-2-pentanone)	mg/kg	1	<1	<1	<1	<1	<1
cis-1,3-dichloropropene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-1,3-dichloropropene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,1,2-trichloroethane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,3-dichloropropane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dibromochloromethane (THM)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-hexanone (MBK)	mg/kg	5	<5	<5	<5	<5	<5
1,2-dibromoethane (EDB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,1,1,2-tetrachloroethane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Bromoform (THM)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Styrene (Vinyl benzene)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,1,2,2-tetrachloroethane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2,3-trichloropropane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-1,4-dichloro-2-butene	mg/kg	1	<1	<1	<1	<1	<1
Isopropylbenzene (Cumene)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Bromobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

VOC's in Soil [AN433] Tested: 29/5/2023 (continued)

PARAMETER	UOM	LOR	BH1M_0.2-0.3 SOIL - 25/5/2023 SE248200.001	BH2M_0.2-0.3 SOIL - 25/5/2023 SE248200.002	BH3M_0.2-0.3 SOIL - 26/5/2023 SE248200.003	BH4_0.2-0.3 SOIL - 25/5/2023 SE248200.004	BH5_0.2-0.3 SOIL - 26/5/2023 SE248200.005
n-propylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-chlorotoluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
4-chlorotoluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,3,5-trimethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
tert-butylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2,4-trimethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
sec-butylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,3-dichlorobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,4-dichlorobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p-isopropyltoluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2-dichlorobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
n-butylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2-dibromo-3-chloropropane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2,4-trichlorobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Hexachlorobutadiene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2,3-trichlorobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total VOC*	mg/kg	24	<24	<24	<24	<24	<24
Total Volatile Chlorinated Hydrocarbons*	mg/kg	3	<3.0	<3.0	<3.0	<3.0	<3.0
Total Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	<1.8	<1.8	<1.8	<1.8	<1.8
Total Other Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	<1.8	<1.8	<1.8	<1.8	<1.8

VOC's in Soil [AN433] Tested: 29/5/2023 (continued)

PARAMETER	UOM	LOR	TP1_0.2-0.3 SOIL - 26/5/2023 SE248200.006	TP2_0.2-0.3 SOIL - 26/5/2023 SE248200.007	TP3_0.2-0.3 SOIL - 26/5/2023 SE248200.008	TP6_0.2-0.3 SOIL - 26/5/2023 SE248200.009	HA3_0.2-0.3 SOIL - 26/5/2023 SE248200.010
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorodifluoromethane (CFC-12)	mg/kg	1	<1	<1	<1	<1	<1
Chloromethane	mg/kg	1	<1	<1	<1	<1	<1
Vinyl chloride (Chloroethene)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Bromomethane	mg/kg	1	<1	<1	<1	<1	<1
Chloroethane	mg/kg	1	<1	<1	<1	<1	<1
Trichlorofluoromethane	mg/kg	1	<1	<1	<1	<1	<1
Acetone (2-propanone)	mg/kg	10	<10	<10	<10	<10	<10
Iodomethane	mg/kg	5	<5	<5	<5	<5	<5
1,1-dichloroethene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acrylonitrile	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dichloromethane (Methylene chloride)	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Allyl chloride	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carbon disulfide	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-dichloroethene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,1-dichloroethane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Vinyl acetate*	mg/kg	10	<10	<10	<10	<10	<10
cis-1,2-dichloroethene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Bromochloromethane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chloroform (THM)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2,2-dichloropropane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2-dichloroethane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,1,1-trichloroethane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,1-dichloropropene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carbon tetrachloride	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dibromomethane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2-dichloropropane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Trichloroethene (Trichloroethylene,TCE)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-nitropropane	mg/kg	10	<10	<10	<10	<10	<10
Bromodichloromethane (THM)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
MIBK (4-methyl-2-pentanone)	mg/kg	1	<1	<1	<1	<1	<1
cis-1,3-dichloropropene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-1,3-dichloropropene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,1,2-trichloroethane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,3-dichloropropane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dibromochloromethane (THM)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-hexanone (MBK)	mg/kg	5	<5	<5	<5	<5	<5
1,2-dibromoethane (EDB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,1,1,2-tetrachloroethane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Bromoform (THM)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Styrene (Vinyl benzene)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,1,2,2-tetrachloroethane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2,3-trichloropropane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-1,4-dichloro-2-butene	mg/kg	1	<1	<1	<1	<1	<1
Isopropylbenzene (Cumene)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Bromobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

VOC's in Soil [AN433] Tested: 29/5/2023 (continued)

PARAMETER	UOM	LOR	TP1_0.2-0.3 SOIL - 26/5/2023 SE248200.006	TP2_0.2-0.3 SOIL - 26/5/2023 SE248200.007	TP3_0.2-0.3 SOIL - 26/5/2023 SE248200.008	TP6_0.2-0.3 SOIL - 26/5/2023 SE248200.009	HA3_0.2-0.3 SOIL - 26/5/2023 SE248200.010
n-propylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-chlorotoluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
4-chlorotoluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,3,5-trimethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
tert-butylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2,4-trimethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
sec-butylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,3-dichlorobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,4-dichlorobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p-isopropyltoluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2-dichlorobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
n-butylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2-dibromo-3-chloropropane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2,4-trichlorobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Hexachlorobutadiene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2,3-trichlorobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total VOC*	mg/kg	24	<24	<24	<24	<24	<24
Total Volatile Chlorinated Hydrocarbons*	mg/kg	3	<3.0	<3.0	<3.0	<3.0	<3.0
Total Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	<1.8	<1.8	<1.8	<1.8	<1.8
Total Other Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	<1.8	<1.8	<1.8	<1.8	<1.8

VOC's in Soil [AN433] Tested: 29/5/2023 (continued)

PARAMETER	UOM	LOR	BH2M_0.7-0.8 SOIL - 25/5/2023 SE248200.012	BH3M_0.7-0.8 SOIL - 26/5/2023 SE248200.013	BH4_0.7-0.8 SOIL - 25/5/2023 SE248200.014	BH5_0.7-0.8 SOIL - 26/5/2023 SE248200.015	TP1_0.7-0.8 SOIL - 26/5/2023 SE248200.016
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorodifluoromethane (CFC-12)	mg/kg	1	<1	<1	<1	<1	<1
Chloromethane	mg/kg	1	<1	<1	<1	<1	<1
Vinyl chloride (Chloroethene)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Bromomethane	mg/kg	1	<1	<1	<1	<1	<1
Chloroethane	mg/kg	1	<1	<1	<1	<1	<1
Trichlorofluoromethane	mg/kg	1	<1	<1	<1	<1	<1
Acetone (2-propanone)	mg/kg	10	<10	<10	<10	<10	<10
Iodomethane	mg/kg	5	<5	<5	<5	<5	<5
1,1-dichloroethene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acrylonitrile	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dichloromethane (Methylene chloride)	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Allyl chloride	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carbon disulfide	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-dichloroethene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,1-dichloroethane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Vinyl acetate*	mg/kg	10	<10	<10	<10	<10	<10
cis-1,2-dichloroethene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Bromochloromethane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chloroform (THM)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2,2-dichloropropane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2-dichloroethane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,1,1-trichloroethane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,1-dichloropropene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carbon tetrachloride	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dibromomethane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2-dichloropropane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Trichloroethene (Trichloroethylene,TCE)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-nitropropane	mg/kg	10	<10	<10	<10	<10	<10
Bromodichloromethane (THM)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
MIBK (4-methyl-2-pentanone)	mg/kg	1	<1	<1	<1	<1	<1
cis-1,3-dichloropropene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-1,3-dichloropropene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,1,2-trichloroethane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,3-dichloropropane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dibromochloromethane (THM)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-hexanone (MBK)	mg/kg	5	<5	<5	<5	<5	<5
1,2-dibromoethane (EDB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,1,1,2-tetrachloroethane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Bromoform (THM)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Styrene (Vinyl benzene)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,1,2,2-tetrachloroethane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2,3-trichloropropane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-1,4-dichloro-2-butene	mg/kg	1	<1	<1	<1	<1	<1
Isopropylbenzene (Cumene)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Bromobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

VOC's in Soil [AN433] Tested: 29/5/2023 (continued)

PARAMETER	UOM	LOR	BH2M_0.7-0.8 SOIL - 25/5/2023 SE248200.012	BH3M_0.7-0.8 SOIL - 26/5/2023 SE248200.013	BH4_0.7-0.8 SOIL - 25/5/2023 SE248200.014	BH5_0.7-0.8 SOIL - 26/5/2023 SE248200.015	TP1_0.7-0.8 SOIL - 26/5/2023 SE248200.016
n-propylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-chlorotoluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
4-chlorotoluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,3,5-trimethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
tert-butylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2,4-trimethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
sec-butylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,3-dichlorobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,4-dichlorobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p-isopropyltoluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2-dichlorobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
n-butylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2-dibromo-3-chloropropane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2,4-trichlorobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Hexachlorobutadiene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2,3-trichlorobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total VOC*	mg/kg	24	<24	<24	<24	<24	<24
Total Volatile Chlorinated Hydrocarbons*	mg/kg	3	<3.0	<3.0	<3.0	<3.0	<3.0
Total Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	<1.8	<1.8	<1.8	<1.8	<1.8
Total Other Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	<1.8	<1.8	<1.8	<1.8	<1.8

VOC's in Soil [AN433] Tested: 29/5/2023 (continued)

PARAMETER	UOM	LOR	TP2_0.7-0.8 SOIL - 26/5/2023 SE248200.017	TP4_0.7-0.8 SOIL - 26/5/2023 SE248200.019	BH1M_1.2-1.3 SOIL - 26/5/2023 SE248200.023	Trip Blank SOIL - 26/5/2023 SE248200.025	Trip Spike SOIL - 26/5/2023 SE248200.026
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	[96%]
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	[97%]
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	[100%]
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	[97%]
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	[98%]
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	-
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	-
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	-
Dichlorodifluoromethane (CFC-12)	mg/kg	1	<1	<1	<1	-	-
Chloromethane	mg/kg	1	<1	<1	<1	-	-
Vinyl chloride (Chloroethene)	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
Bromomethane	mg/kg	1	<1	<1	<1	-	-
Chloroethane	mg/kg	1	<1	<1	<1	-	-
Trichlorofluoromethane	mg/kg	1	<1	<1	<1	-	-
Acetone (2-propanone)	mg/kg	10	<10	<10	<10	-	-
Iodomethane	mg/kg	5	<5	<5	<5	-	-
1,1-dichloroethene	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
Acrylonitrile	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
Dichloromethane (Methylene chloride)	mg/kg	0.5	<0.5	<0.5	<0.5	-	-
Allyl chloride	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
Carbon disulfide	mg/kg	0.5	<0.5	<0.5	<0.5	-	-
trans-1,2-dichloroethene	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
1,1-dichloroethane	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
Vinyl acetate*	mg/kg	10	<10	<10	<10	-	-
cis-1,2-dichloroethene	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
Bromochloromethane	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
Chloroform (THM)	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
2,2-dichloropropane	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
1,2-dichloroethane	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
1,1,1-trichloroethane	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
1,1-dichloropropene	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
Carbon tetrachloride	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
Dibromomethane	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
1,2-dichloropropane	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
Trichloroethene (Trichloroethylene,TCE)	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
2-nitropropane	mg/kg	10	<10	<10	<10	-	-
Bromodichloromethane (THM)	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
MIBK (4-methyl-2-pentanone)	mg/kg	1	<1	<1	<1	-	-
cis-1,3-dichloropropene	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
trans-1,3-dichloropropene	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
1,1,2-trichloroethane	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
1,3-dichloropropane	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
Dibromochloromethane (THM)	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
2-hexanone (MBK)	mg/kg	5	<5	<5	<5	-	-
1,2-dibromoethane (EDB)	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
1,1,1,2-tetrachloroethane	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
Chlorobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
Bromoform (THM)	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
Styrene (Vinyl benzene)	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
1,1,2,2-tetrachloroethane	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
1,2,3-trichloropropane	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
trans-1,4-dichloro-2-butene	mg/kg	1	<1	<1	<1	-	-
Isopropylbenzene (Cumene)	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
Bromobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	-	-

VOC's in Soil [AN433] Tested: 29/5/2023 (continued)

PARAMETER	UOM	LOR	TP2_0.7-0.8 SOIL - 26/5/2023 SE248200.017	TP4_0.7-0.8 SOIL - 26/5/2023 SE248200.019	BH1M_1.2-1.3 SOIL - 26/5/2023 SE248200.023	Trip Blank SOIL - 26/5/2023 SE248200.025	Trip Spike SOIL - 26/5/2023 SE248200.026
n-propylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
2-chlorotoluene	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
4-chlorotoluene	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
1,3,5-trimethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
tert-butylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
1,2,4-trimethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
sec-butylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
1,3-dichlorobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
1,4-dichlorobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
p-isopropyltoluene	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
1,2-dichlorobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
n-butylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
1,2-dibromo-3-chloropropane	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
1,2,4-trichlorobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
Hexachlorobutadiene	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
1,2,3-trichlorobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
Total VOC*	mg/kg	24	<24	<24	<24	-	-
Total Volatile Chlorinated Hydrocarbons*	mg/kg	3	<3.0	<3.0	<3.0	-	-
Total Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	<1.8	<1.8	<1.8	-	-
Total Other Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	<1.8	<1.8	<1.8	-	-

Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 29/5/2023

PARAMETER	UOM	LOR	BH1M_0.2-0.3 SOIL - 25/5/2023 SE248200.001	BH2M_0.2-0.3 SOIL - 25/5/2023 SE248200.002	BH3M_0.2-0.3 SOIL - 26/5/2023 SE248200.003	BH4_0.2-0.3 SOIL - 25/5/2023 SE248200.004	BH5_0.2-0.3 SOIL - 26/5/2023 SE248200.005
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	TP1_0.2-0.3 SOIL - 26/5/2023 SE248200.006	TP2_0.2-0.3 SOIL - 26/5/2023 SE248200.007	TP3_0.2-0.3 SOIL - 26/5/2023 SE248200.008	TP6_0.2-0.3 SOIL - 26/5/2023 SE248200.009	HA3_0.2-0.3 SOIL - 26/5/2023 SE248200.010
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	BH2M_0.7-0.8 SOIL - 25/5/2023 SE248200.012	BH3M_0.7-0.8 SOIL - 26/5/2023 SE248200.013	BH4_0.7-0.8 SOIL - 25/5/2023 SE248200.014	BH5_0.7-0.8 SOIL - 26/5/2023 SE248200.015	TP1_0.7-0.8 SOIL - 26/5/2023 SE248200.016
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	TP2_0.7-0.8 SOIL - 26/5/2023 SE248200.017	TP4_0.7-0.8 SOIL - 26/5/2023 SE248200.019	BH1M_1.2-1.3 SOIL - 26/5/2023 SE248200.023
TRH C6-C9	mg/kg	20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 29/5/2023

PARAMETER	UOM	LOR	BH1M_0.2-0.3 SOIL - 25/5/2023 SE248200.001	BH2M_0.2-0.3 SOIL - 25/5/2023 SE248200.002	BH3M_0.2-0.3 SOIL - 26/5/2023 SE248200.003	BH4_0.2-0.3 SOIL - 25/5/2023 SE248200.004	BH5_0.2-0.3 SOIL - 26/5/2023 SE248200.005
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210	<210

PARAMETER	UOM	LOR	TP1_0.2-0.3 SOIL - 26/5/2023 SE248200.006	TP2_0.2-0.3 SOIL - 26/5/2023 SE248200.007	TP3_0.2-0.3 SOIL - 26/5/2023 SE248200.008	TP6_0.2-0.3 SOIL - 26/5/2023 SE248200.009	HA3_0.2-0.3 SOIL - 26/5/2023 SE248200.010
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210	<210

PARAMETER	UOM	LOR	BH2M_0.7-0.8 SOIL - 25/5/2023 SE248200.012	BH3M_0.7-0.8 SOIL - 26/5/2023 SE248200.013	BH4_0.7-0.8 SOIL - 25/5/2023 SE248200.014	BH5_0.7-0.8 SOIL - 26/5/2023 SE248200.015	TP1_0.7-0.8 SOIL - 26/5/2023 SE248200.016
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	**150**	<45	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	**150**	<90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	**150**	<110	<110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210	<210

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 29/5/2023 (continued)

PARAMETER	UOM	LOR	TP2_0.7-0.8 SOIL - 26/5/2023 SE248200.017	TP4_0.7-0.8 SOIL - 26/5/2023 SE248200.019	BH1M_1.2-1.3 SOIL - 26/5/2023 SE248200.023
TRH C10-C14	mg/kg	20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 29/5/2023

PARAMETER	UOM	LOR	BH1M_0.2-0.3 SOIL - 25/5/2023 SE248200.001	BH2M_0.2-0.3 SOIL - 25/5/2023 SE248200.002	BH3M_0.2-0.3 SOIL - 26/5/2023 SE248200.003	BH4_0.2-0.3 SOIL - 25/5/2023 SE248200.004	BH5_0.2-0.3 SOIL - 26/5/2023 SE248200.005
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	<0.8

PARAMETER	UOM	LOR	TP1_0.2-0.3 SOIL - 26/5/2023 SE248200.006	TP2_0.2-0.3 SOIL - 26/5/2023 SE248200.007	TP3_0.2-0.3 SOIL - 26/5/2023 SE248200.008	TP6_0.2-0.3 SOIL - 26/5/2023 SE248200.009	HA3_0.2-0.3 SOIL - 26/5/2023 SE248200.010
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	<0.8

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 29/5/2023 (continued)

PARAMETER	UOM	LOR	BH2M_0.7-0.8 SOIL - 25/5/2023 SE248200.012	BH3M_0.7-0.8 SOIL - 26/5/2023 SE248200.013	BH4_0.7-0.8 SOIL - 25/5/2023 SE248200.014	BH5_0.7-0.8 SOIL - 26/5/2023 SE248200.015	TP1_0.7-0.8 SOIL - 26/5/2023 SE248200.016
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	0.2	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	0.3	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	0.3	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	0.3	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	0.4	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	0.2	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	0.4	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	0.2	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	0.2	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	0.5	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	0.6	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	0.5	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	<0.8	2.6	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	<0.8	2.6	<0.8

PARAMETER	UOM	LOR	TP2_0.7-0.8 SOIL - 26/5/2023 SE248200.017	TP4_0.7-0.8 SOIL - 26/5/2023 SE248200.019	BH1M_1.2-1.3 SOIL - 26/5/2023 SE248200.023
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	<0.8

OC Pesticides in Soil [AN420] Tested: 29/5/2023

PARAMETER	UOM	LOR	BH1M_0.2-0.3 SOIL - 25/5/2023 SE248200.001	BH2M_0.2-0.3 SOIL - 25/5/2023 SE248200.002	BH3M_0.2-0.3 SOIL - 26/5/2023 SE248200.003	BH4_0.2-0.3 SOIL - 25/5/2023 SE248200.004	BH5_0.2-0.3 SOIL - 26/5/2023 SE248200.005
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<1	<1	<1	<1
Total OC VIC EPA	mg/kg	1	<1	<1	<1	<1	<1

OC Pesticides in Soil [AN420] Tested: 29/5/2023 (continued)

PARAMETER	UOM	LOR	TP1_0.2-0.3 SOIL - 26/5/2023 SE248200.006	TP2_0.2-0.3 SOIL - 26/5/2023 SE248200.007	TP3_0.2-0.3 SOIL - 26/5/2023 SE248200.008	TP6_0.2-0.3 SOIL - 26/5/2023 SE248200.009	HA3_0.2-0.3 SOIL - 26/5/2023 SE248200.010
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<1	<1	<1	<1
Total OC VIC EPA	mg/kg	1	<1	<1	<1	<1	<1

OP Pesticides in Soil [AN420] Tested: 29/5/2023

PARAMETER	UOM	LOR	BH1M_0.2-0.3 SOIL - 25/5/2023 SE248200.001	BH2M_0.2-0.3 SOIL - 25/5/2023 SE248200.002	BH3M_0.2-0.3 SOIL - 26/5/2023 SE248200.003	BH4_0.2-0.3 SOIL - 25/5/2023 SE248200.004	BH5_0.2-0.3 SOIL - 26/5/2023 SE248200.005
Dichlorvos	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	<1.7	<1.7	<1.7

PARAMETER	UOM	LOR	TP1_0.2-0.3 SOIL - 26/5/2023 SE248200.006	TP2_0.2-0.3 SOIL - 26/5/2023 SE248200.007	TP3_0.2-0.3 SOIL - 26/5/2023 SE248200.008	TP6_0.2-0.3 SOIL - 26/5/2023 SE248200.009	HA3_0.2-0.3 SOIL - 26/5/2023 SE248200.010
Dichlorvos	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	<1.7	<1.7	<1.7

PCBs in Soil [AN420] Tested: 29/5/2023

PARAMETER	UOM	LOR	BH1M_0.2-0.3 SOIL - 25/5/2023 SE248200.001	BH2M_0.2-0.3 SOIL - 25/5/2023 SE248200.002	BH3M_0.2-0.3 SOIL - 26/5/2023 SE248200.003	BH4_0.2-0.3 SOIL - 25/5/2023 SE248200.004	BH5_0.2-0.3 SOIL - 26/5/2023 SE248200.005
Arochlor 1016	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1221	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1232	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1242	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1248	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1254	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1260	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1262	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1268	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total PCBs (Arochlors)	mg/kg	1	<1	<1	<1	<1	<1

PARAMETER	UOM	LOR	TP1_0.2-0.3 SOIL - 26/5/2023 SE248200.006	TP2_0.2-0.3 SOIL - 26/5/2023 SE248200.007	TP3_0.2-0.3 SOIL - 26/5/2023 SE248200.008	TP6_0.2-0.3 SOIL - 26/5/2023 SE248200.009	HA3_0.2-0.3 SOIL - 26/5/2023 SE248200.010
Arochlor 1016	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1221	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1232	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1242	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1248	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1254	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1260	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1262	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1268	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total PCBs (Arochlors)	mg/kg	1	<1	<1	<1	<1	<1

Total Phenolics in Soil [AN295] Tested: 1/6/2023

PARAMETER	UOM	LOR	BH1M_0.2-0.3 SOIL - 25/5/2023 SE248200.001	BH2M_0.2-0.3 SOIL - 25/5/2023 SE248200.002	BH3M_0.2-0.3 SOIL - 26/5/2023 SE248200.003	BH4_0.2-0.3 SOIL - 25/5/2023 SE248200.004	BH5_0.2-0.3 SOIL - 26/5/2023 SE248200.005
Total Phenols	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5

PARAMETER	UOM	LOR	TP1_0.2-0.3 SOIL - 26/5/2023 SE248200.006	TP2_0.2-0.3 SOIL - 26/5/2023 SE248200.007	TP3_0.2-0.3 SOIL - 26/5/2023 SE248200.008	TP6_0.2-0.3 SOIL - 26/5/2023 SE248200.009	HA3_0.2-0.3 SOIL - 26/5/2023 SE248200.010
Total Phenols	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5

PARAMETER	UOM	LOR	BH2M_0.7-0.8 SOIL - 25/5/2023 SE248200.012	BH3M_0.7-0.8 SOIL - 26/5/2023 SE248200.013	BH4_0.7-0.8 SOIL - 25/5/2023 SE248200.014	BH5_0.7-0.8 SOIL - 26/5/2023 SE248200.015	TP1_0.7-0.8 SOIL - 26/5/2023 SE248200.016
Total Phenols	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5

PARAMETER	UOM	LOR	TP2_0.7-0.8 SOIL - 26/5/2023 SE248200.017	TP4_0.7-0.8 SOIL - 26/5/2023 SE248200.019	BH1M_1.2-1.3 SOIL - 26/5/2023 SE248200.023
Total Phenols	mg/kg	0.5	<0.5	<0.5	<0.5

Total Cyanide in soil by Discrete Analyser [AN077/AN287] Tested: 1/6/2023

PARAMETER	UOM	LOR	HA3_0.2-0.3 SOIL - 26/5/2023 SE248200.010	BH2M_0.7-0.8 SOIL - 25/5/2023 SE248200.012	BH3M_0.7-0.8 SOIL - 26/5/2023 SE248200.013	BH4_0.7-0.8 SOIL - 25/5/2023 SE248200.014	BH5_0.7-0.8 SOIL - 26/5/2023 SE248200.015
Total Cyanide	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5

PARAMETER	UOM	LOR	TP1_0.7-0.8 SOIL - 26/5/2023 SE248200.016	TP2_0.7-0.8 SOIL - 26/5/2023 SE248200.017	TP4_0.7-0.8 SOIL - 26/5/2023 SE248200.019	BH1M_1.2-1.3 SOIL - 26/5/2023 SE248200.023
Total Cyanide	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 29/5/2023

PARAMETER	UOM	LOR	BH1M_0.2-0.3 SOIL - 25/5/2023 SE248200.001	BH2M_0.2-0.3 SOIL - 25/5/2023 SE248200.002	BH3M_0.2-0.3 SOIL - 26/5/2023 SE248200.003	BH4_0.2-0.3 SOIL - 25/5/2023 SE248200.004	BH5_0.2-0.3 SOIL - 26/5/2023 SE248200.005
Arsenic, As	mg/kg	1	8	6	6	7	6
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	16	15	16	17	24
Copper, Cu	mg/kg	0.5	10	11	6.9	16	4.0
Lead, Pb	mg/kg	1	30	21	31	130	30
Nickel, Ni	mg/kg	0.5	4.2	11	4.5	4.4	2.4
Zinc, Zn	mg/kg	2	47	28	49	140	13

PARAMETER	UOM	LOR	TP1_0.2-0.3 SOIL - 26/5/2023 SE248200.006	TP2_0.2-0.3 SOIL - 26/5/2023 SE248200.007	TP3_0.2-0.3 SOIL - 26/5/2023 SE248200.008	TP6_0.2-0.3 SOIL - 26/5/2023 SE248200.009	HA3_0.2-0.3 SOIL - 26/5/2023 SE248200.010
Arsenic, As	mg/kg	1	6	8	11	5	6
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	12	28	22	33	14
Copper, Cu	mg/kg	0.5	35	18	5.2	23	24
Lead, Pb	mg/kg	1	61	56	25	29	15
Nickel, Ni	mg/kg	0.5	3.3	14	1.7	31	11
Zinc, Zn	mg/kg	2	79	72	35	130	62

PARAMETER	UOM	LOR	BH2M_0.7-0.8 SOIL - 25/5/2023 SE248200.012	BH3M_0.7-0.8 SOIL - 26/5/2023 SE248200.013	BH4_0.7-0.8 SOIL - 25/5/2023 SE248200.014	BH5_0.7-0.8 SOIL - 26/5/2023 SE248200.015	TP1_0.7-0.8 SOIL - 26/5/2023 SE248200.016
Arsenic, As	mg/kg	1	6	10	6	6	6
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	14	25	21	21	24
Copper, Cu	mg/kg	0.5	7.3	4.8	6.1	7.8	1.7
Lead, Pb	mg/kg	1	15	24	28	74	20
Nickel, Ni	mg/kg	0.5	4.3	1.3	4.4	2.7	2.3
Zinc, Zn	mg/kg	2	16	13	77	23	8.7

PARAMETER	UOM	LOR	TP2_0.7-0.8 SOIL - 26/5/2023 SE248200.017	TP4_0.7-0.8 SOIL - 26/5/2023 SE248200.019	BH1M_1.2-1.3 SOIL - 26/5/2023 SE248200.023
Arsenic, As	mg/kg	1	6	6	6
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	19	8.4	16
Copper, Cu	mg/kg	0.5	3.2	18	7.3
Lead, Pb	mg/kg	1	15	33	22
Nickel, Ni	mg/kg	0.5	1.7	8.8	3.3
Zinc, Zn	mg/kg	2	9.5	68	26

Mercury in Soil [AN312] Tested: 29/5/2023

PARAMETER	UOM	LOR	BH1M_0.2-0.3 SOIL - 25/5/2023 SE248200.001	BH2M_0.2-0.3 SOIL - 25/5/2023 SE248200.002	BH3M_0.2-0.3 SOIL - 26/5/2023 SE248200.003	BH4_0.2-0.3 SOIL - 25/5/2023 SE248200.004	BH5_0.2-0.3 SOIL - 26/5/2023 SE248200.005
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	0.62	<0.05

PARAMETER	UOM	LOR	TP1_0.2-0.3 SOIL - 26/5/2023 SE248200.006	TP2_0.2-0.3 SOIL - 26/5/2023 SE248200.007	TP3_0.2-0.3 SOIL - 26/5/2023 SE248200.008	TP6_0.2-0.3 SOIL - 26/5/2023 SE248200.009	HA3_0.2-0.3 SOIL - 26/5/2023 SE248200.010
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	BH2M_0.7-0.8 SOIL - 25/5/2023 SE248200.012	BH3M_0.7-0.8 SOIL - 26/5/2023 SE248200.013	BH4_0.7-0.8 SOIL - 25/5/2023 SE248200.014	BH5_0.7-0.8 SOIL - 26/5/2023 SE248200.015	TP1_0.7-0.8 SOIL - 26/5/2023 SE248200.016
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	TP2_0.7-0.8 SOIL - 26/5/2023 SE248200.017	TP4_0.7-0.8 SOIL - 26/5/2023 SE248200.019	BH1M_1.2-1.3 SOIL - 26/5/2023 SE248200.023
Mercury	mg/kg	0.05	<0.05	0.08	<0.05

Fibre Identification in soil [AS4964/AN602] Tested: 1/6/2023

PARAMETER	UOM	LOR	BH1M_0.2-0.3 SOIL - 25/5/2023 SE248200.001	BH2M_0.2-0.3 SOIL - 25/5/2023 SE248200.002	BH3M_0.2-0.3 SOIL - 26/5/2023 SE248200.003	BH4_0.2-0.3 SOIL - 25/5/2023 SE248200.004	BH5_0.2-0.3 SOIL - 26/5/2023 SE248200.005
Asbestos Detected	No unit	-	No	No	Yes	No	No
Estimated Fibres*	%w/w	0.01	<0.01	<0.01	<0.01	<0.01	<0.01

PARAMETER	UOM	LOR	TP1_0.2-0.3 SOIL - 26/5/2023 SE248200.006	TP2_0.2-0.3 SOIL - 26/5/2023 SE248200.007	TP3_0.2-0.3 SOIL - 26/5/2023 SE248200.008	TP6_0.2-0.3 SOIL - 26/5/2023 SE248200.009	HA3_0.2-0.3 SOIL - 26/5/2023 SE248200.010
Asbestos Detected	No unit	-	No	No	No	No	No
Estimated Fibres*	%w/w	0.01	<0.01	<0.01	<0.01	<0.01	<0.01

Gravimetric Determination of Asbestos in Soil [AN605] Tested: 1/6/2023

PARAMETER	UOM	LOR	BH1M_0.2-0.3 SOIL - 25/5/2023 SE248200.001	BH2M_0.2-0.3 SOIL - 25/5/2023 SE248200.002	BH3M_0.2-0.3 SOIL - 26/5/2023 SE248200.003	BH4_0.2-0.3 SOIL - 25/5/2023 SE248200.004	BH5_0.2-0.3 SOIL - 26/5/2023 SE248200.005
Total Sample Weight*	g	1	717	936	455	812	295
Bonded ACM in >7mm Sample*	g	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
AF/FA in >2mm to <7mm Sample*	g	0.00001	<0.00001	<0.00001	0.144	<0.00001	<0.00001
AF/FA in <2mm Sample*	g	0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Asbestos in soil (>7mm ACM)*	%w/w	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Asbestos in soil (>2mm to <7mm AF/FA)*	%w/w	0.001	<0.001	<0.001	0.032	<0.001	<0.001
Asbestos in soil (<2mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Asbestos in soil (<7mm AF/FA)*	%w/w	0.001	<0.001	<0.001	0.032	<0.001	<0.001
Fibre Type*	No unit	-	NAD	NAD	CRY	NAD	NAD

PARAMETER	UOM	LOR	TP1_0.2-0.3 SOIL - 26/5/2023 SE248200.006	TP2_0.2-0.3 SOIL - 26/5/2023 SE248200.007	TP3_0.2-0.3 SOIL - 26/5/2023 SE248200.008	TP6_0.2-0.3 SOIL - 26/5/2023 SE248200.009
Total Sample Weight*	g	1	157	1022	736	928
Bonded ACM in >7mm Sample*	g	0.001	<0.001	<0.001	<0.001	<0.001
AF/FA in >2mm to <7mm Sample*	g	0.00001	<0.00001	<0.00001	<0.00001	<0.00001
AF/FA in <2mm Sample*	g	0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Asbestos in soil (>7mm ACM)*	%w/w	0.01	<0.01	<0.01	<0.01	<0.01
Asbestos in soil (>2mm to <7mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001	<0.001
Asbestos in soil (<2mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001	<0.001
Asbestos in soil (<7mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001	<0.001
Fibre Type*	No unit	-	NAD	NAD	NAD	NAD

Moisture Content [AN002] Tested: 29/5/2023

PARAMETER	UOM	LOR	BH1M_0.2-0.3 SOIL - 25/5/2023 SE248200.001	BH2M_0.2-0.3 SOIL - 25/5/2023 SE248200.002	BH3M_0.2-0.3 SOIL - 26/5/2023 SE248200.003	BH4_0.2-0.3 SOIL - 25/5/2023 SE248200.004	BH5_0.2-0.3 SOIL - 26/5/2023 SE248200.005
% Moisture	%w/w	1	11.5	13.6	14.9	17.3	21.8

PARAMETER	UOM	LOR	TP1_0.2-0.3 SOIL - 26/5/2023 SE248200.006	TP2_0.2-0.3 SOIL - 26/5/2023 SE248200.007	TP3_0.2-0.3 SOIL - 26/5/2023 SE248200.008	TP6_0.2-0.3 SOIL - 26/5/2023 SE248200.009	HA3_0.2-0.3 SOIL - 26/5/2023 SE248200.010
% Moisture	%w/w	1	18.4	9.9	16.5	7.1	22.3

PARAMETER	UOM	LOR	BH2M_0.7-0.8 SOIL - 25/5/2023 SE248200.012	BH3M_0.7-0.8 SOIL - 26/5/2023 SE248200.013	BH4_0.7-0.8 SOIL - 25/5/2023 SE248200.014	BH5_0.7-0.8 SOIL - 26/5/2023 SE248200.015	TP1_0.7-0.8 SOIL - 26/5/2023 SE248200.016
% Moisture	%w/w	1	18.0	16.9	19.9	21.6	18.5

PARAMETER	UOM	LOR	TP2_0.7-0.8 SOIL - 26/5/2023 SE248200.017	TP4_0.7-0.8 SOIL - 26/5/2023 SE248200.019	BH1M_1.2-1.3 SOIL - 26/5/2023 SE248200.023	Trip Blank SOIL - 26/5/2023 SE248200.025
% Moisture	%w/w	1	17.8	8.3	19.3	<1.0

Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples [MA-1523] Tested: 2/6/2023

PARAMETER	UOM	LOR	BH1M_0.2-0.3 SOIL - 25/5/2023 SE248200.001	BH2M_0.2-0.3 SOIL - 25/5/2023 SE248200.002	BH3M_0.2-0.3 SOIL - 26/5/2023 SE248200.003	BH4_0.2-0.3 SOIL - 25/5/2023 SE248200.004	BH5_0.2-0.3 SOIL - 26/5/2023 SE248200.005
Perfluorobutanoic acid (PFBA)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluoropentanoic acid (PFPeA)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluorohexanoic acid (PFHxA)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluorooctanoic Acid (PFOA)	mg/kg	0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008
Perfluorononanoic acid (PFNA)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluorodecanoic acid (PFDA)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluoroundecanoic acid (PFUnA)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluorododecanoic acid (PFDoA)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluorotridecanoic acid (PFTrDA)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluorotetradecanoic acid (PFTeDA)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluorohexadecanoic acid (PFHxDA)	mg/kg	0.0032	<0.0032	<0.0032	<0.0032	<0.0032	<0.0032
Perfluorobutane sulfonate (PFBS)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluoropentane sulfonate (PFPeS)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluorohexane sulfonate (PFHxS)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluoroheptane sulfonate (PFHpS)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluorooctane sulfonate (PFOS)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	**0.0024**
Sum PFOS and PFHXS	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	**0.0024**
Sum of US EPA PFAS (PFOS+PFOA)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	**0.0024**
Sum of enHealth PFAS (PFHxS+PFOS+PFOA)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	**0.0024**
Perfluorononane sulfonate (PFNS)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluorodecane sulfonate (PFDS)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluorododecane sulfonate (PFDoS)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
1H,1H,2H,2H-Perfluorododecanesulfonic acid (10:2)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluoroctane sulfonamide (PFOSA)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
N-Methylperfluoroctane sulfonamide (N-MeFOSA)	mg/kg	0.008	<0.008	<0.008	<0.008	<0.008	<0.008
N-Ethylperfluoroctane sulfonamide (N-EtFOSA)	mg/kg	0.008	<0.008	<0.008	<0.008	<0.008	<0.008
2-(N-Methylperfluorooctane sulfonamido)-ethanol	mg/kg	0.016	<0.016	<0.016	<0.016	<0.016	<0.016
2-(N-Ethylperfluorooctane sulfonamido)-ethanol	mg/kg	0.016	<0.016	<0.016	<0.016	<0.016	<0.016
N-Methylperfluorooctanesulfonamidoacetic acid	mg/kg	0.008	<0.008	<0.008	<0.008	<0.008	<0.008
N-Ethylperfluorooctanesulfonamidoacetic Acid	mg/kg	0.008	<0.008	<0.008	<0.008	<0.008	<0.008
Total of PFAS (n=30)	mg/kg	0.08	<0.08	<0.08	<0.08	<0.08	<0.08

Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples [MA-1523] Tested: 2/6/2023 (continued)

PARAMETER	UOM	LOR	TP3_0.2-0.3 SOIL - 26/5/2023 SE248200.008	TP6_0.2-0.3 SOIL - 26/5/2023 SE248200.009
Perfluorobutanoic acid (PFBA)	mg/kg	0.0016	<0.0016	<0.0016
Perfluoropentanoic acid (PFPeA)	mg/kg	0.0016	<0.0016	<0.0016
Perfluorohexanoic acid (PFHxA)	mg/kg	0.0016	<0.0016	<0.0016
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.0016	<0.0016	<0.0016
Perfluorooctanoic Acid (PFOA)	mg/kg	0.0008	<0.0008	<0.0008
Perfluorononanoic acid (PFNA)	mg/kg	0.0016	<0.0016	<0.0016
Perfluorodecanoic acid (PFDA)	mg/kg	0.0016	<0.0016	<0.0016
Perfluoroundecanoic acid (PFUnA)	mg/kg	0.0016	<0.0016	<0.0016
Perfluorododecanoic acid (PFDoA)	mg/kg	0.0016	<0.0016	<0.0016
Perfluorotridecanoic acid (PFTrDA)	mg/kg	0.0016	<0.0016	<0.0016
Perfluorotetradecanoic acid (PFTeDA)	mg/kg	0.0016	<0.0016	<0.0016
Perfluorohexadecanoic acid (PFHxDA)	mg/kg	0.0032	<0.0032	<0.0032
Perfluorobutane sulfonate (PFBS)	mg/kg	0.0016	<0.0016	<0.0016
Perfluoropentane sulfonate (PFPeS)	mg/kg	0.0016	<0.0016	<0.0016
Perfluorohexane sulfonate (PFHxS)	mg/kg	0.0016	<0.0016	<0.0016
Perfluoroheptane sulfonate (PFHpS)	mg/kg	0.0016	<0.0016	<0.0016
Perfluorooctane sulfonate (PFOS)	mg/kg	0.0016	<0.0016	0.0017
Sum PFOS and PFHXS	mg/kg	0.0016	<0.0016	0.0017
Sum of US EPA PFAS (PFOS+PFOA)	mg/kg	0.0016	<0.0016	0.0017
Sum of enHealth PFAS (PFHxS+PFOS+PFOA)	mg/kg	0.0016	<0.0016	0.0017
Perfluorononane sulfonate (PFNS)	mg/kg	0.0016	<0.0016	<0.0016
Perfluorodecane sulfonate (PFDS)	mg/kg	0.0016	<0.0016	<0.0016
Perfluorododecane sulfonate (PFDoS)	mg/kg	0.0016	<0.0016	<0.0016
1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS)	mg/kg	0.0016	<0.0016	<0.0016
1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS)	mg/kg	0.0016	<0.0016	<0.0016
1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS)	mg/kg	0.0016	<0.0016	<0.0016
1H,1H,2H,2H-Perfluorododecanesulfonic acid (10:2)	mg/kg	0.0016	<0.0016	<0.0016
Perfluoroctane sulfonamide (PFOSA)	mg/kg	0.0016	<0.0016	<0.0016
N-Methylperfluoroctane sulfonamide (N-MeFOSA)	mg/kg	0.008	<0.008	<0.008
N-Ethylperfluoroctane sulfonamide (N-EtFOSA)	mg/kg	0.008	<0.008	<0.008
2-(N-Methylperfluorooctane sulfonamido)-ethanol	mg/kg	0.016	<0.016	<0.016
2-(N-Ethylperfluorooctane sulfonamido)-ethanol	mg/kg	0.016	<0.016	<0.016
N-Methylperfluorooctanesulfonamidoacetic acid	mg/kg	0.008	<0.008	<0.008
N-Ethylperfluorooctanesulfonamidoacetic Acid	mg/kg	0.008	<0.008	<0.008
Total of PFAS (n=30)	mg/kg	0.08	<0.08	<0.08

Field pH for Acid Sulphate Soil [AN104] Tested: 31/5/2023

PARAMETER	UOM	LOR	BH1M_0.7-0.8 SOIL - 25/5/2023 SE248200.011	BH2M_0.7-0.8 SOIL - 25/5/2023 SE248200.012	BH3M_0.7-0.8 SOIL - 26/5/2023 SE248200.013	BH4_0.7-0.8 SOIL - 25/5/2023 SE248200.014	TP3_0.7-0.8 SOIL - 26/5/2023 SE248200.018
pHf	pH Units	-	7.6	4.9	4.9	5.9	5.6
pHfox	pH Units	-	7.2	4.6	4.6	5.6	3.2
Reaction Rate (pHfox)*	No unit	-	2	1	1	1	3
pH Difference*	pH Units	-10	0.4	0.3	0.3	0.3	2.4

PARAMETER	UOM	LOR	TP5_0.7-0.8 SOIL - 26/5/2023 SE248200.020	TP6_0.7-0.8 SOIL - 26/5/2023 SE248200.021	HA3_0.7-0.8 SOIL - 26/5/2023 SE248200.022	BH1M_1.2-1.3 SOIL - 26/5/2023 SE248200.023	TP3_1.2-1.3 SOIL - 26/5/2023 SE248200.024
pHf	pH Units	-	6.5	4.8	5.3	7.4	5.9
pHfox	pH Units	-	6.8	3.6	4.7	5.3	4.6
Reaction Rate (pHfox)*	No unit	-	1	3	2	1	2
pH Difference*	pH Units	-10	-0.3	1.3	0.5	2.1	1.3

METHOD	METHODOLOGY SUMMARY
AN002	The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.
AN040/AN320	A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.
AN040	A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analysis by AAS or ICP as per USEPA Method 200.8.
AN077	Hydrogen cyanide is liberated from an acidified alkali soil extract by distillation and purging with air. The hydrogen cyanide gas is then collected by passing it through a sodium hydroxide scrubbing solution. The scrubbing solution will then be analysed for cyanide by the appropriate method.
AN104	pHF is determined on an extract of approximately 2g of as received sample in approximately 10 mL of deionised water with pH determined after standing 30 minutes.
AN104	pHFox is determined on an extract of approximately 2g of as received sample with a few mLs of 30% hydrogen peroxide (adjusted to pH 4.5 to 5.5) with the extract reaction being rated from slight to extreme, with pH determined after reaction is complete and extract has cooled. Referenced to ASS Laboratory Methods Guidelines , method 23Af-Bf, 2004. 0 No Reaction 1 Slight Reaction 2 Moderate Reaction 3 Strong/High Reaction 4 Extreme/Vigorous Reaction (gas evolution and heat generation)
AN287	A buffered distillate or water sample is treated with chloramine/barbituric acid reagents and the intensity of the colour developed is proportional to the cyanide concentration by DA.
AN295	For Soil, a 1:10 NaOH extraction is made and analysed after 16 hours. The soil extract or water sample is distilled in a phosphoric acid stream. Phenolic compounds in the distillate react with a reagent stream of potassium hexacyanoferrate(III) and 4-Amino-2,3-dimethyl-3-pryazolin-5-one in an alkaline medium to form a coloured complex which is analysed spectrophotometrically onboard a continuous flow analyser.
AN312	Mercury by Cold Vapour AAS in Soils: After digestion with nitric acid, hydrogen peroxide and hydrochloric acid , mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser . Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500
AN403	Total Recoverable Hydrocarbons: Determination of Hydrocarbons by gas chromatography after a solvent extraction. Detection is by flame ionisation detector (FID) that produces an electronic signal in proportion to the combustible matter passing through it. Total Recoverable Hydrocarbons (TRH) are routinely reported as four alkane groupings based on the carbon chain length of the compounds: C6-C9, C10-C14, C15-C28 and C29-C36 and in recognition of the NEPM 1999 (2013), >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). F2 is reported directly and also corrected by subtracting Naphthalene (from VOC method AN433) where available.
AN403	Additionally, the volatile C6-C9 fraction may be determined by a purge and trap technique and GC/MS because of the potential for volatiles loss. Total Recoverable Hydrocarbons - Silica (TRH-Si) follows the same method of analysis after silica gel cleanup of the solvent extract. Aliphatic/Aromatic Speciation follows the same method of analysis after fractionation of the solvent extract over silica with differential polarity of the eluent solvents .
AN403	The GC/FID method is not well suited to the analysis of refined high boiling point materials (ie lubricating oils or greases) but is particularly suited for measuring diesel, kerosene and petrol if care to control volatility is taken. This method will detect naturally occurring hydrocarbons, lipids, animal fats, phenols and PAHs if they are present at sufficient levels, dependent on the use of specific cleanup/fractionation techniques. Reference USEPA 3510B, 8015B.
AN420	(SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols (etc) in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D). Total PAH calculated from individual analyte detections at or above the limit of reporting .
AN420	SVOC Compounds: Semi-Volatile Organic Compounds (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN433	VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC`s are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.

AN602/AS4964	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic \`clues\`, which provide a reasonable degree of certainty, dispersion staining is a mandatory \`clue\` for positive identification. If sufficient \`clues\` are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602/AS4964	Fibres/material that cannot be unequivocably identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf) The fibres detected may or may not be asbestos fibres.
AN602/AS4964	AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples, Section 8.4, Trace Analysis Criteria, Note 4 states:"Depending upon sample condition and fibre type, the detection/reporting limit (RL) of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."
AN602/AS4964	The sample can be reported “no asbestos found at the reporting limit (RL) of 0.1 g/kg” (<0.01%w/w) where AN602 section 4.5 of this method has been followed, and if- (a) no trace asbestos fibres have been detected (i.e. no ‘respirable’ fibres): (b) the estimated weight of non-respirable asbestos fibre bundles and/or the estimated weight of asbestos in asbestos-containing materials are found to be less than 0.1g/kg: and (c) these non-respirable asbestos fibre bundles and/or the asbestos containing materials are only visible under stereo-microscope viewing conditions.
AN605	This technique gravimetrically determines the mass of Bonded Asbestos Containing Material retained on a 7mm Sieve and assumes that 15% of this ACM is asbestos. This calculated asbestos weight is then calculated as a percentage of the total sample weight. Any fibrous asbestos (FA) found in this fraction will be added to the 2-7mm fraction and its mass recorded there.
AN605	This technique also gravimetrically determines the mass of Fibrous Asbestos (FA) and Asbestos Fines (AF) Containing Material retained on and passing a 2mm sieve post 7mm sieving. Assumes that FA and AF are 100% asbestos containing. This calculated asbestos weight is then calculated as a percentage of the total sample weight. This does not include free/respirable fibres which are only observed by standard trace analysis as per AN602.
AN605	Bonded asbestos containing material (Bonded ACM) comprises asbestos-containing-material which is sound in condition. Fibrous asbestos (FA) comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. Asbestos fines (AF) includes free fibres, small fibre bundles and also small fragments of bonded ACM that passes through a 7mm sieve - which implies that the bonded ACM fragments have a substantial degree of damage which increases the potential for fibre release.
AN-605	Insofar as is technically feasible, this report is consistent with the analytical reporting recommendations in the Western Australian Department of Health Guidelines for the Assessment Remediation and Management of Asbestos - Contaminated Sites in Western Australia - May 2009 and NEPM 1999 (2013) schedule B1 section 4..
MA-1523	This method covers the analysis of per- and polyfluoroalkyl substances (PFAS) in aqueous, solid and biosolid samples and solvent extracts, determined as the total of linear and branched isomers. After spiking with isotopically labelled quantification surrogates and clean-up via SPE cartridges sample extracts are analysed by liquid chromatography/mass spectrometry (LC-MS/MS). PFAS concentrations are determined by isotope dilution quantification.

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:

a. 1 Bq is equivalent to 27 pCi
b. 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.

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS		LABORATORY DETAILS	
Contact	Sergio Raposeira	Manager	Huong Crawford
Client	EI AUSTRALIA	Laboratory	SGS Alexandria Environmental
Address	SUITE 6.01 55 MILLER STREET PYRMONT NSW 2009	Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	61 2 95160722	Telephone	+61 2 8594 0400
Facsimile	(Not specified)	Facsimile	+61 2 8594 0499
Email	sergio.raposeira@eiaustralia.com.au	Email	au.environmental.sydney@sgs.com
Project	**E26047 19 Hope Street Melrose Park**	SGS Reference	**SE248200 R0**
Order Number	**E26047**	Date Received	26 May 2023
Samples	10	Date Reported	06 Jun 2023

COMMENTS

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

PFAS subcontracted to SGS Melbourne, 10/585 Blackburn Road, Notting Hill, VIC, NATA Accreditation Number. 2562/14420. Report No. ME334448.

MA-1523: Majority of surrogate and spike recoveries within acceptance criteria.

No respirable fibres detected in all soil samples using trace analysis technique.
Asbestos analysed by Approved Identifiers Ravee Sivasubramaniam and Yusuf Kuthpudin .
Sample # 3: Asbestos found in approx 10x5x3mm cement sheet fragments X6.

SIGNATORIES

S. Ravendra.

Ravee SIVASUBRAMANIAM
Hygiene Team Leader

RESULTS

Fibre Identification in soil   Method AS4964/AN602

Laboratory Reference	Client Reference	Matrix	Sample Description	Date Sampled	Fibre Identification	Est.%w/w*
SE248200.001	BH1M_0.2-0.3	Soil	717g Clay, Sand, Soil, Rocks	25 May 2023	No Asbestos Found at RL of 0.1g/kg	<0.01
SE248200.002	BH2M_0.2-0.3	Soil	936g Clay, Sand, Soil, Rocks	25 May 2023	No Asbestos Found at RL of 0.1g/kg Organic Fibres Detected	<0.01
SE248200.003	BH3M_0.2-0.3	Soil	455g Clay, Sand, Soil, Rocks	26 May 2023	Chrysotile Asbestos Found at RL of 0.1g/kg	<0.01
SE248200.004	BH4_0.2-0.3	Soil	812g Clay, Sand, Soil, Rocks	25 May 2023	No Asbestos Found at RL of 0.1g/kg Organic Fibres Detected	<0.01
SE248200.005	BH5_0.2-0.3	Soil	295g Clay, Sand, Rocks	26 May 2023	No Asbestos Found at RL of 0.1g/kg	<0.01
SE248200.006	TP1_0.2-0.3	Soil	157g Clay, Sand, Soil, Rocks	26 May 2023	No Asbestos Found at RL of 0.1g/kg Organic Fibres Detected	<0.01
SE248200.007	TP2_0.2-0.3	Soil	1022g Clay, Sand, Soil, Rocks	26 May 2023	No Asbestos Found at RL of 0.1g/kg Organic Fibres Detected	<0.01
SE248200.008	TP3_0.2-0.3	Soil	736g Clay, Sand, Soil, Rocks	26 May 2023	No Asbestos Found at RL of 0.1g/kg	<0.01
SE248200.009	TP6_0.2-0.3	Soil	928g Clay, Sand, Soil, Rocks	26 May 2023	No Asbestos Found at RL of 0.1g/kg Organic Fibres Detected	<0.01
SE248200.010	HA3_0.2-0.3	Soil	225g Clay, Sand, Rocks	26 May 2023	No Asbestos Found at RL of 0.1g/kg	<0.01

METHOD	METHODOLOGY SUMMARY
AN602/AS4964	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic `clues`, which provide a reasonable degree of certainty, dispersion staining is a mandatory `clue` for positive identification. If sufficient `clues` are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602/AS4964	Fibres/material that cannot be unequivocably identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf) The fibres detected may or may not be asbestos fibres.
AN602/AS4964	AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples, Section 8.4, Trace Analysis Criteria, Note 4 states:"Depending upon sample condition and fibre type, the detection/reporting limit (RL) of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."
AN602/AS4964	The sample can be reported "no asbestos found at the reporting limit (RL) of 0.1 g/kg" (<0.01%w/w) where AN602 section 4.5 of this method has been followed, and if- (a) no trace asbestos fibres have been detected (i.e. no 'respirable' fibres): (b) the estimated weight of non-respirable asbestos fibre bundles and/or the estimated weight of asbestos in asbestos-containing materials are found to be less than 0.1g/kg: and (c) these non-respirable asbestos fibre bundles and/or the asbestos containing materials are only visible under stereo-microscope viewing conditions.

FOOTNOTES

Amosite	-	Brown Asbestos	NA	-	Not Analysed
Chrysotile	-	White Asbestos	LNR	-	Listed, Not Required
Crocidolite	-	Blue Asbestos	*	-	NATA accreditation does not cover the performance of this service.
Amphiboles	-	Amosite and/or Crocidolite	**	-	Indicative data, theoretical holding time exceeded.
			***	-	Indicates that both * and ** apply.

(In reference to soil samples only) This report does not comply with the analytical reporting recommendations in the Western Australian Department of Health Guidelines for the Assessment and Remediation and Management of Asbestos Contaminated sites in Western Australia - May 2009.

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

Where reported: 'Asbestos Detected': Asbestos detected by polarised light microscopy, including dispersion staining.
Where reported: 'No Asbestos Found': No Asbestos Found by polarised light microscopy, including dispersion staining.
Where reported: 'UMF Detected': Mineral fibres of unknown type detected by polarised light microscopy, including dispersion staining. Confirmation by another independent analytical technique may be necessary.

Even after disintegration it can be very difficult, or impossible, to detect the presence of asbestos in some asbestos-containing bulk materials using polarised light microscopy. This is due to the low grade or small length or diameter of asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials.

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.

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS		LABORATORY DETAILS	
Contact	Huong Crawford	Manager	Adam Atkinson
Client	SGS I&E SYDNEY	Laboratory	SGS Melbourne EH&S
Address	Unit 16, 33 Maddox Street Alexandria NSW 2015	Address	10/585 Blackburn Road Notting Hill Victoria 3168
Telephone	02 8594 0400	Telephone	+61395743200
Facsimile	02 8594 0499	Facsimile	+61395743399
Email	au.environmental.sydney@sgs.com	Email	Au.SampleReceipt.Melbourne@sgs.com
Project	**E26047 19 Hope Street Melrose Park**	SGS Reference	**ME334448 R0**
Order Number	**SE248200**	Date Received	30 May 2023
Samples	26	Date Reported	02 Jun 2023

COMMENTS

Accredited for compliance with ISO/IEC 17025 - Testing. NATA accredited laboratory 2562 (14420/22793/24472).

SE248200.010 was also received but not included on the XML. Sydney advised in email on 31/5/23 to not test SE248200.010
MA-1523: Majority of surrogate and spike recoveries within acceptance criteria.

SIGNATORIES

Susan WAN
Senior Chemist

Parameter	Units	LOR	Sample Number: ME334448.001 Sample Matrix: Soil Sample Date: 25 May 2023 Sample Name: SE248200.001	Sample Number: ME334448.002 Sample Matrix: Soil Sample Date: 25 May 2023 Sample Name: SE248200.002	Sample Number: ME334448.003 Sample Matrix: Soil Sample Date: 26 May 2023 Sample Name: SE248200.003	Sample Number: ME334448.004 Sample Matrix: Soil Sample Date: 25 May 2023 Sample Name: SE248200.004

Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples Method: MA-1523 Tested: 31/5/2023

Parameter	Units	LOR	ME334448.001	ME334448.002	ME334448.003	ME334448.004
Perfluorobutanoic acid (PFBA)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluoropentanoic acid (PFPeA)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluorohexanoic acid (PFHxA)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluorooctanoic Acid (PFOA)	mg/kg	0.0008	<0.0008	<0.0008	<0.0008	<0.0008
Perfluorononanoic acid (PFNA)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluorodecanoic acid (PFDA)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluoroundecanoic acid (PFUnA)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluorododecanoic acid (PFDoA)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluorotridecanoic acid (PFTrDA)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluorotetradecanoic acid (PFTeDA)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluorohexadecanoic acid (PFHxDA)	mg/kg	0.0032	<0.0032	<0.0032	<0.0032	<0.0032
Perfluorobutane sulfonate (PFBS)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluoropentane sulfonate (PFPeS)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluorohexane sulfonate (PFHxS)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluoroheptane sulfonate (PFHpS)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluorooctane sulfonate (PFOS)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Sum PFOS and PFHXS	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Sum of US EPA PFAS (PFOS+PFOA)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Sum of enHealth PFAS (PFHxS+PFOS+PFOA)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluorononane sulfonate (PFNS)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluorodecane sulfonate (PFDS)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluorododecane sulfonate (PFDoS)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016
1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016
1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016
1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016
1H,1H,2H,2H-Perfluorododecanesulfonic acid (10:2) (10:2	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluoroctane sulfonamide (PFOSA)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016
N-Methylperfluoroctane sulfonamide (N-MeFOSA)	mg/kg	0.008	<0.008	<0.008	<0.008	<0.008
N-Ethylperfluoroctane sulfonamide (N-EtFOSA)	mg/kg	0.008	<0.008	<0.008	<0.008	<0.008
2-(N-Methylperfluorooctane sulfonamido)-ethanol	mg/kg	0.016	<0.016	<0.016	<0.016	<0.016
2-(N-Ethylperfluorooctane sulfonamido)-ethanol	mg/kg	0.016	<0.016	<0.016	<0.016	<0.016
N-Methylperfluorooctanesulfonamidoacetic acid	mg/kg	0.008	<0.008	<0.008	<0.008	<0.008
N-Ethylperfluorooctanesulfonamidoacetic Acid	mg/kg	0.008	<0.008	<0.008	<0.008	<0.008
Total of PFAS (n=30)	mg/kg	0.08	<0.08	<0.08	<0.08	<0.08
(13C4-PFBA) Isotopically Labelled Internal Recovery	%	-	108	110	112	110
(13C5-PFPeA) Isotopically Labelled Internal Recovery	%	-	102	100	108	109
(13C5-PFHxA) Isotopically Labelled Internal Recovery	%	-	116	106	106	105
(13C4-PFHpA) Isotopically Labelled Internal Recovery	%	-	135	118	111	115
(13C4_PFOA) Isotopically Labelled Internal Recovery	%	-	120	106	120	110
(13C9-PFNA) Isotopically Labelled Internal Recovery	%	-	109	114	123	118
(13C6-PFDA) Isotopically Labelled Internal Recovery	%	-	108	128	93	105
(13C7-PFUdA) Isotopically Labelled Internal Recovery	%	-	125	110	105	100
(13C2-PFDoA) Isotopically Labelled Internal Recovery	%	-	111	110	126	116
(13C2_PFTeDA) Isotopically Labelled Internal Recovery	%	-	95	105	114	76
(13C2-PFHxDA) Isotopically Labelled Internal Recovery	%	-	36	47	44	33
(13C3-PFBS) Isotopically Labelled Internal Recovery	%	-	99	120	103	111
(13C3-PFHxS) Isotopically Labelled Internal Recovery	%	-	111	126	103	115
(13C8-PFOS) Isotopically Labelled Internal Recovery	%	-	122	107	126	132
(13C2-4:2 FTS) Isotopically Labelled Internal Recovery	%	-	141	135	131	126
(13C2-6:2 FTS) Isotopically Labelled Internal Recovery	%	-	145	140	143	119
(13C2-8:2 FTS) Isotopically Labelled Internal Recovery	%	-	86	130	109	101
(13C8-PFOSA) Isotopically Labelled Internal Recovery	%	-	106	80	124	113
(D3-N-MeFOSA) Isotopically Labelled Internal Recovery	%	-	69	85	131	85
(D5-N-EtFOSA) Isotopically Labelled Internal Recovery	%	-	86	70	112	91
(D7-N-MeFOSE) Isotopically Labelled Internal Recovery	%	-	108	97	122	102
(D9-N-EtFOSE) Isotopically Labelled Internal Recovery	%	-	108	90	110	118
(D3-N-MeFOSAA) Isotopically Labelled Internal Recovery	%	-	99	103	148	116
(D5-N-EtFOSAA) Isotopically Labelled Internal Recovery	%	-	119	123	148	93

		Sample Number	ME334448.001	ME334448.002	ME334448.003	ME334448.004
		Sample Matrix	Soil	Soil	Soil	Soil
		Sample Date	25 May 2023	25 May 2023	26 May 2023	25 May 2023
		Sample Name	SE248200.001	SE248200.002	SE248200.003	SE248200.004
Parameter	Units	LOR				

Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples Method: MA-1523 Tested: 31/5/2023 (continued)

Moisture Content Method: AN002 Tested: 31/5/2023

Parameter	Units	LOR	ME334448.001	ME334448.002	ME334448.003	ME334448.004
% Moisture	%w/w	1	12.8	18.6	15.8	30.7

Parameter	Units	LOR	ME334448.005	ME334448.006	ME334448.007	ME334448.008
Sample Matrix			Soil	Soil	Soil	Soil
Sample Date			26 May 2023	26 May 2023	26 May 2023	26 May 2023
Sample Name			SE248200.005	SE248200.006	SE248200.007	SE248200.008
Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples Method: MA-1523 Tested: 31/5/2023						
Perfluorobutanoic acid (PFBA)	mg/kg	0.0016	<0.0016	-	-	<0.0016
Perfluoropentanoic acid (PFPeA)	mg/kg	0.0016	<0.0016	-	-	<0.0016
Perfluorohexanoic acid (PFHxA)	mg/kg	0.0016	<0.0016	-	-	<0.0016
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.0016	<0.0016	-	-	<0.0016
Perfluorooctanoic Acid (PFOA)	mg/kg	0.0008	<0.0008	-	-	<0.0008
Perfluorononanoic acid (PFNA)	mg/kg	0.0016	<0.0016	-	-	<0.0016
Perfluorodecanoic acid (PFDA)	mg/kg	0.0016	<0.0016	-	-	<0.0016
Perfluoroundecanoic acid (PFUnA)	mg/kg	0.0016	<0.0016	-	-	<0.0016
Perfluorododecanoic acid (PFDoA)	mg/kg	0.0016	<0.0016	-	-	<0.0016
Perfluorotridecanoic acid (PFTrDA)	mg/kg	0.0016	<0.0016	-	-	<0.0016
Perfluorotetradecanoic acid (PFTeDA)	mg/kg	0.0016	<0.0016	-	-	<0.0016
Perfluorohexadecanoic acid (PFHxDA)	mg/kg	0.0032	<0.0032	-	-	<0.0032
Perfluorobutane sulfonate (PFBS)	mg/kg	0.0016	<0.0016	-	-	<0.0016
Perfluoropentane sulfonate (PFPeS)	mg/kg	0.0016	<0.0016	-	-	<0.0016
Perfluorohexane sulfonate (PFHxS)	mg/kg	0.0016	<0.0016	-	-	<0.0016
Perfluoroheptane sulfonate (PFHpS)	mg/kg	0.0016	<0.0016	-	-	<0.0016
Perfluorooctane sulfonate (PFOS)	mg/kg	0.0016	**0.0024**	-	-	<0.0016
Sum PFOS and PFHXS	mg/kg	0.0016	**0.0024**	-	-	<0.0016
Sum of US EPA PFAS (PFOS+PFOA)	mg/kg	0.0016	**0.0024**	-	-	<0.0016
Sum of enHealth PFAS (PFHxS+PFOS+PFOA)	mg/kg	0.0016	**0.0024**	-	-	<0.0016
Perfluorononane sulfonate (PFNS)	mg/kg	0.0016	<0.0016	-	-	<0.0016
Perfluorodecane sulfonate (PFDS)	mg/kg	0.0016	<0.0016	-	-	<0.0016
Perfluorododecane sulfonate (PFDoS)	mg/kg	0.0016	<0.0016	-	-	<0.0016
1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS)	mg/kg	0.0016	<0.0016	-	-	<0.0016
1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS)	mg/kg	0.0016	<0.0016	-	-	<0.0016
1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS)	mg/kg	0.0016	<0.0016	-	-	<0.0016
1H,1H,2H,2H-Perfluorododecanesulfonic acid (10:2) (10:2	mg/kg	0.0016	<0.0016	-	-	<0.0016
Perfluoroctane sulfonamide (PFOSA)	mg/kg	0.0016	<0.0016	-	-	<0.0016
N-Methylperfluoroctane sulfonamide (N-MeFOSA)	mg/kg	0.008	<0.008	-	-	<0.008
N-Ethylperfluoroctane sulfonamide (N-EtFOSA)	mg/kg	0.008	<0.008	-	-	<0.008
2-(N-Methylperfluorooctane sulfonamido)-ethanol	mg/kg	0.016	<0.016	-	-	<0.016
2-(N-Ethylperfluorooctane sulfonamido)-ethanol	mg/kg	0.016	<0.016	-	-	<0.016
N-Methylperfluorooctanesulfonamidoacetic acid	mg/kg	0.008	<0.008	-	-	<0.008
N-Ethylperfluorooctanesulfonamidoacetic Acid	mg/kg	0.008	<0.008	-	-	<0.008
Total of PFAS (n=30)	mg/kg	0.08	<0.08	-	-	<0.08
(13C4-PFBA) Isotopically Labelled Internal Recovery	%	-	**111**	-	-	**112**
(13C5-PFPeA) Isotopically Labelled Internal Recovery	%	-	**112**	-	-	**111**
(13C5-PFHxA) Isotopically Labelled Internal Recovery	%	-	**115**	-	-	**114**
(13C4-PFHpA) Isotopically Labelled Internal Recovery	%	-	**125**	-	-	**108**
(13C4_PFOA) Isotopically Labelled Internal Recovery	%	-	**121**	-	-	**104**
(13C9-PFNA) Isotopically Labelled Internal Recovery	%	-	**117**	-	-	**98**
(13C6-PFDA) Isotopically Labelled Internal Recovery	%	-	**110**	-	-	**110**
(13C7-PFUdA) Isotopically Labelled Internal Recovery	%	-	**130**	-	-	**123**
(13C2-PFDoA) Isotopically Labelled Internal Recovery	%	-	**118**	-	-	**114**
(13C2_PFTeDA) Isotopically Labelled Internal Recovery	%	-	**104**	-	-	**129**
(13C2-PFHxDA) Isotopically Labelled Internal Recovery	%	-	**28**	-	-	**63**
(13C3-PFBS) Isotopically Labelled Internal Recovery	%	-	**98**	-	-	**119**
(13C3-PFHxS) Isotopically Labelled Internal Recovery	%	-	**114**	-	-	**104**
(13C8-PFOS) Isotopically Labelled Internal Recovery	%	-	**89**	-	-	**90**
(13C2-4:2 FTS) Isotopically Labelled Internal Recovery	%	-	**110**	-	-	**122**
(13C2-6:2 FTS) Isotopically Labelled Internal Recovery	%	-	**121**	-	-	**136**
(13C2-8:2 FTS) Isotopically Labelled Internal Recovery	%	-	**102**	-	-	**98**
(13C8-PFOSA) Isotopically Labelled Internal Recovery	%	-	**76**	-	-	**89**
(D3-N-MeFOSA) Isotopically Labelled Internal Recovery	%	-	**63**	-	-	**70**
(D5-N-EtFOSA) Isotopically Labelled Internal Recovery	%	-	**53**	-	-	**64**
(D7-N-MeFOSE) Isotopically Labelled Internal Recovery	%	-	**71**	-	-	**83**
(D9-N-EtFOSE) Isotopically Labelled Internal Recovery	%	-	**59**	-	-	**77**
(D3-N-MeFOSAA) Isotopically Labelled Internal Recovery	%	-	**84**	-	-	**90**
(D5-N-EtFOSAA) Isotopically Labelled Internal Recovery	%	-	**79**	-	-	**76**

Parameter	Units	LOR	ME334448.005 Soil 26 May 2023 SE248200.005	ME334448.006 Soil 26 May 2023 SE248200.006	ME334448.007 Soil 26 May 2023 SE248200.007	ME334448.008 Soil 26 May 2023 SE248200.008

Sample Number / Sample Matrix / Sample Date / Sample Name

Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples Method: MA-1523 Tested: 31/5/2023 (continued)

Moisture Content Method: AN002 Tested: 31/5/2023

Parameter	Units	LOR	ME334448.005	ME334448.006	ME334448.007	ME334448.008
% Moisture	%w/w	1	19.2	-	-	22.9

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	ME334448.009 Soil 26 May 2023 SE248200.009	ME334448.010 Soil 26 May 2023 SE248200.010	ME334448.011 Soil 25 May 2023 SE248200.011	ME334448.012 Soil 25 May 2023 SE248200.012

Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples Method: MA-1523 Tested: 31/5/2023

Parameter	Units	LOR	ME334448.009	ME334448.010	ME334448.011	ME334448.012
Perfluorobutanoic acid (PFBA)	mg/kg	0.0016	<0.0016	-	-	-
Perfluoropentanoic acid (PFPeA)	mg/kg	0.0016	<0.0016	-	-	-
Perfluorohexanoic acid (PFHxA)	mg/kg	0.0016	<0.0016	-	-	-
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.0016	<0.0016	-	-	-
Perfluorooctanoic Acid (PFOA)	mg/kg	0.0008	<0.0008	-	-	-
Perfluorononanoic acid (PFNA)	mg/kg	0.0016	<0.0016	-	-	-
Perfluorodecanoic acid (PFDA)	mg/kg	0.0016	<0.0016	-	-	-
Perfluoroundecanoic acid (PFUnA)	mg/kg	0.0016	<0.0016	-	-	-
Perfluorododecanoic acid (PFDoA)	mg/kg	0.0016	<0.0016	-	-	-
Perfluorotridecanoic acid (PFTrDA)	mg/kg	0.0016	<0.0016	-	-	-
Perfluorotetradecanoic acid (PFTeDA)	mg/kg	0.0016	<0.0016	-	-	-
Perfluorohexadecanoic acid (PFHxDA)	mg/kg	0.0032	<0.0032	-	-	-
Perfluorobutane sulfonate (PFBS)	mg/kg	0.0016	<0.0016	-	-	-
Perfluoropentane sulfonate (PFPeS)	mg/kg	0.0016	<0.0016	-	-	-
Perfluorohexane sulfonate (PFHxS)	mg/kg	0.0016	<0.0016	-	-	-
Perfluoroheptane sulfonate (PFHpS)	mg/kg	0.0016	<0.0016	-	-	-
Perfluorooctane sulfonate (PFOS)	mg/kg	0.0016	**0.0017**	-	-	-
Sum PFOS and PFHXS	mg/kg	0.0016	**0.0017**	-	-	-
Sum of US EPA PFAS (PFOS+PFOA)	mg/kg	0.0016	**0.0017**	-	-	-
Sum of enHealth PFAS (PFHxS+PFOS+PFOA)	mg/kg	0.0016	**0.0017**	-	-	-
Perfluorononane sulfonate (PFNS)	mg/kg	0.0016	<0.0016	-	-	-
Perfluorodecane sulfonate (PFDS)	mg/kg	0.0016	<0.0016	-	-	-
Perfluorododecane sulfonate (PFDoS)	mg/kg	0.0016	<0.0016	-	-	-
1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS)	mg/kg	0.0016	<0.0016	-	-	-
1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS)	mg/kg	0.0016	<0.0016	-	-	-
1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS)	mg/kg	0.0016	<0.0016	-	-	-
1H,1H,2H,2H-Perfluorododecanesulfonic acid (10:2) (10:2	mg/kg	0.0016	<0.0016	-	-	-
Perfluoroctane sulfonamide (PFOSA)	mg/kg	0.0016	<0.0016	-	-	-
N-Methylperfluoroctane sulfonamide (N-MeFOSA)	mg/kg	0.008	<0.008	-	-	-
N-Ethylperfluoroctane sulfonamide (N-EtFOSA)	mg/kg	0.008	<0.008	-	-	-
2-(N-Methylperfluorooctane sulfonamido)-ethanol	mg/kg	0.016	<0.016	-	-	-
2-(N-Ethylperfluorooctane sulfonamido)-ethanol	mg/kg	0.016	<0.016	-	-	-
N-Methylperfluorooctanesulfonamidoacetic acid	mg/kg	0.008	<0.008	-	-	-
N-Ethylperfluorooctanesulfonamidoacetic Acid	mg/kg	0.008	<0.008	-	-	-
Total of PFAS (n=30)	mg/kg	0.08	<0.08	-	-	-
(13C4-PFBA) Isotopically Labelled Internal Recovery	%	-	114	-	-	-
(13C5-PFPeA) Isotopically Labelled Internal Recovery	%	-	111	-	-	-
(13C5-PFHxA) Isotopically Labelled Internal Recovery	%	-	102	-	-	-
(13C4-PFHpA) Isotopically Labelled Internal Recovery	%	-	107	-	-	-
(13C4_PFOA) Isotopically Labelled Internal Recovery	%	-	94	-	-	-
(13C9-PFNA) Isotopically Labelled Internal Recovery	%	-	101	-	-	-
(13C6-PFDA) Isotopically Labelled Internal Recovery	%	-	109	-	-	-
(13C7-PFUdA) Isotopically Labelled Internal Recovery	%	-	116	-	-	-
(13C2-PFDoA) Isotopically Labelled Internal Recovery	%	-	111	-	-	-
(13C2_PFTeDA) Isotopically Labelled Internal Recovery	%	-	80	-	-	-
(13C2-PFHxDA) Isotopically Labelled Internal Recovery	%	-	26	-	-	-
(13C3-PFBS) Isotopically Labelled Internal Recovery	%	-	119	-	-	-
(13C3-PFHxS) Isotopically Labelled Internal Recovery	%	-	140	-	-	-
(13C8-PFOS) Isotopically Labelled Internal Recovery	%	-	106	-	-	-
(13C2-4:2 FTS) Isotopically Labelled Internal Recovery	%	-	129	-	-	-
(13C2-6:2 FTS) Isotopically Labelled Internal Recovery	%	-	147	-	-	-
(13C2-8:2 FTS) Isotopically Labelled Internal Recovery	%	-	129	-	-	-
(13C8-PFOSA) Isotopically Labelled Internal Recovery	%	-	108	-	-	-
(D3-N-MeFOSA) Isotopically Labelled Internal Recovery	%	-	87	-	-	-
(D5-N-EtFOSA) Isotopically Labelled Internal Recovery	%	-	76	-	-	-
(D7-N-MeFOSE) Isotopically Labelled Internal Recovery	%	-	99	-	-	-
(D9-N-EtFOSE) Isotopically Labelled Internal Recovery	%	-	107	-	-	-
(D3-N-MeFOSAA) Isotopically Labelled Internal Recovery	%	-	123	-	-	-
(D5-N-EtFOSAA) Isotopically Labelled Internal Recovery	%	-	104	-	-	-

Parameter	Units	LOR	ME334448.009	ME334448.010	ME334448.011	ME334448.012
Sample Number			ME334448.009	ME334448.010	ME334448.011	ME334448.012
Sample Matrix			Soil	Soil	Soil	Soil
Sample Date			26 May 2023	26 May 2023	25 May 2023	25 May 2023
Sample Name			SE248200.009	SE248200.010	SE248200.011	SE248200.012

Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples Method: MA-1523 Tested: 2/6/2023 (continued)

Moisture Content Method: AN002 Tested: 31/5/2023

Parameter	Units	LOR	ME334448.009	ME334448.010	ME334448.011	ME334448.012
% Moisture	%w/w	1	9.1	-	-	-

Parameter	Units	LOR	ME334448.013	ME334448.014	ME334448.015	ME334448.016
Sample Matrix			Soil	Soil	Soil	Soil
Sample Date			26 May 2023	25 May 2023	26 May 2023	26 May 2023
Sample Name			SE248200.013	SE248200.014	SE248200.015	SE248200.016
Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples Method: MA-1523 Tested: 2/6/2023						
Perfluorobutanoic acid (PFBA)	mg/kg	0.0016	-	-	-	-
Perfluoropentanoic acid (PFPeA)	mg/kg	0.0016	-	-	-	-
Perfluorohexanoic acid (PFHxA)	mg/kg	0.0016	-	-	-	-
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.0016	-	-	-	-
Perfluorooctanoic Acid (PFOA)	mg/kg	0.0008	-	-	-	-
Perfluorononanoic acid (PFNA)	mg/kg	0.0016	-	-	-	-
Perfluorodecanoic acid (PFDA)	mg/kg	0.0016	-	-	-	-
Perfluoroundecanoic acid (PFUnA)	mg/kg	0.0016	-	-	-	-
Perfluorododecanoic acid (PFDoA)	mg/kg	0.0016	-	-	-	-
Perfluorotridecanoic acid (PFTrDA)	mg/kg	0.0016	-	-	-	-
Perfluorotetradecanoic acid (PFTeDA)	mg/kg	0.0016	-	-	-	-
Perfluorohexadecanoic acid (PFHxDA)	mg/kg	0.0032	-	-	-	-
Perfluorobutane sulfonate (PFBS)	mg/kg	0.0016	-	-	-	-
Perfluoropentane sulfonate (PFPeS)	mg/kg	0.0016	-	-	-	-
Perfluorohexane sulfonate (PFHxS)	mg/kg	0.0016	-	-	-	-
Perfluoroheptane sulfonate (PFHpS)	mg/kg	0.0016	-	-	-	-
Perfluorooctane sulfonate (PFOS)	mg/kg	0.0016	-	-	-	-
Sum PFOS and PFHXS	mg/kg	0.0016	-	-	-	-
Sum of US EPA PFAS (PFOS+PFOA)	mg/kg	0.0016	-	-	-	-
Sum of enHealth PFAS (PFHxS+PFOS+PFOA)	mg/kg	0.0016	-	-	-	-
Perfluorononane sulfonate (PFNS)	mg/kg	0.0016	-	-	-	-
Perfluorodecane sulfonate (PFDS)	mg/kg	0.0016	-	-	-	-
Perfluorododecane sulfonate (PFDoS)	mg/kg	0.0016	-	-	-	-
1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS)	mg/kg	0.0016	-	-	-	-
1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS)	mg/kg	0.0016	-	-	-	-
1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS)	mg/kg	0.0016	-	-	-	-
1H,1H,2H,2H-Perfluorododecanesulfonic acid (10:2) (10:2	mg/kg	0.0016	-	-	-	-
Perfluoroctane sulfonamide (PFOSA)	mg/kg	0.0016	-	-	-	-
N-Methylperfluoroctane sulfonamide (N-MeFOSA)	mg/kg	0.008	-	-	-	-
N-Ethylperfluoroctane sulfonamide (N-EtFOSA)	mg/kg	0.008	-	-	-	-
2-(N-Methylperfluorooctane sulfonamido)-ethanol	mg/kg	0.016	-	-	-	-
2-(N-Ethylperfluorooctane sulfonamido)-ethanol	mg/kg	0.016	-	-	-	-
N-Methylperfluorooctanesulfonamidoacetic acid	mg/kg	0.008	-	-	-	-
N-Ethylperfluorooctanesulfonamidoacetic Acid	mg/kg	0.008	-	-	-	-
Total of PFAS (n=30)	mg/kg	0.08	-	-	-	-
(13C4-PFBA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C5-PFPeA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C5-PFHxA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C4-PFHpA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C4_PFOA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C9-PFNA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C6-PFDA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C7-PFUdA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C2-PFDoA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C2_PFTeDA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C2-PFHxDA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C3-PFBS) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C3-PFHxS) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C8-PFOS) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C2-4:2 FTS) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C2-6:2 FTS) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C2-8:2 FTS) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C8-PFOSA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(D3-N-MeFOSA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(D5-N-EtFOSA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(D7-N-MeFOSE) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(D9-N-EtFOSE) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(D3-N-MeFOSAA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(D5-N-EtFOSAA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-

Parameter	Units	LOR	ME334448.013	ME334448.014	ME334448.015	ME334448.016
Sample Number			ME334448.013	ME334448.014	ME334448.015	ME334448.016
Sample Matrix			Soil	Soil	Soil	Soil
Sample Date			26 May 2023	25 May 2023	26 May 2023	26 May 2023
Sample Name			SE248200.013	SE248200.014	SE248200.015	SE248200.016

Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples Method: MA-1523 Tested: 2/6/2023 (continued)

Moisture Content Method: AN002 Tested: 2/6/2023

Parameter	Units	LOR	ME334448.013	ME334448.014	ME334448.015	ME334448.016
% Moisture	%w/w	1	-	-	-	-

Parameter	Units	LOR	ME334448.017 Soil 26 May 2023 SE248200.017	ME334448.018 Soil 26 May 2023 SE248200.018	ME334448.019 Soil 26 May 2023 SE248200.019	ME334448.020 Soil 26 May 2023 SE248200.020
		Sample Number	ME334448.017	ME334448.018	ME334448.019	ME334448.020
		Sample Matrix	Soil	Soil	Soil	Soil
		Sample Date	26 May 2023	26 May 2023	26 May 2023	26 May 2023
		Sample Name	SE248200.017	SE248200.018	SE248200.019	SE248200.020

Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples Method: MA-1523 Tested: 2/6/2023

Parameter	Units	LOR	ME334448.017	ME334448.018	ME334448.019	ME334448.020
Perfluorobutanoic acid (PFBA)	mg/kg	0.0016	-	-	-	-
Perfluoropentanoic acid (PFPeA)	mg/kg	0.0016	-	-	-	-
Perfluorohexanoic acid (PFHxA)	mg/kg	0.0016	-	-	-	-
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.0016	-	-	-	-
Perfluorooctanoic Acid (PFOA)	mg/kg	0.0008	-	-	-	-
Perfluorononanoic acid (PFNA)	mg/kg	0.0016	-	-	-	-
Perfluorodecanoic acid (PFDA)	mg/kg	0.0016	-	-	-	-
Perfluoroundecanoic acid (PFUnA)	mg/kg	0.0016	-	-	-	-
Perfluorododecanoic acid (PFDoA)	mg/kg	0.0016	-	-	-	-
Perfluorotridecanoic acid (PFTrDA)	mg/kg	0.0016	-	-	-	-
Perfluorotetradecanoic acid (PFTeDA)	mg/kg	0.0016	-	-	-	-
Perfluorohexadecanoic acid (PFHxDA)	mg/kg	0.0032	-	-	-	-
Perfluorobutane sulfonate (PFBS)	mg/kg	0.0016	-	-	-	-
Perfluoropentane sulfonate (PFPeS)	mg/kg	0.0016	-	-	-	-
Perfluorohexane sulfonate (PFHxS)	mg/kg	0.0016	-	-	-	-
Perfluoroheptane sulfonate (PFHpS)	mg/kg	0.0016	-	-	-	-
Perfluorooctane sulfonate (PFOS)	mg/kg	0.0016	-	-	-	-
Sum PFOS and PFHXS	mg/kg	0.0016	-	-	-	-
Sum of US EPA PFAS (PFOS+PFOA)	mg/kg	0.0016	-	-	-	-
Sum of enHealth PFAS (PFHxS+PFOS+PFOA)	mg/kg	0.0016	-	-	-	-
Perfluorononane sulfonate (PFNS)	mg/kg	0.0016	-	-	-	-
Perfluorodecane sulfonate (PFDS)	mg/kg	0.0016	-	-	-	-
Perfluorododecane sulfonate (PFDoS)	mg/kg	0.0016	-	-	-	-
1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS)	mg/kg	0.0016	-	-	-	-
1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS)	mg/kg	0.0016	-	-	-	-
1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS)	mg/kg	0.0016	-	-	-	-
1H,1H,2H,2H-Perfluorododecanesulfonic acid (10:2) (10:2	mg/kg	0.0016	-	-	-	-
Perfluoroctane sulfonamide (PFOSA)	mg/kg	0.0016	-	-	-	-
N-Methylperfluoroctane sulfonamide (N-MeFOSA)	mg/kg	0.008	-	-	-	-
N-Ethylperfluoroctane sulfonamide (N-EtFOSA)	mg/kg	0.008	-	-	-	-
2-(N-Methylperfluorooctane sulfonamido)-ethanol	mg/kg	0.016	-	-	-	-
2-(N-Ethylperfluorooctane sulfonamido)-ethanol	mg/kg	0.016	-	-	-	-
N-Methylperfluorooctanesulfonamidoacetic acid	mg/kg	0.008	-	-	-	-
N-Ethylperfluorooctanesulfonamidoacetic Acid	mg/kg	0.008	-	-	-	-
Total of PFAS (n=30)	mg/kg	0.08	-	-	-	-
(13C4-PFBA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C5-PFPeA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C5-PFHxA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C4-PFHpA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C4_PFOA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C9-PFNA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C6-PFDA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C7-PFUdA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C2-PFDoA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C2_PFTeDA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C2-PFHxDA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C3-PFBS) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C3-PFHxS) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C8-PFOS) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C2-4:2 FTS) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C2-6:2 FTS) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C2-8:2 FTS) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C8-PFOSA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(D3-N-MeFOSA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(D5-N-EtFOSA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(D7-N-MeFOSE) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(D9-N-EtFOSE) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(D3-N-MeFOSAA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(D5-N-EtFOSAA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-

Parameter	Units	LOR	ME334448.017	ME334448.018	ME334448.019	ME334448.020
Sample Matrix			Soil	Soil	Soil	Soil
Sample Date			26 May 2023	26 May 2023	26 May 2023	26 May 2023
Sample Name			SE248200.017	SE248200.018	SE248200.019	SE248200.020

Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples Method: MA-1523 Tested: 2/6/2023 (continued)

Moisture Content Method: AN002 Tested: 2/6/2023

Parameter	Units	LOR	ME334448.017	ME334448.018	ME334448.019	ME334448.020
% Moisture	%w/w	1	-	-	-	-

Parameter	Units	LOR	ME334448.021 Soil 26 May 2023 SE248200.021	ME334448.022 Soil 26 May 2023 SE248200.022	ME334448.023 Soil 26 May 2023 SE248200.023	ME334448.024 Soil 26 May 2023 SE248200.024
Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples Method: MA-1523 Tested: 2/6/2023						
Perfluorobutanoic acid (PFBA)	mg/kg	0.0016	-	-	-	-
Perfluoropentanoic acid (PFPeA)	mg/kg	0.0016	-	-	-	-
Perfluorohexanoic acid (PFHxA)	mg/kg	0.0016	-	-	-	-
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.0016	-	-	-	-
Perfluorooctanoic Acid (PFOA)	mg/kg	0.0008	-	-	-	-
Perfluorononanoic acid (PFNA)	mg/kg	0.0016	-	-	-	-
Perfluorodecanoic acid (PFDA)	mg/kg	0.0016	-	-	-	-
Perfluoroundecanoic acid (PFUnA)	mg/kg	0.0016	-	-	-	-
Perfluorododecanoic acid (PFDoA)	mg/kg	0.0016	-	-	-	-
Perfluorotridecanoic acid (PFTrDA)	mg/kg	0.0016	-	-	-	-
Perfluorotetradecanoic acid (PFTeDA)	mg/kg	0.0016	-	-	-	-
Perfluorohexadecanoic acid (PFHxDA)	mg/kg	0.0032	-	-	-	-
Perfluorobutane sulfonate (PFBS)	mg/kg	0.0016	-	-	-	-
Perfluoropentane sulfonate (PFPeS)	mg/kg	0.0016	-	-	-	-
Perfluorohexane sulfonate (PFHxS)	mg/kg	0.0016	-	-	-	-
Perfluoroheptane sulfonate (PFHpS)	mg/kg	0.0016	-	-	-	-
Perfluorooctane sulfonate (PFOS)	mg/kg	0.0016	-	-	-	-
Sum PFOS and PFHXS	mg/kg	0.0016	-	-	-	-
Sum of US EPA PFAS (PFOS+PFOA)	mg/kg	0.0016	-	-	-	-
Sum of enHealth PFAS (PFHxS+PFOS+PFOA)	mg/kg	0.0016	-	-	-	-
Perfluorononane sulfonate (PFNS)	mg/kg	0.0016	-	-	-	-
Perfluorodecane sulfonate (PFDS)	mg/kg	0.0016	-	-	-	-
Perfluorododecane sulfonate (PFDoS)	mg/kg	0.0016	-	-	-	-
1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS)	mg/kg	0.0016	-	-	-	-
1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS)	mg/kg	0.0016	-	-	-	-
1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS)	mg/kg	0.0016	-	-	-	-
1H,1H,2H,2H-Perfluorododecanesulfonic acid (10:2) (10:2	mg/kg	0.0016	-	-	-	-
Perfluoroctane sulfonamide (PFOSA)	mg/kg	0.0016	-	-	-	-
N-Methylperfluoroctane sulfonamide (N-MeFOSA)	mg/kg	0.008	-	-	-	-
N-Ethylperfluoroctane sulfonamide (N-EtFOSA)	mg/kg	0.008	-	-	-	-
2-(N-Methylperfluorooctane sulfonamido)-ethanol	mg/kg	0.016	-	-	-	-
2-(N-Ethylperfluorooctane sulfonamido)-ethanol	mg/kg	0.016	-	-	-	-
N-Methylperfluorooctanesulfonamidoacetic acid	mg/kg	0.008	-	-	-	-
N-Ethylperfluorooctanesulfonamidoacetic Acid	mg/kg	0.008	-	-	-	-
Total of PFAS (n=30)	mg/kg	0.08	-	-	-	-
(13C4-PFBA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C5-PFPeA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C5-PFHxA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C4-PFHpA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C4_PFOA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C9-PFNA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C6-PFDA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C7-PFUdA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C2-PFDoA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C2_PFTeDA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C2-PFHxDA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C3-PFBS) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C3-PFHxS) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C8-PFOS) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C2-4:2 FTS) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C2-6:2 FTS) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C2-8:2 FTS) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(13C8-PFOSA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(D3-N-MeFOSA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(D5-N-EtFOSA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(D7-N-MeFOSE) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(D9-N-EtFOSE) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(D3-N-MeFOSAA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-
(D5-N-EtFOSAA) Isotopically Labelled Internal Recovery	%	-	-	-	-	-

Parameter	Units	LOR	ME334448.021	ME334448.022	ME334448.023	ME334448.024
Sample Number			ME334448.021	ME334448.022	ME334448.023	ME334448.024
Sample Matrix			Soil	Soil	Soil	Soil
Sample Date			26 May 2023	26 May 2023	26 May 2023	26 May 2023
Sample Name			SE248200.021	SE248200.022	SE248200.023	SE248200.024

Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples Method: MA-1523 Tested: 2/6/2023 (continued)

Moisture Content Method: AN002 Tested: 2/6/2023

Parameter	Units	LOR	ME334448.021	ME334448.022	ME334448.023	ME334448.024
% Moisture	%w/w	1	-	-	-	-

		Sample Number	ME334448.025	ME334448.026
		Sample Matrix	Soil	Soil
		Sample Date	26 May 2023	26 May 2023
		Sample Name	SE248200.025	SE248200.026
Parameter	Units	LOR		

Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples Method: MA-1523 Tested: 2/6/2023

Perfluorobutanoic acid (PFBA)	mg/kg	0.0016	-	-
Perfluoropentanoic acid (PFPeA)	mg/kg	0.0016	-	-
Perfluorohexanoic acid (PFHxA)	mg/kg	0.0016	-	-
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.0016	-	-
Perfluorooctanoic Acid (PFOA)	mg/kg	0.0008	-	-
Perfluorononanoic acid (PFNA)	mg/kg	0.0016	-	-
Perfluorodecanoic acid (PFDA)	mg/kg	0.0016	-	-
Perfluoroundecanoic acid (PFUnA)	mg/kg	0.0016	-	-
Perfluorododecanoic acid (PFDoA)	mg/kg	0.0016	-	-
Perfluorotridecanoic acid (PFTrDA)	mg/kg	0.0016	-	-
Perfluorotetradecanoic acid (PFTeDA)	mg/kg	0.0016	-	-
Perfluorohexadecanoic acid (PFHxDA)	mg/kg	0.0032	-	-
Perfluorobutane sulfonate (PFBS)	mg/kg	0.0016	-	-
Perfluoropentane sulfonate (PFPeS)	mg/kg	0.0016	-	-
Perfluorohexane sulfonate (PFHxS)	mg/kg	0.0016	-	-
Perfluoroheptane sulfonate (PFHpS)	mg/kg	0.0016	-	-
Perfluorooctane sulfonate (PFOS)	mg/kg	0.0016	-	-
Sum PFOS and PFHXS	mg/kg	0.0016	-	-
Sum of US EPA PFAS (PFOS+PFOA)	mg/kg	0.0016	-	-
Sum of enHealth PFAS (PFHxS+PFOS+PFOA)	mg/kg	0.0016	-	-
Perfluorononane sulfonate (PFNS)	mg/kg	0.0016	-	-
Perfluorodecane sulfonate (PFDS)	mg/kg	0.0016	-	-
Perfluorododecane sulfonate (PFDoS)	mg/kg	0.0016	-	-
1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS)	mg/kg	0.0016	-	-
1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS)	mg/kg	0.0016	-	-
1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS)	mg/kg	0.0016	-	-
1H,1H,2H,2H-Perfluorododecanesulfonic acid (10:2) (10:2	mg/kg	0.0016	-	-
Perfluoroctane sulfonamide (PFOSA)	mg/kg	0.0016	-	-
N-Methylperfluoroctane sulfonamide (N-MeFOSA)	mg/kg	0.008	-	-
N-Ethylperfluoroctane sulfonamide (N-EtFOSA)	mg/kg	0.008	-	-
2-(N-Methylperfluorooctane sulfonamido)-ethanol	mg/kg	0.016	-	-
2-(N-Ethylperfluorooctane sulfonamido)-ethanol	mg/kg	0.016	-	-
N-Methylperfluorooctanesulfonamidoacetic acid	mg/kg	0.008	-	-
N-Ethylperfluorooctanesulfonamidoacetic Acid	mg/kg	0.008	-	-
Total of PFAS (n=30)	mg/kg	0.08	-	-
(13C4-PFBA) Isotopically Labelled Internal Recovery	%	-	-	-
(13C5-PFPeA) Isotopically Labelled Internal Recovery	%	-	-	-
(13C5-PFHxA) Isotopically Labelled Internal Recovery	%	-	-	-
(13C4-PFHpA) Isotopically Labelled Internal Recovery	%	-	-	-
(13C4_PFOA) Isotopically Labelled Internal Recovery	%	-	-	-
(13C9-PFNA) Isotopically Labelled Internal Recovery	%	-	-	-
(13C6-PFDA) Isotopically Labelled Internal Recovery	%	-	-	-
(13C7-PFUdA) Isotopically Labelled Internal Recovery	%	-	-	-
(13C2-PFDoA) Isotopically Labelled Internal Recovery	%	-	-	-
(13C2_PFTeDA) Isotopically Labelled Internal Recovery	%	-	-	-
(13C2-PFHxDA) Isotopically Labelled Internal Recovery	%	-	-	-
(13C3-PFBS) Isotopically Labelled Internal Recovery	%	-	-	-
(13C3-PFHxS) Isotopically Labelled Internal Recovery	%	-	-	-
(13C8-PFOS) Isotopically Labelled Internal Recovery	%	-	-	-
(13C2-4:2 FTS) Isotopically Labelled Internal Recovery	%	-	-	-
(13C2-6:2 FTS) Isotopically Labelled Internal Recovery	%	-	-	-
(13C2-8:2 FTS) Isotopically Labelled Internal Recovery	%	-	-	-
(13C8-PFOSA) Isotopically Labelled Internal Recovery	%	-	-	-
(D3-N-MeFOSA) Isotopically Labelled Internal Recovery	%	-	-	-
(D5-N-EtFOSA) Isotopically Labelled Internal Recovery	%	-	-	-
(D7-N-MeFOSE) Isotopically Labelled Internal Recovery	%	-	-	-
(D9-N-EtFOSE) Isotopically Labelled Internal Recovery	%	-	-	-
(D3-N-MeFOSAA) Isotopically Labelled Internal Recovery	%	-	-	-
(D5-N-EtFOSAA) Isotopically Labelled Internal Recovery	%	-	-	-

Parameter	Units	LOR	ME334448.025	ME334448.026
Sample Number			ME334448.025	ME334448.026
Sample Matrix			Soil	Soil
Sample Date			26 May 2023	26 May 2023
Sample Name			SE248200.025	SE248200.026

Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples Method: MA-1523 Tested: 2/6/2023 (continued)

Moisture Content Method: AN002 Tested: 2/6/2023

Parameter	Units	LOR	ME334448.025	ME334448.026
% Moisture	%w/w	1	-	-

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.

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

Parameter	QC Reference	Units	LOR	DUP %RPD
% Moisture	LB062347	%w/w	1	2 - 11%

Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples Method: MA-1523

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
Perfluorobutanoic acid (PFBA)	LB062346	mg/kg	0.0016	<0.0016	0%	NA
Perfluoropentanoic acid (PFPeA)	LB062346	mg/kg	0.0016	<0.0016	0%	NA
Perfluorohexanoic acid (PFHxA)	LB062346	mg/kg	0.0016	<0.0016	0%	NA
Perfluoroheptanoic acid (PFHpA)	LB062346	mg/kg	0.0016	<0.0016	0%	118%
Perfluorooctanoic Acid (PFOA)	LB062346	mg/kg	0.0008	<0.0008	0%	118%
Perfluorononanoic acid (PFNA)	LB062346	mg/kg	0.0016	<0.0016	0%	117%
Perfluorodecanoic acid (PFDA)	LB062346	mg/kg	0.0016	<0.0016	0%	125%
Perfluoroundecanoic acid (PFUnA)	LB062346	mg/kg	0.0016	<0.0016	0%	115%
Perfluorododecanoic acid (PFDoA)	LB062346	mg/kg	0.0016	<0.0016	0%	135%
Perfluorotridecanoic acid (PFTrDA)	LB062346	mg/kg	0.0016	<0.0016	0%	97%
Perfluorotetradecanoic acid (PFTeDA)	LB062346	mg/kg	0.0016	<0.0016	0%	NA
Perfluorohexadecanoic acid (PFHxDA)	LB062346	mg/kg	0.0032	<0.0032	0%	NA
Perfluorobutane sulfonate (PFBS)	LB062346	mg/kg	0.0016	<0.0016	0%	NA
Perfluoropentane sulfonate (PFPeS)	LB062346	mg/kg	0.0016	<0.0016	0%	NA
Perfluorohexane sulfonate (PFHxS)	LB062346	mg/kg	0.0016	<0.0016	0%	NA
Perfluoroheptane sulfonate (PFHpS)	LB062346	mg/kg	0.0016	<0.0016	0%	NA
Perfluorooctane sulfonate (PFOS)	LB062346	mg/kg	0.0016	<0.0016	0%	100%
Sum PFOS and PFHXS	LB062346	mg/kg	0.0016	<0.0016	0%	NA
Sum of US EPA PFAS (PFOS+PFOA)	LB062346	mg/kg	0.0016	<0.0016	0%	NA
Sum of enHealth PFAS (PFHxS+PFOS+PFOA)	LB062346	mg/kg	0.0016	<0.0016	0%	NA
Perfluorononane sulfonate (PFNS)	LB062346	mg/kg	0.0016	<0.0016	0%	NA
Perfluorodecane sulfonate (PFDS)	LB062346	mg/kg	0.0016	<0.0016	0%	NA
Perfluorododecane sulfonate (PFDoS)	LB062346	mg/kg	0.0016	<0.0016	0%	NA
1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS)	LB062346	mg/kg	0.0016	<0.0016	0%	NA
1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS)	LB062346	mg/kg	0.0016	<0.0016	0%	NA
1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS)	LB062346	mg/kg	0.0016	<0.0016	0%	NA
1H,1H,2H,2H-Perfluorododecanesulfonic acid (10:2) (10:2 FTSA)	LB062346	mg/kg	0.0016	<0.0016	0%	NA
Perfluoroctane sulfonamide (PFOSA)	LB062346	mg/kg	0.0016	<0.0016	0%	76%
N-Methylperfluoroctane sulfonamide (N-MeFOSA)	LB062346	mg/kg	0.008	<0.008	0%	NA
N-Ethylperfluoroctane sulfonamide (N-EtFOSA)	LB062346	mg/kg	0.008	<0.008	0%	NA
2-(N-Methylperfluorooctane sulfonamido)-ethanol (N-MeFOSE)	LB062346	mg/kg	0.016	<0.016	0%	NA
2-(N-Ethylperfluorooctane sulfonamido)-ethanol (N-EtFOSE)	LB062346	mg/kg	0.016	<0.016	0%	NA
N-Methylperfluorooctanesulfonamidoacetic acid (N_MeFOSAA)	LB062346	mg/kg	0.008	<0.008	0%	NA
N-Ethylperfluorooctanesulfonamidoacetic Acid (N-EtFOSAA)	LB062346	mg/kg	0.008	<0.008	0%	NA
Total of PFAS (n=30)	LB062346	mg/kg	0.08	<0.08	0%	NA
(13C4-PFBA) Isotopically Labelled Internal Recovery Standard	LB062346	%	-	111%	1 - 2%	112%
(13C5-PFPeA) Isotopically Labelled Internal Recovery Standard	LB062346	%	-	105%	1%	104%
(13C5-PFHxA) Isotopically Labelled Internal Recovery Standard	LB062346	%	-	129%	4 - 17%	122%
(13C4-PFHpA) Isotopically Labelled Internal Recovery Standard	LB062346	%	-	127%	0 - 7%	105%
(13C4_PFOA) Isotopically Labelled Internal Recovery Standard	LB062346	%	-	134%	6 - 9%	108%
(13C9-PFNA) Isotopically Labelled Internal Recovery Standard	LB062346	%	-	106%	7 - 14%	84%
(13C6-PFDA) Isotopically Labelled Internal Recovery Standard	LB062346	%	-	105%	6 - 48%	130%
(13C7-PFUdA) Isotopically Labelled Internal Recovery Standard	LB062346	%	-	128%	9 - 17%	130%
(13C2-PFDoA) Isotopically Labelled Internal Recovery Standard	LB062346	%	-	128%	4 - 28%	137%
(13C2_PFTeDA) Isotopically Labelled Internal Recovery Standard	LB062346	%	-	127%	25 - 34%	115%
(13C2-PFHxDA) Isotopically Labelled Internal Recovery Standard	LB062346	%	-	71%	14 - 31%	63%
(13C3-PFBS) Isotopically Labelled Internal Recovery Standard	LB062346	%	-	101%	1 - 5%	111%
(13C3-PFHxS) Isotopically Labelled Internal Recovery Standard	LB062346	%	-	117%	2 - 5%	116%
(13C8-PFOS) Isotopically Labelled Internal Recovery Standard	LB062346	%	-	96%	24 - 36%	88%
(13C2-4:2 FTS) Isotopically Labelled Internal Recovery Standard	LB062346	%	-	98%	3 - 10%	133%
(13C2-6:2 FTS) Isotopically Labelled Internal Recovery Standard	LB062346	%	-	99%	2 - 7%	111%

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.

Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples Method: MA-1523 (continued)

				MB	DUP %RPD	LCS %Recovery
(13C2-8:2 FTS) Isotopically Labelled Internal Recovery Standard	LB062346	%	-	77%	31%	114%
(13C8-PFOSA) Isotopically Labelled Internal Recovery Standard	LB062346	%	-	74%	8 - 14%	83%
(D3-N-MeFOSA) Isotopically Labelled Internal Recovery Standard	LB062346	%	-	52%	2 - 25%	64%
(D5-N-EtFOSA) Isotopically Labelled Internal Recovery Standard	LB062346	%	-	55%	19 - 23%	54%
(D7-N-MeFOSE) Isotopically Labelled Internal Recovery Standard	LB062346	%	-	63%	3 - 26%	85%
(D9-N-EtFOSE) Isotopically Labelled Internal Recovery Standard	LB062346	%	-	50%	37 - 52%	53%
(D3-N-MeFOSAA) Isotopically Labelled Internal Recovery Standard	LB062346	%	-	101%	23 - 50%	81%
(D5-N-EtFOSAA) Isotopically Labelled Internal Recovery Standard	LB062346	%	-	97%	6 - 43%	69%

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.
MA-1523	This method covers the analysis of per- and polyfluoroalkyl substances (PFAS) in aqueous, solid and biosolid samples and solvent extracts, determined as the total of linear and branched isomers. After spiking with isotopically labelled quantification surrogates and clean-up via SPE cartridges sample extracts are analysed by liquid chromatography/mass spectrometry (LC-MS/MS). PFAS concentrations are determined by isotope dilution quantification.

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
		QFL	QC result is below the lower tolerance
**	Indicative data, theoretical holding time exceeded.	-	The sample was not analysed for this analyte
***	Indicates that both * and ** apply.	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 calcuated 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:

a. 1 Bq is equivalent to 27 pCi
b. 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.

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

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Email	sergio.raposeira@eiaustralia.com.au
Project	**E26047 19 Hope St Melrose Park**
Order Number	**E26047**
Samples	8

LABORATORY DETAILS

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SGS Reference	**SE248520 R0**
Date Received	31/5/2023
Date Reported	9/6/2023

COMMENTS

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

No respirable fibres detected in all soil samples using trace analysis technique.
Asbestos analysed by Approved Identifier Yusuf Kuthpudin.

SIGNATORIES

Akheeqar BENIAMEEN
Chemist

Huong CRAWFORD
Production Manager

Kamrul AHSAN
Senior Chemist

Ly Kim HA
Organic Section Head

Ravee SIVASUBRAMANIAM
Hygiene Team Leader

Shane MCDERMOTT
Inorganic/Metals Chemist

VOC's in Soil [AN433] Tested: 2/6/2023

PARAMETER	UOM	LOR	HA4_0.2-0.5 SOIL - 31/5/2023 SE248520.001	HA1_0.2-0.3 SOIL - 31/5/2023 SE248520.002	HA2_0.2-0.3 SOIL - 31/5/2023 SE248520.003	QD1 SOIL - 31/5/2023 SE248520.004	QD2 SOIL - 31/5/2023 SE248520.005
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorodifluoromethane (CFC-12)	mg/kg	1	<1	<1	<1	-	-
Chloromethane	mg/kg	1	<1	<1	<1	-	-
Vinyl chloride (Chloroethene)	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
Bromomethane	mg/kg	1	<1	<1	<1	-	-
Chloroethane	mg/kg	1	<1	<1	<1	-	-
Trichlorofluoromethane	mg/kg	1	<1	<1	<1	-	-
Acetone (2-propanone)	mg/kg	10	<10	<10	<10	-	-
Iodomethane	mg/kg	5	<5	<5	<5	-	-
1,1-dichloroethene	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
Acrylonitrile	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
Dichloromethane (Methylene chloride)	mg/kg	0.5	<0.5	<0.5	<0.5	-	-
Allyl chloride	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
Carbon disulfide	mg/kg	0.5	<0.5	<0.5	<0.5	-	-
trans-1,2-dichloroethene	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
1,1-dichloroethane	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
Vinyl acetate*	mg/kg	10	<10	<10	<10	-	-
cis-1,2-dichloroethene	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
Bromochloromethane	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
Chloroform (THM)	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
2,2-dichloropropane	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
1,2-dichloroethane	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
1,1,1-trichloroethane	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
1,1-dichloropropene	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
Carbon tetrachloride	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
Dibromomethane	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
1,2-dichloropropane	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
Trichloroethene (Trichloroethylene,TCE)	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
2-nitropropane	mg/kg	10	<10	<10	<10	-	-
Bromodichloromethane (THM)	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
MIBK (4-methyl-2-pentanone)	mg/kg	1	<1	<1	<1	-	-
cis-1,3-dichloropropene	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
trans-1,3-dichloropropene	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
1,1,2-trichloroethane	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
1,3-dichloropropane	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
Dibromochloromethane (THM)	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
2-hexanone (MBK)	mg/kg	5	<5	<5	<5	-	-
1,2-dibromoethane (EDB)	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
1,1,1,2-tetrachloroethane	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
Chlorobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
Bromoform (THM)	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
Styrene (Vinyl benzene)	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
1,1,2,2-tetrachloroethane	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
1,2,3-trichloropropane	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
trans-1,4-dichloro-2-butene	mg/kg	1	<1	<1	<1	-	-
Isopropylbenzene (Cumene)	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
Bromobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	-	-

VOC's in Soil [AN433] Tested: 2/6/2023 (continued)

PARAMETER	UOM	LOR	HA4_0.2-0.5 SOIL - 31/5/2023 SE248520.001	HA1_0.2-0.3 SOIL - 31/5/2023 SE248520.002	HA2_0.2-0.3 SOIL - 31/5/2023 SE248520.003	QD1 SOIL - 31/5/2023 SE248520.004	QD2 SOIL - 31/5/2023 SE248520.005
n-propylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
2-chlorotoluene	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
4-chlorotoluene	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
1,3,5-trimethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
tert-butylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
1,2,4-trimethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
sec-butylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
1,3-dichlorobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
1,4-dichlorobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
p-isopropyltoluene	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
1,2-dichlorobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
n-butylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
1,2-dibromo-3-chloropropane	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
1,2,4-trichlorobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
Hexachlorobutadiene	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
1,2,3-trichlorobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	-	-
Total VOC*	mg/kg	24	<24	<24	<24	-	-
Total Volatile Chlorinated Hydrocarbons*	mg/kg	3	<3.0	<3.0	<3.0	-	-
Total Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	<1.8	<1.8	<1.8	-	-
Total Other Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	<1.8	<1.8	<1.8	-	-

VOC's in Soil [AN433] Tested: 2/6/2023 (continued)

PARAMETER	UOM	LOR	Trip Blank SOIL - 31/5/2023 SE248520.006	Trip Spike SOIL - 31/5/2023 SE248520.007
Benzene	mg/kg	0.1	<0.1	[107%]
Toluene	mg/kg	0.1	<0.1	[90%]
Ethylbenzene	mg/kg	0.1	<0.1	[123%]
m/p-xylene	mg/kg	0.2	<0.2	[122%]
o-xylene	mg/kg	0.1	<0.1	[120%]
Total Xylenes*	mg/kg	0.3	<0.3	-
Total BTEX*	mg/kg	0.6	<0.6	-
Naphthalene (VOC)*	mg/kg	0.1	<0.1	-
Dichlorodifluoromethane (CFC-12)	mg/kg	1	-	-
Chloromethane	mg/kg	1	-	-
Vinyl chloride (Chloroethene)	mg/kg	0.1	-	-
Bromomethane	mg/kg	1	-	-
Chloroethane	mg/kg	1	-	-
Trichlorofluoromethane	mg/kg	1	-	-
Acetone (2-propanone)	mg/kg	10	-	-
Iodomethane	mg/kg	5	-	-
1,1-dichloroethene	mg/kg	0.1	-	-
Acrylonitrile	mg/kg	0.1	-	-
Dichloromethane (Methylene chloride)	mg/kg	0.5	-	-
Allyl chloride	mg/kg	0.1	-	-
Carbon disulfide	mg/kg	0.5	-	-
trans-1,2-dichloroethene	mg/kg	0.1	-	-
MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	-	-
1,1-dichloroethane	mg/kg	0.1	-	-
Vinyl acetate*	mg/kg	10	-	-
cis-1,2-dichloroethene	mg/kg	0.1	-	-
Bromochloromethane	mg/kg	0.1	-	-
Chloroform (THM)	mg/kg	0.1	-	-
2,2-dichloropropane	mg/kg	0.1	-	-
1,2-dichloroethane	mg/kg	0.1	-	-
1,1,1-trichloroethane	mg/kg	0.1	-	-
1,1-dichloropropene	mg/kg	0.1	-	-
Carbon tetrachloride	mg/kg	0.1	-	-
Dibromomethane	mg/kg	0.1	-	-
1,2-dichloropropane	mg/kg	0.1	-	-
Trichloroethene (Trichloroethylene,TCE)	mg/kg	0.1	-	-
2-nitropropane	mg/kg	10	-	-
Bromodichloromethane (THM)	mg/kg	0.1	-	-
MIBK (4-methyl-2-pentanone)	mg/kg	1	-	-
cis-1,3-dichloropropene	mg/kg	0.1	-	-
trans-1,3-dichloropropene	mg/kg	0.1	-	-
1,1,2-trichloroethane	mg/kg	0.1	-	-
1,3-dichloropropane	mg/kg	0.1	-	-
Dibromochloromethane (THM)	mg/kg	0.1	-	-
2-hexanone (MBK)	mg/kg	5	-	-
1,2-dibromoethane (EDB)	mg/kg	0.1	-	-
Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	-	-
1,1,1,2-tetrachloroethane	mg/kg	0.1	-	-
Chlorobenzene	mg/kg	0.1	-	-
Bromoform (THM)	mg/kg	0.1	-	-
Styrene (Vinyl benzene)	mg/kg	0.1	-	-
1,1,2,2-tetrachloroethane	mg/kg	0.1	-	-
1,2,3-trichloropropane	mg/kg	0.1	-	-
trans-1,4-dichloro-2-butene	mg/kg	1	-	-
Isopropylbenzene (Cumene)	mg/kg	0.1	-	-
Bromobenzene	mg/kg	0.1	-	-

VOC's in Soil [AN433] Tested: 2/6/2023 (continued)

PARAMETER	UOM	LOR	Trip Blank SOIL - 31/5/2023 SE248520.006	Trip Spike SOIL - 31/5/2023 SE248520.007
n-propylbenzene	mg/kg	0.1	-	-
2-chlorotoluene	mg/kg	0.1	-	-
4-chlorotoluene	mg/kg	0.1	-	-
1,3,5-trimethylbenzene	mg/kg	0.1	-	-
tert-butylbenzene	mg/kg	0.1	-	-
1,2,4-trimethylbenzene	mg/kg	0.1	-	-
sec-butylbenzene	mg/kg	0.1	-	-
1,3-dichlorobenzene	mg/kg	0.1	-	-
1,4-dichlorobenzene	mg/kg	0.1	-	-
p-isopropyltoluene	mg/kg	0.1	-	-
1,2-dichlorobenzene	mg/kg	0.1	-	-
n-butylbenzene	mg/kg	0.1	-	-
1,2-dibromo-3-chloropropane	mg/kg	0.1	-	-
1,2,4-trichlorobenzene	mg/kg	0.1	-	-
Hexachlorobutadiene	mg/kg	0.1	-	-
1,2,3-trichlorobenzene	mg/kg	0.1	-	-
Total VOC*	mg/kg	24	-	-
Total Volatile Chlorinated Hydrocarbons*	mg/kg	3	-	-
Total Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	-	-
Total Other Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	-	-

Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 2/6/2023

PARAMETER	UOM	LOR	HA4_0.2-0.5 SOIL - 31/5/2023 SE248520.001	HA1_0.2-0.3 SOIL - 31/5/2023 SE248520.002	HA2_0.2-0.3 SOIL - 31/5/2023 SE248520.003	QD1 SOIL - 31/5/2023 SE248520.004	QD2 SOIL - 31/5/2023 SE248520.005
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 2/6/2023

PARAMETER	UOM	LOR	HA4_0.2-0.5 SOIL - 31/5/2023 SE248520.001	HA1_0.2-0.3 SOIL - 31/5/2023 SE248520.002	HA2_0.2-0.3 SOIL - 31/5/2023 SE248520.003	QD1 SOIL - 31/5/2023 SE248520.004	QD2 SOIL - 31/5/2023 SE248520.005
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	**45**	<45	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210	<210

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 2/6/2023

PARAMETER	UOM	LOR	HA4_0.2-0.5 SOIL - 31/5/2023 SE248520.001	HA1_0.2-0.3 SOIL - 31/5/2023 SE248520.002	HA2_0.2-0.3 SOIL - 31/5/2023 SE248520.003
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	<0.8

OC Pesticides in Soil [AN420] Tested: 2/6/2023

PARAMETER	UOM	LOR	HA4_0.2-0.5 SOIL - 31/5/2023 SE248520.001	HA1_0.2-0.3 SOIL - 31/5/2023 SE248520.002	HA2_0.2-0.3 SOIL - 31/5/2023 SE248520.003
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1
Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1
o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2
o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	<0.1
o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1
Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1
Endrin ketone	mg/kg	0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<1	<1
Total OC VIC EPA	mg/kg	1	<1	<1	<1

OP Pesticides in Soil [AN420] Tested: 2/6/2023

PARAMETER	UOM	LOR	HA4_0.2-0.5 SOIL - 31/5/2023 SE248520.001	HA1_0.2-0.3 SOIL - 31/5/2023 SE248520.002	HA2_0.2-0.3 SOIL - 31/5/2023 SE248520.003
Dichlorvos	mg/kg	0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	<1.7

PCBs in Soil [AN420] Tested: 2/6/2023

PARAMETER	UOM	LOR	HA4_0.2-0.5 SOIL - 31/5/2023 SE248520.001	HA1_0.2-0.3 SOIL - 31/5/2023 SE248520.002	HA2_0.2-0.3 SOIL - 31/5/2023 SE248520.003
Arochlor 1016	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1221	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1232	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1242	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1248	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1254	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1260	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1262	mg/kg	0.2	<0.2	<0.2	<0.2
Arochlor 1268	mg/kg	0.2	<0.2	<0.2	<0.2
Total PCBs (Arochlors)	mg/kg	1	<1	<1	<1

Total Phenolics in Soil [AN295] Tested: 6/6/2023

PARAMETER	UOM	LOR	HA4_0.2-0.5 SOIL - 31/5/2023 SE248520.001	HA1_0.2-0.3 SOIL - 31/5/2023 SE248520.002	HA2_0.2-0.3 SOIL - 31/5/2023 SE248520.003
Total Phenols	mg/kg	0.5	<0.5	<0.5	<0.5

Total Cyanide in soil by Discrete Analyser [AN077/AN287] Tested: 6/6/2023

			HA4_0.2-0.5	HA1_0.2-0.3	HA2_0.2-0.3
			SOIL	SOIL	SOIL
			-	-	-
			31/5/2023	31/5/2023	31/5/2023
PARAMETER	UOM	LOR	SE248520.001	SE248520.002	SE248520.003
Total Cyanide	mg/kg	0.5	<0.5	<0.5	<0.5

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 2/6/2023

PARAMETER	UOM	LOR	HA4_0.2-0.5 SOIL - 31/5/2023 SE248520.001	HA1_0.2-0.3 SOIL - 31/5/2023 SE248520.002	HA2_0.2-0.3 SOIL - 31/5/2023 SE248520.003	QD1 SOIL - 31/5/2023 SE248520.004	QD2 SOIL - 31/5/2023 SE248520.005
Arsenic, As	mg/kg	1	5	3	5	4	4
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	11	10	38	31	12
Copper, Cu	mg/kg	0.5	18	2.1	24	19	3.3
Lead, Pb	mg/kg	1	76	10	24	25	12
Nickel, Ni	mg/kg	0.5	3.4	1.6	41	31	2.7
Zinc, Zn	mg/kg	2	120	7.5	71	63	12

Mercury in Soil [AN312] Tested: 2/6/2023

PARAMETER	UOM	LOR	HA4_0.2-0.5 SOIL - 31/5/2023 SE248520.001	HA1_0.2-0.3 SOIL - 31/5/2023 SE248520.002	HA2_0.2-0.3 SOIL - 31/5/2023 SE248520.003	QD1 SOIL - 31/5/2023 SE248520.004	QD2 SOIL - 31/5/2023 SE248520.005
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Moisture Content [AN002] Tested: 2/6/2023

PARAMETER	UOM	LOR	HA4_0.2-0.5 SOIL - 31/5/2023 SE248520.001	HA1_0.2-0.3 SOIL - 31/5/2023 SE248520.002	HA2_0.2-0.3 SOIL - 31/5/2023 SE248520.003	QD1 SOIL - 31/5/2023 SE248520.004	QD2 SOIL - 31/5/2023 SE248520.005
% Moisture	%w/w	1	9.3	8.4	11.6	12.8	9.1

PARAMETER	UOM	LOR	Trip Blank SOIL - 31/5/2023 SE248520.006
% Moisture	%w/w	1	<1.0

Fibre Identification in soil [AS4964/AN602] Tested: 8/6/2023

PARAMETER	UOM	LOR	HA4_0.2-0.5 SOIL - 31/5/2023 SE248520.001	HA1_0.2-0.3 SOIL - 31/5/2023 SE248520.002	HA2_0.2-0.3 SOIL - 31/5/2023 SE248520.003
Asbestos Detected	No unit	-	No	No	No
Estimated Fibres*	%w/w	0.01	<0.01	<0.01	<0.01

Gravimetric Determination of Asbestos in Soil [AN605] Tested: 8/6/2023

PARAMETER	UOM	LOR	HA4_0.2-0.5 SOIL - 31/5/2023 SE248520.001	HA1_0.2-0.3 SOIL - 31/5/2023 SE248520.002	HA2_0.2-0.3 SOIL - 31/5/2023 SE248520.003
Total Sample Weight*	g	1	509	553	498
Bonded ACM in >7mm Sample*	g	0.001	<0.001	<0.001	<0.001
AF/FA in >2mm to <7mm Sample*	g	0.00001	<0.00001	<0.00001	<0.00001
AF/FA in <2mm Sample*	g	0.00001	<0.00001	<0.00001	<0.00001
Asbestos in soil (>7mm ACM)*	%w/w	0.01	<0.01	<0.01	<0.01
Asbestos in soil (>2mm to <7mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001
Asbestos in soil (<2mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001
Asbestos in soil (<7mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001
Fibre Type*	No unit	-	NAD	NAD	NAD

VOCs in Water [AN433] Tested: 6/6/2023

PARAMETER	UOM	LOR	QR1 WATER - 31/5/2023 SE248520.008
Benzene	µg/L	0.5	<0.5
Toluene	µg/L	0.5	<0.5
Ethylbenzene	µg/L	0.5	<0.5
m/p-xylene	µg/L	1	<1
o-xylene	µg/L	0.5	<0.5
Total Xylenes	µg/L	1.5	<1.5
Total BTEX	µg/L	3	<3
Naphthalene (VOC)*	µg/L	0.5	<0.5

Volatile Petroleum Hydrocarbons in Water [AN433] Tested: 6/6/2023

PARAMETER	UOM	LOR	QR1 WATER - 31/5/2023 SE248520.008
TRH C6-C9	µg/L	40	<40
Benzene (F0)	µg/L	0.5	<0.5
TRH C6-C10	µg/L	50	<50
TRH C6-C10 minus BTEX (F1)	µg/L	50	<50

TRH (Total Recoverable Hydrocarbons) in Water [AN403] Tested: 2/6/2023

PARAMETER	UOM	LOR	QR1 WATER - 31/5/2023 SE248520.008
TRH C10-C14	µg/L	50	<50
TRH C15-C28	µg/L	200	<200
TRH C29-C36	µg/L	200	<200
TRH C37-C40	µg/L	200	<200
TRH >C10-C16	µg/L	60	<60
TRH >C10-C16 - Naphthalene (F2)	µg/L	60	<60
TRH >C16-C34 (F3)	µg/L	500	<500
TRH >C34-C40 (F4)	µg/L	500	<500
TRH C10-C40	µg/L	320	<320

PAH (Polynuclear Aromatic Hydrocarbons) in Water [AN420] Tested: 2/6/2023

PARAMETER	UOM	LOR	QR1 WATER - 31/5/2023 SE248520.008
Naphthalene	μg/L	0.1	<0.1
2-methylnaphthalene	μg/L	0.1	<0.1
1-methylnaphthalene	μg/L	0.1	<0.1
Acenaphthylene	μg/L	0.1	<0.1
Acenaphthene	μg/L	0.1	<0.1
Fluorene	μg/L	0.1	<0.1
Phenanthrene	μg/L	0.1	<0.1
Anthracene	μg/L	0.1	<0.1
Fluoranthene	μg/L	0.1	<0.1
Pyrene	μg/L	0.1	<0.1
Benzo(a)anthracene	μg/L	0.1	<0.1
Chrysene	μg/L	0.1	<0.1
Benzo(b&j)fluoranthene	μg/L	0.1	<0.1
Benzo(k)fluoranthene	μg/L	0.1	<0.1
Benzo(a)pyrene	μg/L	0.1	<0.1
Indeno(1,2,3-cd)pyrene	μg/L	0.1	<0.1
Dibenzo(ah)anthracene	μg/L	0.1	<0.1
Benzo(ghi)perylene	μg/L	0.1	<0.1
Total PAH (18)	μg/L	1	<1

Trace Metals (Dissolved) in Water by ICPMS [AN318] Tested: 2/6/2023

PARAMETER	UOM	LOR	QR1 WATER - 31/5/2023 SE248520.008
Arsenic	μg/L	1	<1
Cadmium	μg/L	0.1	<0.1
Chromium	μg/L	1	<1
Copper	μg/L	1	<1
Lead	μg/L	1	<1
Nickel	μg/L	1	<1
Zinc	μg/L	5	<5

Mercury (dissolved) in Water [AN311(Perth)/AN312] Tested: 2/6/2023

PARAMETER	UOM	LOR	QR1 WATER - 31/5/2023 SE248520.008
Mercury	mg/L	0.0001	<0.0001

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.
AN020	Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B.
AN040/AN320	A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.
AN040	A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analysis by AAS or ICP as per USEPA Method 200.8.
AN077	Hydrogen cyanide is liberated from an acidified alkali soil extract by distillation and purging with air. The hydrogen cyanide gas is then collected by passing it through a sodium hydroxide scrubbing solution. The scrubbing solution will then be analysed for cyanide by the appropriate method.
AN287	A buffered distillate or water sample is treated with chloramine/barbituric acid reagents and the intensity of the colour developed is proportional to the cyanide concentration by DA.
AN295	For Soil, a 1:10 NaOH extraction is made and analysed after 16 hours. The soil extract or water sample is distilled in a phosphoric acid stream. Phenolic compounds in the distillate react with a reagent stream of potassium hexacyanoferrate(III) and 4-Amino-2,3-dimethyl-3-pryazolin-5-one in an alkaline medium to form a coloured complex which is analysed spectrophotometrically onboard a continuous flow analyser.
AN311(Perth)/AN312	Mercury by Cold Vapour AAS in Waters: 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.
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
AN318	Determination of elements at trace level in waters by ICP-MS technique,, referenced to USEPA 6020B and USEPA 200.8 (5.4).
AN403	Total Recoverable Hydrocarbons: Determination of Hydrocarbons by gas chromatography after a solvent extraction. Detection is by flame ionisation detector (FID) that produces an electronic signal in proportion to the combustible matter passing through it. Total Recoverable Hydrocarbons (TRH) are routinely reported as four alkane groupings based on the carbon chain length of the compounds: C6-C9, C10-C14, C15-C28 and C29-C36 and in recognition of the NEPM 1999 (2013), >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). F2 is reported directly and also corrected by subtracting Naphthalene (from VOC method AN433) where available.
AN403	Additionally, the volatile C6-C9 fraction may be determined by a purge and trap technique and GC/MS because of the potential for volatiles loss. Total Recoverable Hydrocarbons - Silica (TRH-Si) follows the same method of analysis after silica gel cleanup of the solvent extract. Aliphatic/Aromatic Speciation follows the same method of analysis after fractionation of the solvent extract over silica with differential polarity of the eluent solvents .
AN403	The GC/FID method is not well suited to the analysis of refined high boiling point materials (ie lubricating oils or greases) but is particularly suited for measuring diesel, kerosene and petrol if care to control volatility is taken. This method will detect naturally occurring hydrocarbons, lipids, animal fats, phenols and PAHs if they are present at sufficient levels, dependent on the use of specific cleanup/fractionation techniques. Reference USEPA 3510B, 8015B.
AN420	(SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols (etc) in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D). Total PAH calculated from individual analyte detections at or above the limit of reporting .
AN420	SVOC Compounds: Semi-Volatile Organic Compounds (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN433	VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC`s are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.

AN602/AS4964	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic \`clues\`, which provide a reasonable degree of certainty, dispersion staining is a mandatory \`clue\` for positive identification. If sufficient \`clues\` are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602/AS4964	Fibres/material that cannot be unequivocably identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf) The fibres detected may or may not be asbestos fibres.
AN602/AS4964	AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples, Section 8.4, Trace Analysis Criteria, Note 4 states:"Depending upon sample condition and fibre type, the detection/reporting limit (RL) of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."
AN602/AS4964	The sample can be reported “no asbestos found at the reporting limit (RL) of 0.1 g/kg” (<0.01%w/w) where AN602 section 4.5 of this method has been followed, and if- (a) no trace asbestos fibres have been detected (i.e. no ‘respirable’ fibres): (b) the estimated weight of non-respirable asbestos fibre bundles and/or the estimated weight of asbestos in asbestos-containing materials are found to be less than 0.1g/kg: and (c) these non-respirable asbestos fibre bundles and/or the asbestos containing materials are only visible under stereo-microscope viewing conditions.
AN605	This technique gravimetrically determines the mass of Bonded Asbestos Containing Material retained on a 7mm Sieve and assumes that 15% of this ACM is asbestos. This calculated asbestos weight is then calculated as a percentage of the total sample weight. Any fibrous asbestos (FA) found in this fraction will be added to the 2-7mm fraction and its mass recorded there.
AN605	This technique also gravimetrically determines the mass of Fibrous Asbestos (FA) and Asbestos Fines (AF) Containing Material retained on and passing a 2mm sieve post 7mm sieving. Assumes that FA and AF are 100% asbestos containing. This calculated asbestos weight is then calculated as a percentage of the total sample weight. This does not include free/respirable fibres which are only observed by standard trace analysis as per AN602.
AN605	Bonded asbestos containing material (Bonded ACM) comprises asbestos-containing-material which is sound in condition. Fibrous asbestos (FA) comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. Asbestos fines (AF) includes free fibres, small fibre bundles and also small fragments of bonded ACM that passes through a 7mm sieve - which implies that the bonded ACM fragments have a substantial degree of damage which increases the potential for fibre release.
AN-605	Insofar as is technically feasible, this report is consistent with the analytical reporting recommendations in the Western Australian Department of Health Guidelines for the Assessment Remediation and Management of Asbestos - Contaminated Sites in Western Australia - May 2009 and NEPM 1999 (2013) schedule B1 section 4..

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:

a. 1 Bq is equivalent to 27 pCi
b. 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.

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS		LABORATORY DETAILS	
Contact	Sergio Raposeira	Manager	Huong Crawford
Client	EI AUSTRALIA	Laboratory	SGS Alexandria Environmental
Address	SUITE 6.01 55 MILLER STREET PYRMONT NSW 2009	Address	Unit 16, 33 Maddox St Alexandria NSW 2015
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Facsimile	(Not specified)	Facsimile	+61 2 8594 0499
Email	sergio.raposeira@eiaustralia.com.au	Email	au.environmental.sydney@sgs.com
Project	**E26047 19 Hope St Melrose Park**	SGS Reference	**SE248520 R0**
Order Number	**E26047**	Date Received	31 May 2023
Samples	3	Date Reported	09 Jun 2023

COMMENTS

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

No respirable fibres detected in all soil samples using trace analysis technique.
Asbestos analysed by Approved Identifier Yusuf Kuthpudin .

SIGNATORIES

S. Raveendran.

Ravee SIVASUBRAMANIAM
Hygiene Team Leader

RESULTS

Fibre Identification in soil — Method AN602

Laboratory Reference	Client Reference	Matrix	Sample Description	Date Sampled	Fibre Identification	Est.%w/w*
SE248520.001	HA4_0.2-0.5	Soil	509g Clay, Sand, Rocks	31 May 2023	No Asbestos Found at RL of 0.1g/kg Organic Fibres Detected	<0.01
SE248520.002	HA1_0.2-0.3	Soil	553g Clay, Sand, Rocks	31 May 2023	No Asbestos Found at RL of 0.1g/kg	<0.01
SE248520.003	HA2_0.2-0.3	Soil	498g Clay, Sand, Soil, Rocks	31 May 2023	No Asbestos Found at RL of 0.1g/kg Organic Fibres Detected	<0.01

Gravimetric Determination of Asbestos in Soil [AN605] Tested: 8/6/2023

PARAMETER	UOM	LOR	HA4_0.2-0.5 SOIL - 31/5/2023 SE248520.001	HA1_0.2-0.3 SOIL - 31/5/2023 SE248520.002	HA2_0.2-0.3 SOIL - 31/5/2023 SE248520.003
Total Sample Weight*	g	1	509	553	498
Bonded ACM in >7mm Sample*	g	0.001	<0.001	<0.001	<0.001
AF/FA in >2mm to <7mm Sample*	g	0.00001	<0.00001	<0.00001	<0.00001
AF/FA in <2mm Sample*	g	0.00001	<0.00001	<0.00001	<0.00001
Asbestos in soil (>7mm ACM)*	%w/w	0.01	<0.01	<0.01	<0.01
Asbestos in soil (>2mm to <7mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001
Asbestos in soil (<2mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001
Asbestos in soil (<7mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001
Fibre Type*	No unit	-	NAD	NAD	NAD

METHOD	METHODOLOGY SUMMARY
AN602/AS4964	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic `clues`, which provide a reasonable degree of certainty, dispersion staining is a mandatory `clue` for positive identification. If sufficient `clues` are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602/AS4964	Fibres/material that cannot be unequivocably identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf) The fibres detected may or may not be asbestos fibres.
AN602/AS4964	AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples , Section 8.4, Trace Analysis Criteria, Note 4 states:"Depending upon sample condition and fibre type, the detection/reporting limit (RL) of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."
AN602/AS4964	The sample can be reported “no asbestos found at the reporting limit (RL) of 0.1 g/kg” (<0.01%w/w) where AN602 section 4.5 of this method has been followed, and if- (a) no trace asbestos fibres have been detected (i.e. no ‘respirable’ fibres): (b) the estimated weight of non-respirable asbestos fibre bundles and/or the estimated weight of asbestos in asbestos-containing materials are found to be less than 0.1g/kg: and (c) these non-respirable asbestos fibre bundles and/or the asbestos containing materials are only visible under stereo-microscope viewing conditions.
AN605	This technique gravimetrically determines the mass of Bonded Asbestos Containing Material retained on a 7mm Sieve and assumes that 15% of this ACM is asbestos. This calculated asbestos weight is then calculated as a percentage of the total sample weight. Any fibrous asbestos (FA) found in this fraction will be added to the 2-7mm fraction and its mass recorded there.
AN605	This technique also gravimetrically determines the mass of Fibrous Asbestos (FA) and Asbestos Fines (AF) Containing Material retained on and passing a 2mm sieve post 7mm sieving. Assumes that FA and AF are 100% asbestos containing. This calculated asbestos weight is then calculated as a percentage of the total sample weight. This does not include free/respirable fibres which are only observed by standard trace analysis as per AN602.
AN605	Bonded asbestos containing material (Bonded ACM) comprises asbestos-containing-material which is sound in condition. Fibrous asbestos (FA) comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. Asbestos fines (AF) includes free fibres, small fibre bundles and also small fragments of bonded ACM that passes through a 7mm sieve - which implies that the bonded ACM fragments have a substantial degree of damage which increases the potential for fibre release.
AN-605	Insofar as is technically feasible, this report is consistent with the analytical reporting recommendations in the Western Australian Department of Health Guidelines for the Assessment Remediation and Management of Asbestos - Contaminated Sites in Western Australia - May 2009 and NEPM 1999 (2013) schedule B1 section 4..

FOOTNOTES

Amosite	-	Brown Asbestos	NA	-	Not Analysed
Chrysotile	-	White Asbestos	LNR	-	Listed, Not Required
Crocidolite	-	Blue Asbestos	*	-	NATA accreditation does not cover the performance of this service.
Amphiboles	-	Amosite and/or Crocidolite	**	-	Indicative data, theoretical holding time exceeded.
			***	-	Indicates that both * and ** apply.

(In reference to soil samples only) This report does not comply with the analytical reporting recommendations in the Western Australian Department of Health Guidelines for the Assessment and Remediation and Management of Asbestos Contaminated sites in Western Australia - May 2009.

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

Where reported: 'Asbestos Detected': Asbestos detected by polarised light microscopy, including dispersion staining.
Where reported: 'No Asbestos Found': No Asbestos Found by polarised light microscopy, including dispersion staining.
Where reported: 'UMF Detected': Mineral fibres of unknown type detected by polarised light microscopy, including dispersion staining. Confirmation by another independent analytical technique may be necessary.

Even after disintegration it can be very difficult, or impossible, to detect the presence of asbestos in some asbestos-containing bulk materials using polarised light microscopy. This is due to the low grade or small length or diameter of asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials.

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.

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS		LABORATORY DETAILS	
Contact	Sergio Raposeira	Manager	Huong Crawford
Client	EI AUSTRALIA	Laboratory	SGS Alexandria Environmental
Address	SUITE 6.01 55 MILLER STREET PYRMONT NSW 2009	Address	Unit 16, 33 Maddox St Alexandria NSW 2015
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Project	**E26047 19 Hope St Melrose Park**	SGS Reference	**SE248520 R1**
Order Number	**E26047**	Date Received	31 May 2023
Samples	3	Date Reported	16 Jun 2023

COMMENTS

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

No respirable fibres detected in all soil samples using trace analysis technique.
Asbestos analysed by Approved Identifier Yusuf Kuthpudin .
This report cancels and supersedes the report No. SE248520. dated 09/06/2023 issued by SGS Environment, Health and Safety due to amended sample id.

SIGNATORIES

S. Raveendran.

Ravee SIVASUBRAMANIAM
Hygiene Team Leader

RESULTS

Fibre Identification in soil | Method AN602

Laboratory Reference	Client Reference	Matrix	Sample Description	Date Sampled	Fibre Identification	Est.%w/w*
SE248520.001	HA4_0.2-0.3	Soil	509g Clay, Sand, Rocks	31 May 2023	No Asbestos Found at RL of 0.1g/kg Organic Fibres Detected	<0.01
SE248520.002	HA1_0.2-0.3	Soil	553g Clay, Sand, Rocks	31 May 2023	No Asbestos Found at RL of 0.1g/kg	<0.01
SE248520.003	HA2_0.2-0.3	Soil	498g Clay, Sand, Soil, Rocks	31 May 2023	No Asbestos Found at RL of 0.1g/kg Organic Fibres Detected	<0.01

Gravimetric Determination of Asbestos in Soil [AN605] Tested: 8/6/2023

PARAMETER	UOM	LOR	HA4_0.2-0.3 SOIL - 31/5/2023 SE248520.001	HA1_0.2-0.3 SOIL - 31/5/2023 SE248520.002	HA2_0.2-0.3 SOIL - 31/5/2023 SE248520.003
Total Sample Weight*	g	1	509	553	498
Bonded ACM in >7mm Sample*	g	0.001	<0.001	<0.001	<0.001
AF/FA in >2mm to <7mm Sample*	g	0.00001	<0.00001	<0.00001	<0.00001
AF/FA in <2mm Sample*	g	0.00001	<0.00001	<0.00001	<0.00001
Asbestos in soil (>7mm ACM)*	%w/w	0.01	<0.01	<0.01	<0.01
Asbestos in soil (>2mm to <7mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001
Asbestos in soil (<2mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001
Asbestos in soil (<7mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001
Fibre Type*	No unit	-	NAD	NAD	NAD

METHOD SUMMARY

METHOD	METHODOLOGY SUMMARY
AN602/AS4964	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic `clues`, which provide a reasonable degree of certainty, dispersion staining is a mandatory `clue` for positive identification. If sufficient `clues` are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602/AS4964	Fibres/material that cannot be unequivocably identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf) The fibres detected may or may not be asbestos fibres.
AN602/AS4964	AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples, Section 8.4, Trace Analysis Criteria, Note 4 states:"Depending upon sample condition and fibre type, the detection/reporting limit (RL) of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."
AN602/AS4964	The sample can be reported “no asbestos found at the reporting limit (RL) of 0.1 g/kg” (<0.01%w/w) where AN602 section 4.5 of this method has been followed, and if- (a) no trace asbestos fibres have been detected (i.e. no ‘respirable’ fibres): (b) the estimated weight of non-respirable asbestos fibre bundles and/or the estimated weight of asbestos in asbestos-containing materials are found to be less than 0.1g/kg: and (c) these non-respirable asbestos fibre bundles and/or the asbestos containing materials are only visible under stereo-microscope viewing conditions.
AN605	This technique gravimetrically determines the mass of Bonded Asbestos Containing Material retained on a 7mm Sieve and assumes that 15% of this ACM is asbestos. This calculated asbestos weight is then calculated as a percentage of the total sample weight. Any fibrous asbestos (FA) found in this fraction will be added to the 2-7mm fraction and its mass recorded there.
AN605	This technique also gravimetrically determines the mass of Fibrous Asbestos (FA) and Asbestos Fines (AF) Containing Material retained on and passing a 2mm sieve post 7mm sieving. Assumes that FA and AF are 100% asbestos containing. This calculated asbestos weight is then calculated as a percentage of the total sample weight. This does not include free/respirable fibres which are only observed by standard trace analysis as per AN602.
AN605	Bonded asbestos containing material (Bonded ACM) comprises asbestos-containing-material which is sound in condition. Fibrous asbestos (FA) comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. Asbestos fines (AF) includes free fibres, small fibre bundles and also small fragments of bonded ACM that passes through a 7mm sieve - which implies that the bonded ACM fragments have a substantial degree of damage which increases the potential for fibre release.
AN-605	Insofar as is technically feasible, this report is consistent with the analytical reporting recommendations in the Western Australian Department of Health Guidelines for the Assessment Remediation and Management of Asbestos - Contaminated Sites in Western Australia - May 2009 and NEPM 1999 (2013) schedule B1 section 4..

FOOTNOTES

Amosite	-	Brown Asbestos	NA	-	Not Analysed
Chrysotile	-	White Asbestos	LNR	-	Listed, Not Required
Crocidolite	-	Blue Asbestos	*	-	NATA accreditation does not cover the performance of this service.
			**	-	Indicative data, theoretical holding time exceeded.
			***	-	Indicates that both * and ** apply.

(In reference to soil samples only) This report does not comply with the analytical reporting recommendations in the Western Australian Department of Health Guidelines for the Assessment and Remediation and Management of Asbestos Contaminated sites in Western Australia - May 2009.

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

Where reported: 'Asbestos Detected': Asbestos detected by polarised light microscopy, including dispersion staining.
Where reported: 'No Asbestos Found': No Asbestos Found by polarised light microscopy, including dispersion staining.
Where reported: 'UMF Detected': Mineral fibres of unknown type detected by polarised light microscopy, including dispersion staining. Confirmation by another independent analytical technique may be necessary.

Even after disintegration it can be very difficult, or impossible, to detect the presence of asbestos in some asbestos-containing bulk materials using polarised light microscopy. This is due to the low grade or small length or diameter of asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials.

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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CERTIFICATE OF ANALYSIS 324760-A

Client Details

Client	EI Australia
Attention	Anthony Lo
Address	Suite 6.01, 55 Miller Street, Pyrmont, NSW, 2009

Sample Details

Your Reference	**E26047, Melrose Park**
Number of Samples	additional analysis
Date samples received	02/06/2023
Date completed instructions received	19/06/2023

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	22/06/2023
Date of Issue	22/06/2023

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Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By
Dragana Tomas, Senior Chemist
Hannah Nguyen, Metals Supervisor
Liam Timmins, Organics Supervisor

Authorised By
Nancy Zhang, Laboratory Manager

TRH in Soil (C6-C9) NEPM			
Our Reference		324760-A-1	324760-A-2
Your Reference	UNITS	QT1	QT2
Date Sampled		31/05/2023	31/05/2023
Type of sample		Soil	Soil
Date extracted	-	20/06/2023	20/06/2023
Date analysed	-	21/06/2023	21/06/2023
TRH C_6 - C_9	mg/kg	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25
Surrogate aaa-Trifluorotoluene	%	104	101

svTRH (C10-C40) in Soil			
Our Reference		324760-A-1	324760-A-2
Your Reference	UNITS	QT1	QT2
Date Sampled		31/05/2023	31/05/2023
Type of sample		Soil	Soil
Date extracted	-	20/06/2023	20/06/2023
Date analysed	-	20/06/2023	20/06/2023
TRH C_{10} - C_{14}	mg/kg	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50
Surrogate o-Terphenyl	%	90	89

Acid Extractable metals in soil			
Our Reference		324760-A-1	324760-A-2
Your Reference	UNITS	QT1	QT2
Date Sampled		31/05/2023	31/05/2023
Type of sample		Soil	Soil
Date prepared	-	20/06/2023	20/06/2023
Date analysed	-	20/06/2023	20/06/2023
Arsenic	mg/kg	7	7
Cadmium	mg/kg	<0.4	<0.4
Chromium	mg/kg	28	21
Copper	mg/kg	18	4
Lead	mg/kg	28	12
Mercury	mg/kg	<0.1	<0.1
Nickel	mg/kg	17	3
Zinc	mg/kg	47	12

Method ID	Methodology Summary
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.

QUALITY CONTROL: TRH in Soil (C6-C9) NEPM					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	[NT]
Date extracted	-			20/06/2023	[NT]	[NT]	[NT]	[NT]	20/06/2023	[NT]
Date analysed	-			21/06/2023	[NT]	[NT]	[NT]	[NT]	21/06/2023	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	107	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	107	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	95	[NT]	[NT]	[NT]	[NT]	97	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	[NT]
Date extracted	-			20/06/2023	[NT]	[NT]	[NT]	[NT]	20/06/2023	[NT]
Date analysed	-			20/06/2023	[NT]	[NT]	[NT]	[NT]	20/06/2023	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	119	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	106	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	86	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	119	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	106	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	86	[NT]
Surrogate o-Terphenyl	%		Org-020	89	[NT]	[NT]	[NT]	[NT]	97	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			20/06/2023	[NT]	[NT]	[NT]	[NT]	20/06/2023	[NT]
Date analysed	-			20/06/2023	[NT]	[NT]	[NT]	[NT]	20/06/2023	[NT]
Arsenic	mg/kg	4	Metals-020	<4	[NT]	[NT]	[NT]	[NT]	114	[NT]
Cadmium	mg/kg	0.4	Metals-020	<0.4	[NT]	[NT]	[NT]	[NT]	107	[NT]
Chromium	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	110	[NT]
Copper	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	108	[NT]
Lead	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	112	[NT]
Mercury	mg/kg	0.1	Metals-021	<0.1	[NT]	[NT]	[NT]	[NT]	97	[NT]
Nickel	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	108	[NT]
Zinc	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	107	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Where matrix spike recoveries fall below the lower limit of the acceptance criteria (e.g. for non-labile or standard Organics <60%), positive result(s) in the parent sample will subsequently have a higher than typical estimated uncertainty (MU estimates supplied on request) and in these circumstances the sample result is likely biased significantly low.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

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CERTIFICATE OF ANALYSIS 324761

Client Details

Client	EI Australia
Attention	Sergio Raposeira
Address	Suite 6.01, 55 Miller Street, Pyrmont, NSW, 2009

Sample Details

Your Reference	**E26047, Melrose Park**
Number of Samples	1 Water
Date samples received	02/06/2023
Date completed instructions received	05/06/2023

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	13/06/2023
Date of Issue	06/06/2023

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Results Approved By
Dragana Tomas, Senior Chemist

Authorised By
Nancy Zhang, Laboratory Manager

BTEX in Water		
Our Reference		324761-1
Your Reference	UNITS	QT1
Date Sampled		31/05/2023
Type of sample		Water
Date extracted	-	05/06/2023
Date analysed	-	06/06/2023
Benzene	µg/L	<1
Toluene	µg/L	<1
Ethylbenzene	µg/L	<1
m+p-xylene	µg/L	<2
o-xylene	µg/L	<1
Surrogate Dibromofluoromethane	%	101
Surrogate toluene-d8	%	94
Surrogate 4-BFB	%	98

Method ID	Methodology Summary
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.

QUALITY CONTROL: BTEX in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W3	[NT]
Date extracted	-			05/06/2023	[NT]	[NT]	[NT]	[NT]	05/06/2023	[NT]
Date analysed	-			06/06/2023	[NT]	[NT]	[NT]	[NT]	06/06/2023	[NT]
Benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	91	[NT]
Toluene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	93	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	96	[NT]
m+p-xylene	µg/L	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	102	[NT]
o-xylene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Surrogate Dibromofluoromethane	%		Org-023	90	[NT]	[NT]	[NT]	[NT]	89	[NT]
Surrogate toluene-d8	%		Org-023	91	[NT]	[NT]	[NT]	[NT]	91	[NT]
Surrogate 4-BFB	%		Org-023	95	[NT]	[NT]	[NT]	[NT]	100	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
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LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

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For VOCs in water samples, three vials are required for duplicate or spike analysis.

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In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Where matrix spike recoveries fall below the lower limit of the acceptance criteria (e.g. for non-labile or standard Organics <60%), positive result(s) in the parent sample will subsequently have a higher than typical estimated uncertainty (MU estimates supplied on request) and in these circumstances the sample result is likely biased significantly low.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Sergio Raposeira
Client	EI AUSTRALIA
Address	SUITE 6.01 55 MILLER STREET PYRMONT NSW 2009
Telephone	61 2 95160722
Facsimile	(Not specified)
Email	sergio.raposeira@eiaustralia.com.au
Project	**E26047 19 Hope Street, Melrose Park**
Order Number	**E26047**
Samples	6

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	**SE248519 R0**
Date Received	31/5/2023
Date Reported	8/6/2023

COMMENTS

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

SIGNATORIES

Akheeqar BENIAMEEN
Chemist

Bennet LO
Senior Chemist

Kamrul AHSAN
Senior Chemist

Ly Kim HA
Organic Section Head

Shane MCDERMOTT
Inorganic/Metals Chemist

VOCs in Water [AN433] Tested: 5/6/2023

PARAMETER	UOM	LOR	GWBH1M WATER - 31/5/2023 SE248519.001	GWBH2M WATER - 31/5/2023 SE248519.002	GWBH3M WATER - 31/5/2023 SE248519.003	QD1 WATER - 31/5/2023 SE248519.004	Trip blank WATER - 31/5/2023 SE248519.005
Benzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
m/p-xylene	µg/L	1	<1	<1	<1	<1	<1
o-xylene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Xylenes	µg/L	1.5	<1.5	<1.5	<1.5	<1.5	<1.5
Total BTEX	µg/L	3	<3	<3	<3	<3	<3
Naphthalene (VOC)*	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dichlorodifluoromethane (CFC-12)	µg/L	5	<5	<5	<5	-	-
Chloromethane	µg/L	5	<5	<5	<5	-	-
Vinyl chloride (Chloroethene)	µg/L	0.3	<0.3	<0.3	<0.3	-	-
Bromomethane	µg/L	10	<10	<10	<10	-	-
Chloroethane	µg/L	5	<5	<5	<5	-	-
Trichlorofluoromethane	µg/L	1	<1	<1	<1	-	-
Acetone (2-propanone)	µg/L	10	<10	<10	<10	-	-
Iodomethane	µg/L	5	<5	<5	<5	-	-
1,1-dichloroethene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
Acrylonitrile	µg/L	0.5	<0.5	<0.5	<0.5	-	-
Dichloromethane (Methylene chloride)	µg/L	5	<5	<5	<5	-	-
Allyl chloride	µg/L	2	<2	<2	<2	-	-
Carbon disulfide	µg/L	2	<2	<2	<2	-	-
trans-1,2-dichloroethene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
MtBE (Methyl-tert-butyl ether)	µg/L	2	<2	<2	<2	-	-
1,1-dichloroethane	µg/L	0.5	<0.5	<0.5	<0.5	-	-
Vinyl acetate*	µg/L	10	<10	<10	<10	-	-
MEK (2-butanone)	µg/L	10	<10	<10	<10	-	-
cis-1,2-dichloroethene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
Bromochloromethane	µg/L	0.5	<0.5	<0.5	<0.5	-	-
Chloroform (THM)	µg/L	0.5	**58**	**28**	**0.6**	-	-
2,2-dichloropropane	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,2-dichloroethane	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,1,1-trichloroethane	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,1-dichloropropene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
Carbon tetrachloride	µg/L	0.5	<0.5	<0.5	<0.5	-	-
Dibromomethane	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,2-dichloropropane	µg/L	0.5	<0.5	<0.5	<0.5	-	-
Trichloroethene (Trichloroethylene,TCE)	µg/L	0.5	<0.5	<0.5	<0.5	-	-
2-nitropropane	µg/L	100	<100	<100	<100	-	-
Bromodichloromethane (THM)	µg/L	0.5	**8.4**	**2.7**	<0.5	-	-
MIBK (4-methyl-2-pentanone)	µg/L	5	<5	<5	<5	-	-
cis-1,3-dichloropropene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
trans-1,3-dichloropropene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,1,2-trichloroethane	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,3-dichloropropane	µg/L	0.5	<0.5	<0.5	<0.5	-	-
Dibromochloromethane (THM)	µg/L	0.5	**1.6**	**0.6**	<0.5	-	-
2-hexanone (MBK)	µg/L	5	<5	<5	<5	-	-
1,2-dibromoethane (EDB)	µg/L	0.5	<0.5	<0.5	<0.5	-	-
Tetrachloroethene (Perchloroethylene,PCE)	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,1,1,2-tetrachloroethane	µg/L	0.5	<0.5	<0.5	<0.5	-	-
Chlorobenzene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
Bromoform (THM)	µg/L	0.5	<0.5	<0.5	<0.5	-	-
Styrene (Vinyl benzene)	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,1,2,2-tetrachloroethane	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,2,3-trichloropropane	µg/L	0.5	<0.5	<0.5	<0.5	-	-
trans-1,4-dichloro-2-butene	µg/L	1	<1	<1	<1	-	-
Isopropylbenzene (Cumene)	µg/L	0.5	<0.5	<0.5	<0.5	-	-

VOCs in Water [AN433] Tested: 5/6/2023 (continued)

PARAMETER	UOM	LOR	GWBH1M WATER - 31/5/2023 SE248519.001	GWBH2M WATER - 31/5/2023 SE248519.002	GWBH3M WATER - 31/5/2023 SE248519.003	QD1 WATER - 31/5/2023 SE248519.004	Trip blank WATER - 31/5/2023 SE248519.005
Bromobenzene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
n-propylbenzene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
2-chlorotoluene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
4-chlorotoluene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,3,5-trimethylbenzene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
tert-butylbenzene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,2,4-trimethylbenzene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
sec-butylbenzene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,3-dichlorobenzene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,4-dichlorobenzene	µg/L	0.3	<0.3	<0.3	<0.3	-	-
p-isopropyltoluene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,2-dichlorobenzene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
n-butylbenzene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,2-dibromo-3-chloropropane	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,2,4-trichlorobenzene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
Hexachlorobutadiene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,2,3-trichlorobenzene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
Total VOC	µg/L	10	68	31	<10	-	-

VOCs in Water [AN433] Tested: 5/6/2023 (continued)

PARAMETER	UOM	LOR	Trip Spike WATER - 31/5/2023 SE248519.006
Benzene	µg/L	0.5	[98%]
Toluene	µg/L	0.5	[100%]
Ethylbenzene	µg/L	0.5	[97%]
m/p-xylene	µg/L	1	[97%]
o-xylene	µg/L	0.5	[96%]
Total Xylenes	µg/L	1.5	-
Total BTEX	µg/L	3	-
Naphthalene (VOC)*	µg/L	0.5	[95%]
Dichlorodifluoromethane (CFC-12)	µg/L	5	-
Chloromethane	µg/L	5	-
Vinyl chloride (Chloroethene)	µg/L	0.3	-
Bromomethane	µg/L	10	-
Chloroethane	µg/L	5	-
Trichlorofluoromethane	µg/L	1	-
Acetone (2-propanone)	µg/L	10	-
Iodomethane	µg/L	5	-
1,1-dichloroethene	µg/L	0.5	-
Acrylonitrile	µg/L	0.5	-
Dichloromethane (Methylene chloride)	µg/L	5	-
Allyl chloride	µg/L	2	-
Carbon disulfide	µg/L	2	-
trans-1,2-dichloroethene	µg/L	0.5	-
MtBE (Methyl-tert-butyl ether)	µg/L	2	-
1,1-dichloroethane	µg/L	0.5	-
Vinyl acetate*	µg/L	10	-
MEK (2-butanone)	µg/L	10	-
cis-1,2-dichloroethene	µg/L	0.5	-
Bromochloromethane	µg/L	0.5	-
Chloroform (THM)	µg/L	0.5	-
2,2-dichloropropane	µg/L	0.5	-
1,2-dichloroethane	µg/L	0.5	-
1,1,1-trichloroethane	µg/L	0.5	-
1,1-dichloropropene	µg/L	0.5	-
Carbon tetrachloride	µg/L	0.5	-
Dibromomethane	µg/L	0.5	-
1,2-dichloropropane	µg/L	0.5	-
Trichloroethene (Trichloroethylene,TCE)	µg/L	0.5	-
2-nitropropane	µg/L	100	-
Bromodichloromethane (THM)	µg/L	0.5	-
MIBK (4-methyl-2-pentanone)	µg/L	5	-
cis-1,3-dichloropropene	µg/L	0.5	-
trans-1,3-dichloropropene	µg/L	0.5	-
1,1,2-trichloroethane	µg/L	0.5	-
1,3-dichloropropane	µg/L	0.5	-
Dibromochloromethane (THM)	µg/L	0.5	-
2-hexanone (MBK)	µg/L	5	-
1,2-dibromoethane (EDB)	µg/L	0.5	-
Tetrachloroethene (Perchloroethylene,PCE)	µg/L	0.5	-
1,1,1,2-tetrachloroethane	µg/L	0.5	-
Chlorobenzene	µg/L	0.5	-
Bromoform (THM)	µg/L	0.5	-
Styrene (Vinyl benzene)	µg/L	0.5	-
1,1,2,2-tetrachloroethane	µg/L	0.5	-
1,2,3-trichloropropane	µg/L	0.5	-
trans-1,4-dichloro-2-butene	µg/L	1	-
Isopropylbenzene (Cumene)	µg/L	0.5	-

VOCs in Water [AN433] Tested: 5/6/2023 (continued)

PARAMETER	UOM	LOR	Trip Spike WATER - 31/5/2023 SE248519.006
Bromobenzene	µg/L	0.5	-
n-propylbenzene	µg/L	0.5	-
2-chlorotoluene	µg/L	0.5	-
4-chlorotoluene	µg/L	0.5	-
1,3,5-trimethylbenzene	µg/L	0.5	-
tert-butylbenzene	µg/L	0.5	-
1,2,4-trimethylbenzene	µg/L	0.5	-
sec-butylbenzene	µg/L	0.5	-
1,3-dichlorobenzene	µg/L	0.5	-
1,4-dichlorobenzene	µg/L	0.3	-
p-isopropyltoluene	µg/L	0.5	-
1,2-dichlorobenzene	µg/L	0.5	-
n-butylbenzene	µg/L	0.5	-
1,2-dibromo-3-chloropropane	µg/L	0.5	-
1,2,4-trichlorobenzene	µg/L	0.5	-
Hexachlorobutadiene	µg/L	0.5	-
1,2,3-trichlorobenzene	µg/L	0.5	-
Total VOC	µg/L	10	-

Volatile Petroleum Hydrocarbons in Water [AN433] Tested: 5/6/2023

PARAMETER	UOM	LOR	GWBH1M WATER - 31/5/2023 SE248519.001	GWBH2M WATER - 31/5/2023 SE248519.002	GWBH3M WATER - 31/5/2023 SE248519.003	QD1 WATER - 31/5/2023 SE248519.004
TRH C6-C9	µg/L	40	**44**	<40	<40	**43**
Benzene (F0)	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
TRH C6-C10	µg/L	50	<50	<50	<50	<50
TRH C6-C10 minus BTEX (F1)	µg/L	50	<50	<50	<50	<50

TRH (Total Recoverable Hydrocarbons) in Water [AN403] Tested: 2/6/2023

PARAMETER	UOM	LOR	GWBH1M WATER - 31/5/2023 SE248519.001	GWBH2M WATER - 31/5/2023 SE248519.002	GWBH3M WATER - 31/5/2023 SE248519.003	QD1 WATER - 31/5/2023 SE248519.004
TRH C10-C14	μg/L	50	<50	<50	<50	<50
TRH C15-C28	μg/L	200	750	<200	<200	<200
TRH C29-C36	μg/L	200	230	<200	<200	<200
TRH C37-C40	μg/L	200	<200	<200	<200	<200
TRH >C10-C16	μg/L	60	<60	<60	<60	<60
TRH >C10-C16 - Naphthalene (F2)	μg/L	60	<60	<60	<60	<60
TRH >C16-C34 (F3)	μg/L	500	980	<500	<500	<500
TRH >C34-C40 (F4)	μg/L	500	<500	<500	<500	<500
TRH C10-C40	μg/L	320	1000	<320	<320	<320

PAH (Polynuclear Aromatic Hydrocarbons) in Water [AN420] Tested: 2/6/2023

PARAMETER	UOM	LOR	GWBH1M WATER - 31/5/2023 SE248519.001	GWBH2M WATER - 31/5/2023 SE248519.002	GWBH3M WATER - 31/5/2023 SE248519.003
Naphthalene	µg/L	0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	µg/L	0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	µg/L	0.1	<0.1	<0.1	<0.1
Acenaphthylene	µg/L	0.1	<0.1	<0.1	<0.1
Acenaphthene	µg/L	0.1	<0.1	<0.1	<0.1
Fluorene	µg/L	0.1	<0.1	<0.1	<0.1
Phenanthrene	µg/L	0.1	<0.1	<0.1	<0.1
Anthracene	µg/L	0.1	<0.1	<0.1	<0.1
Fluoranthene	µg/L	0.1	<0.1	<0.1	<0.1
Pyrene	µg/L	0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	µg/L	0.1	<0.1	<0.1	<0.1
Chrysene	µg/L	0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	µg/L	0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	µg/L	0.1	<0.1	<0.1	<0.1
Benzo(b&j&k)fluoranthene	µg/L	0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	µg/L	0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	µg/L	0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	µg/L	0.1	<0.1	<0.1	<0.1
Total PAH (18)	µg/L	1	<1	<1	<1

Total Phenolics in Water [AN295] Tested: 2/6/2023

			GWBH1M	GWBH2M	GWBH3M
			WATER	WATER	WATER
			-	-	-
			31/5/2023	31/5/2023	31/5/2023
PARAMETER	UOM	LOR	SE248519.001	SE248519.002	SE248519.003
Total Phenols	mg/L	0.05	<0.05	<0.05	<0.05

pH in water [AN101] Tested: 2/6/2023

PARAMETER	UOM	LOR	GWBH1M WATER - 31/5/2023 SE248519.001	GWBH2M WATER - 31/5/2023 SE248519.002	GWBH3M WATER - 31/5/2023 SE248519.003
pH**	pH Units	0.1	6.4	5.9	5.4

Conductivity and TDS by Calculation - Water [AN106] Tested: 2/6/2023

PARAMETER	UOM	LOR	GWBH1M WATER - 31/5/2023 SE248519.001	GWBH2M WATER - 31/5/2023 SE248519.002	GWBH3M WATER - 31/5/2023 SE248519.003
Conductivity @ 25 C	µS/cm	2	1100	2900	260

Total Dissolved Solids (TDS) in water [AN113]   Tested: 5/6/2023

PARAMETER	UOM	LOR	GWBH1M WATER - 31/5/2023 SE248519.001	GWBH2M WATER - 31/5/2023 SE248519.002	GWBH3M WATER - 31/5/2023 SE248519.003
Total Dissolved Solids Dried at 175-185°C	mg/L	10	590	1600	220

Turbidity [AN119] Tested: 2/6/2023

			GWBH1M WATER - 31/5/2023	GWBH2M WATER - 31/5/2023	GWBH3M WATER - 31/5/2023
PARAMETER	UOM	LOR	SE248519.001	SE248519.002	SE248519.003
Turbidity	NTU	0.5	24	39	5.3

Total Cyanide in water by Discrete Analyser [AN077/AN287] Tested: 2/6/2023

PARAMETER	UOM	LOR	GWBH1M WATER - 31/5/2023 SE248519.001	GWBH2M WATER - 31/5/2023 SE248519.002	GWBH3M WATER - 31/5/2023 SE248519.003
Total Cyanide	mg/L	0.004	<0.004	<0.004	<0.004

Metals in Water (Dissolved) by ICPOES [AN320] Tested: 2/6/2023

PARAMETER	UOM	LOR	GWBH1M WATER - 31/5/2023 SE248519.001	GWBH2M WATER - 31/5/2023 SE248519.002	GWBH3M WATER - 31/5/2023 SE248519.003
Calcium, Ca	mg/L	0.2	23	24	1.1
Magnesium, Mg	mg/L	0.1	39	69	2.5
Total Hardness by Calculation	mg CaCO3/L	1	220	340	13

Trace Metals (Dissolved) in Water by ICPMS [AN318] Tested: 2/6/2023

PARAMETER	UOM	LOR	GWBH1M WATER - 31/5/2023 SE248519.001	GWBH2M WATER - 31/5/2023 SE248519.002	GWBH3M WATER - 31/5/2023 SE248519.003	QD1 WATER - 31/5/2023 SE248519.004
Aluminium	µg/L	5	75	170	69	-
Arsenic	µg/L	1	<1	<1	1	<1
Cadmium	µg/L	0.1	<0.1	0.2	<0.1	0.1
Chromium	µg/L	1	<1	<1	1	<1
Copper	µg/L	1	5	2	<1	5
Lead	µg/L	1	<1	<1	<1	<1
Nickel	µg/L	1	31	64	7	29
Zinc	µg/L	5	99	420	14	93

Mercury (dissolved) in Water [AN311(Perth)/AN312] Tested: 2/6/2023

PARAMETER	UOM	LOR	GWBH1M WATER - 31/5/2023 SE248519.001	GWBH2M WATER - 31/5/2023 SE248519.002	GWBH3M WATER - 31/5/2023 SE248519.003	QD1 WATER - 31/5/2023 SE248519.004
Mercury	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001

Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples [MA-1523] Tested: 8/6/2023

PARAMETER	UOM	LOR	GWBH1M WATER - 31/5/2023 SE248519.001	GWBH2M WATER - 31/5/2023 SE248519.002	GWBH3M WATER - 31/5/2023 SE248519.003
Perfluorobutanoic acid (PFBA)	µg/L	0.002	0.011	0.019	<0.002
Perfluoropentanoic acid (PFPeA)	µg/L	0.002	<0.002	<0.002	<0.002
Perfluorohexanoic acid (PFHxA)	µg/L	0.002	<0.002	<0.002	<0.002
Perfluoroheptanoic acid (PFHpA)	µg/L	0.002	<0.002	<0.002	<0.002
Perfluorooctanoic Acid (PFOA)	µg/L	0.001	0.002	0.002	0.002
Perfluorononanoic acid (PFNA)	µg/L	0.004	<0.004	<0.004	<0.004
Perfluorodecanoic acid (PFDA)	µg/L	0.004	<0.004	<0.004	<0.004
Perfluoroundecanoic acid (PFUnA)	µg/L	0.004	<0.004	<0.004	<0.004
Perfluorododecanoic acid (PFDoA)	µg/L	0.004	<0.004	<0.004	<0.004
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.004	<0.004	<0.004	<0.004
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.004	<0.004	<0.004	<0.004
Perfluorohexadecanoic acid (PFHxDA)	µg/L	0.008	<0.008	<0.008	<0.008
Perfluorobutane sulfonate (PFBS)	µg/L	0.004	<0.004	<0.004	<0.004
Perfluoropentane sulfonate (PFPeS)	µg/L	0.004	<0.004	<0.004	<0.004
Perfluorohexane sulfonate (PFHxS)	µg/L	0.002	0.002	<0.002	0.004
Perfluoroheptane sulfonate (PFHpS)	µg/L	0.002	<0.002	<0.002	<0.002
Perfluorooctane sulfonate (PFOS)	µg/L	0.002	<0.002	<0.002	<0.002
Sum of PFHxS and PFOS	µg/L	0.002	0.002	<0.002	0.004
Perfluorononane sulfonate (PFNS)	µg/L	0.002	<0.002	<0.002	<0.002
Perfluorodecane sulfonate (PFDS)	µg/L	0.002	<0.002	<0.002	<0.002
Perfluorododecane sulfonate (PFDoS)	µg/L	0.002	<0.002	<0.002	<0.002
1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS)	µg/L	0.002	<0.002	<0.002	<0.002
1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS)	µg/L	0.002	<0.002	<0.002	<0.002
1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS)	µg/L	0.002	<0.002	<0.002	<0.002
Perfluoroctane sulfonamide (PFOSA)	µg/L	0.008	<0.008	<0.008	<0.008
N-Methylperfluoroctane sulfonamide (N-MeFOSA)	µg/L	0.01	<0.01	<0.01	<0.01
N-Ethylperfluoroctane sulfonamide (N-EtFOSA)	µg/L	0.01	<0.01	<0.01	<0.01
2-(N-Methylperfluorooctane sulfonamido)-ethanol	µg/L	0.01	<0.01	<0.01	<0.01
2-(N-Ethylperfluorooctane sulfonamido)-ethanol	µg/L	0.01	<0.01	<0.01	<0.01
N-Methylperfluorooctanesulfonamidoacetic acid	µg/L	0.01	<0.01	<0.01	<0.01
N-Ethylperfluorooctanesulfonamidoacetic Acid	µg/L	0.01	<0.01	<0.01	<0.01
Total of PFAS (n=30)	µg/L	0.04	<0.04	<0.04	<0.04

METHOD	METHODOLOGY SUMMARY
AN020	Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B.
AN077	Hydrogen cyanide is liberated from an acidified sample by distillation and purging with air. The hydrogen cyanide gas is then collected by passing it through a sodium hydroxide scrubbing solution. The scrubbing solution will then be analysed for cyanide by the appropriate method.
AN101	pH in Soil Sludge Sediment and Water: pH is measured electrometrically using a combination electrode (glass plus reference electrode) and is calibrated against 3 buffers purchased commercially. For soils, an extract with water is made at a ratio of 1:5 and the pH determined and reported on the extract. Reference APHA 4500-H+.
AN106	Conductivity and TDS by Calculation: Conductivity is measured by meter with temperature compensation and is calibrated against a standard solution of potassium chloride. Conductivity is generally reported as µmhos/cm or µS/cm @ 25°C. For soils, an extract with water is made at a ratio of 1:5 and the EC determined and reported on the extract, or calculated back to the as-received sample. Total Dissolved Salts can be estimated from conductivity using a conversion factor, which for natural waters, is in the range 0.55 to 0.75. SGS use 0.6. Reference APHA 2510 B.
AN106	Salinity may be calculated in terms of NaCl from the sample conductivity. This assumes all soluble salts present, measured by the conductivity, are present as NaCl.
AN113	Total Dissolved Solids: A well-mixed filtered sample of known volume is evaporated to dryness at 180°C and the residue weighed. Approximate methods for correlating chemical analysis with dissolved solids are available. Reference APHA 2540 C.
AN113	The Total Dissolved Solids residue may also be ignited at 550 C and volatile TDS (Organic TDS) and non-volatile TDS (Inorganic) can be determined.
AN119	Turbidity by Nephelometry: Small particles in a light beam scatter light at a range of angles. A turbidimeter measures this scatter and reports results compared to turbidity standards, in NTU. This procedure is not suitable for very dark coloured liquids or samples with high solids because light absorption causes artificially low light scatter and low turbidity. Reference APHA 2130B.
AN287	A buffered distillate or water sample is treated with chloramine/barbituric acid reagents and the intensity of the colour developed is proportional to the cyanide concentration by DA.
AN295	The water sample or extract of sample is distilled in a phosphoric acid stream. Phenolic compounds in the distillate react with a reagent stream of potassium hexacyanoferrate(III) and 4-Amino-2,3-dimethyl-3-pryazolin-5-one in an alkaline medium to form a coloured complex which is analysed spectrophotometrically onboard a continuous flow analyser.
AN311(Perth)/AN312	Mercury by Cold Vapour AAS in Waters: 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.
AN318	Determination of elements at trace level in waters by ICP-MS technique,, referenced to USEPA 6020B and USEPA 200.8 (5.4).
AN320	Metals by ICP-OES: Samples are preserved with 10% nitric acid for a wide range of metals and some non-metals. This solution is measured by Inductively Coupled Plasma. Solutions are aspirated into an argon plasma at 8000-10000K and emit characteristic energy or light as a result of electron transitions through unique energy levels. The emitted light is focused onto a diffraction grating where it is separated into components .
AN320	Photomultipliers or CCDs are used to measure the light intensity at specific wavelengths. This intensity is directly proportional to concentration. Corrections are required to compensate for spectral overlap between elements. Reference APHA 3120 B.
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). Where F2 is corrected for Naphthalene, the VOC data for Naphthalene is used.
AN403	Additionally, the volatile C6-C9/C6-C10 fractions may be determined by a purge and trap technique and GC/MS because of the potential for volatiles loss. Total Recoveerable Hydrocarbons - Silica (TRH-Silica) 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 .
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.
MA-1523	This method covers the analysis of per- and polyfluoroalkyl substances (PFAS) in aqueous, solid and biosolid samples and solvent extracts, determined as the total of linear and branched isomers. After spiking with isotopically labelled quantification surrogates and clean-up via SPE cartridges sample extracts are analysed by liquid chromatography/mass spectrometry (LC-MS/MS). PFAS concentrations are determined by isotope dilution quantification.

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:
a. 1 Bq is equivalent to 27 pCi
b. 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.

Appendix I – QA/QC Assessment

I.1 Quality Assurance / Quality Control Program

Quality assurance comprises an assessment of the reliability of the field procedures and laboratory results against standard industry practices and the SAQP. A summary of the project QA/QC measures incorporated into this DSI is presented in **Table I-1**.

Table I-1 Project QC Measures

Task	Description	Project
Field QA/QC		
General	Work was to be undertaken following standard field procedures which are based on industry accepted standard practice.	Soil samples were collected directly from the augers and excavator bucket. Soil samples were placed in 250 gram glass jars, which were filled to minimise headspace, and sealed using Teflon-coated lids. Groundwater samples were obtained using sample bottles/vials provided by the laboratory.
	All fieldwork was supervised by a suitably qualified and experienced scientist or engineer.	Yes
Equipment Decontamination	Sampling equipment to be decontaminated after the collection of each soil sample by washing with phosphate-free detergent (such as Decon 90 or Alconox) and potable water, followed by a final distilled water rinse. One rinsate blank would be collected and analysed for the primary contaminants. All results should be non-detect.	Yes One rinsate samples were collected in total. One was collected during the soil investigation on 31 March 2023. All results were reported as below the detection limits. With an exception of pH, field measurement faulty due to equipment.
Transport	Samples were stored in a chilled (with ice) cooler box and transported to the laboratories. To ensure the integrity of the samples from collection to receipt by the analytical laboratory, samples were sent by courier to the laboratories under 'chain of custody' describing sample preservation and transport duration.	Yes
Trip Blanks	Trip Blank (TB) samples were to be prepared and analysed by the primary laboratory for BTEX. Analytical results for this sample were below the laboratory LOR, indicating that ideal sample transport and handling conditions were achieved.	Three trip blank samples prepared by the primary laboratory were analysed for BTEX during soil and groundwater testing. The results were reported below the laboratory LOR, indicating that sample transport acceptable.
Trip Spikes	Trip spike (TS) samples were to be submitted to the primary laboratory for BTEX analysis, the results for which were reported within the RPD acceptance levels for trip spike recovery. It was therefore concluded that satisfactory sample transport and handling conditions were achieved.	Three trip spike samples were submitted to the primary laboratory for BTEX analysis, the results of which were reported within the RPD acceptance levels for trip spike recovery. It was therefore concluded that satisfactory sample transport and handling conditions were achieved.

Task	Description	Project
Duplicates	Field duplicate samples were analysed as follows: ▪ intra-laboratory duplicate samples at a rate of 1 in 20 primary samples (as per NEPM); and ▪ inter-laboratory duplicate samples at a rate of 1 in 20 primary samples (as per NEPM). Field and laboratory acceptable limits between 30-50% RPD as stated by AS4482.1–2005. RPDs that exceed this range may be considered acceptable where: ▪ Results are less than 10 times the limits of reporting (LOR); ▪ Results are less than 20 times the LOR and the RPD is less than 50%; or ▪ Heterogeneous materials or volatile compounds are encountered. Non-compliance is to be documented in the report and the sample re-analysed or a higher level conservatively adopted.	The required sampling density of 1 per 20 duplicated primary samples was achieved and sufficient for the investigation. Laboratory duplicates prepared and analysed. Minor non-conformance, with negligible effects on data use for interpretative purposes. Field QC samples are presented in **Table I-2** and calculated RPD values are presented in **Table 3.1** and **Table 3.2**. RPDs were within the acceptable ranges, except for: <u>Soil:</u> QD2: Nickel – RPD=51.16% QT1: Arsenic – RPD=80% QT1: Nickel – RPD=82.76% QT2: Arsenic– RPD=80% QT2: Chromium – RPD=70.97% QT2: Copper – RPD=62.30% QT2: Nickel – RPD=60.87% Exceedances of the RPD range limit for soil duplicates were likely to be due to the heterogeneous nature of the fill material. Copies of laboratory reports are included in **Appendix H**.
<u>Laboratory QA/QC</u>		
Laboratory Analysis	The laboratories selected are NATA accredited for the analytes selected and perform their own internal QA/QC programs.	Yes SGS - primary laboratory Envirolab - secondary laboratory Laboratory QA/QC analyses are included in **Appendix J.**
	Appropriate detection limits were used for the analyses to be undertaken.	Practical Quantitation Limits for all tested parameters during the DSI are presented in laboratory analytical reports in **Appendix H.**
Holding Times	Holding times are the maximum permissible elapsed time in days from the collection of the sample to its extraction and/or analysis. All extraction and analyses should be completed within standard guidelines.	All samples were analysed within the holding times with an exception of extracted date for: <u>Groundwater:</u> <u>pH</u> SE248519.001LB281217 GWBH1M; SE248519.002 LB281217 GWBH2M; and SE248519.003 LB281217 GWBH3M. <u>Turbidity</u> SE248519.001LB281242 GWBH1M; SE248519.002 LB281242 GWBH2M; and SE248519.003 LB281242 GWBH3M.

<table>
<tr><th>Task</th><th>Description</th><th>Project</th></tr>
<tr><td>Method Blanks</td><td>The method blank sample is laboratory prepared, containing the reagents used to prepare the sample for final analysis. The purpose of this procedure is to identify contamination in the reagent materials and assess potential bias in the sample analysis due to contaminated reagents. The QC criterion aims to find no detectable contamination in the reagents. Each analysis procedure should be subject to a method blank analysis. The results of each should indicate that contaminants were not detected.</td><td>All method blanks were within acceptable ranges.</td></tr>
<tr><td>Laboratory Duplicates</td><td>Laboratory duplicates are field samples that are split in the laboratory and subsequently analysed a number of times in the same batch. These sub-samples are selected by the laboratory to assess the accuracy and precision of the analytical method.
The selected laboratories should undertake QA/QC procedures such as calibration standards, laboratory control samples, surrogates, reference materials, sample duplicates and matrix spikes. Intra-laboratory duplicates should be performed at a frequency of 1 per 10 samples.</td><td>Laboratory duplicates for soil and groundwater samples were generally within the acceptance criteria, except for the follow:
<u>Soil:</u>
▪ SE248500.002 (duplicate LB281392.014),
‣ Total PAH (18) (RPD=62%).
The RPD failed the acceptance criteria due to sample heterogeneity.
▪ SE248200.023 (duplicate LB280870.023),
‣ Zinc (RPD=60%).
The RPD failed the acceptance criteria due to sample heterogeneity.
<u>Groundwater:</u>
▪ SE248596.004 (duplicate LB281443.024),
‣ d8-toluene (Surrogate) (RPD=53%).
At least 2 of 3 surrogates are within acceptance criteria</td></tr>
<tr><td>Laboratory Control Standard</td><td>A laboratory control standard is a standard reference material used in preparing primary standards. The concentration should be equivalent to a mid-range standard to confirm the primary calibration. Laboratory control samples should be performed on a frequency of 1 per 20 samples or at least one per analytical run.</td><td>All laboratory control standards were within acceptable ranges.</td></tr>
<tr><td>Matrix Spikes</td><td>Matric spikes are field samples to which a predetermined stock solution of known concentration has been added. The samples are then analysed for recovery of the known addition. Recoveries should be within the stated laboratory control limits of 70 to 130% and duplicates should have RPDs of less than 50%.</td><td>All of matrix data were within acceptable ranges.</td></tr>
</table>

Task	Description	Project
Surrogate Spikes	Surrogate spikes provide a means of checking, for every analysis that no gross errors have occurred at any stage of the procedure leading to significant analyte loss. Recoveries should be within the stated laboratory control limits of 70 to 130%.	Assessment of surrogate spikes has been undertaken by the laboratory. Recovery were within the acceptable range.
Conclusion	The QA/QC indicators should either all comply with the required standards or showed no variations that would have no significant effect on the quality of the data.	Assessment of the investigation QA/QC is presented in the following sections.

I.2 Calculation of Relative Percentage Difference

The RPD values were calculated using the following equation:

$$RPD = \frac{|C_O - C_R|}{[(C_O + C_R)/2]} \times 100$$

Where:

C_O = Concentration obtained for the primary sample; and

C_R = Concentration obtained for the blind replicate or split duplicate sample.

I.3 Field QA/QC

The field (intra- / inter- laboratory) duplicate samples collected during the works are summarised in **Table I-2**. Inter-lab duplicates were analysed by the secondary laboratory, Envirolab.

Table I-2 Field QC Sampling Program

Matrix	Primary QA Sample	Duplicate (Primary Lab)	Triplicate (Secondary Lab)	Total Duplicates
Soil	HA2_0.2-0.3 HA1_0.2-0.3	QD1 QD2	QT1 QT2	4
Groundwater	BH1M	QD1	QT1	2

I.4 Field Data Quality Indicators

A discussion of the field data quality indicators is presented in **Table I-3** below.

Table I-3 Field Data Quality Indicators

DQI	Item	Conformance
Precision Measure of the variability (or reproducibility) of data.	Standard field procedures appropriate and complied with	**Yes**
Accuracy Quantitative measure of the closeness of reported data to the true values.	Standard field procedures appropriate and complied with	**Yes**
	Calibration of instruments against known standards	**Yes**
Representativeness Confidence the data are representative of each media present on the site.	Appropriate media sampled according to SAQP	**Yes**
	Each media identified in SAQP sampled	**Yes**
Completeness Percentage of useable data from sampling episode (set).	Each critical location sampled	**Yes**
	SAQP appropriate and complied with	**Part (Due to inaccessibility to the western portion of the site)**
	Appropriate number of field duplicate samples taken	**Yes**
	Experienced sampler	**Yes**
	Field documentation correct	**Yes**
Comparability Confidence [expressed qualitatively] that data may be considered to be equivalent for each sampling and analytical event.	Same sampling method used on each occasion/location	**Yes**
	Experienced sampler	**Yes**
	Same type of samples collected (filtered, size, fractions)	**Yes**

I.5 Conclusion for the Field QA/QC

All field work, including equipment decontamination and sample preservation and transport, was conducted in accordance with the SAQP and SOPs, which were devised with reference to industry-approved guidelines. With an exception of pH, field measurement faulty due to equipment. Appropriate QC measures were integrated into each sampling event and the DQI were met, or if not, the minor non-conformances had negligible effects on the data use for interpretative purposes.

All samples, including field QC samples, were transported to the primary and secondary laboratories under chilled conditions, using strict COC procedures. Relevant documents (COC forms) were presented with the samples at the times of delivery. All supporting documents (COCs and SRAs) were completed in full and signed, where appropriate. Copies of these were included in **Appendix G**. EI considered the field QA/QC program carried out during the DSI to be appropriate.

I.6 Laboratory QA/QC

Primary and intra-laboratory duplicate samples were analysed by SGS (located in Alexandria NSW), with inter-laboratory duplicate samples analysed by Envirolab (located in Chatswood NSW). All laboratories are accredited by NATA for the analyses undertaken. A discussion of the laboratory DQIs is presented below.

Table I-4 Laboratory Data Quality Indicators

DQI	Item	Conformance
Completeness A measure of the amount of useable data (expressed as %) from a data collection activity	All critical samples analysed according to SAQP and proposal	**Yes**
	All analytes analysed according to SAQP in proposal	**Yes**
	Appropriate methods and PQLs	**Yes**
	Sample documentation complete	**Yes**
	Sample holding times complied with	**Yes**
Comparability The confidence (expressed qualitatively) that data may be considered to be equivalent for each sampling and analytical event	Sample analytical methods used (including clean-up)	**Yes**
	Sample PQLs (justify/ quantify if different)	**Yes**
	Same laboratories (justify/ quantify if different)	**Yes**
	Same units (justify/ quantify if different)	**Yes**
Representativeness Confidence that data are representative of each media	All key samples analysed according to SAQP in the proposal	**Yes**
Precision A quantitative measure of the variability (or reproducibility) of data	Analysis of laboratory duplicates	**Yes**
	Analysis of field duplicates	**Yes**
	Analysis of laboratory-prepared volatile trip spikes	**Yes**
Accuracy A quantitative measure of the closeness of reported data to the true value	Analysis of field blanks	**Yes**
	Analysis of rinsate/ rinsate blanks	**Yes**
	Analysis of method blanks	**Yes**
	Analysis of matrix spikes (MS)	**Yes**
	Analysis of surrogate spikes	**Yes**
	Analysis of laboratory control samples	**Yes**

I.7 Conclusions for the Laboratory QA/QC

All contracted laboratories (SGS and Envirolab) were accredited by NATA for the analyses undertaken. All analytical procedures used were industry recognised and endorsed standard methods. Appropriate QC measures were integrated into each testing batch and the DQI were met, or if not, the variability was suitably justified. All final reports were submitted in full and included all requested analyses, as per the signed COC forms. EI considered the laboratory QA/QC programs carried out during the DSI to be appropriate.

I.8 Summary of Project QA/QC

The project DQOs specified in **Section 5**, **Table 5-1** were considered to have been achieved. The adopted QA/QC program ensured that the data collated during the DSI were accurate, precise and representative of the (final) site conditions. It was therefore considered that the data were reliable and that the results could be used for DSI interpretative purposes.

Appendix J – Laboratory DQOs

STATEMENT OF QA/QC PERFORMANCE

SE248520 R0

CLIENT DETAILS

Contact	Sergio Raposeira
Client	EI AUSTRALIA
Address	SUITE 6.01 55 MILLER STREET PYRMONT NSW 2009
Telephone	61 2 95160722
Facsimile	(Not specified)
Email	sergio.raposeira@eiaustralia.com.au
Project	**E26047 19 Hope St Melrose Park**
Order Number	**E26047**
Samples	8

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	**SE248520 R0**
Date Received	31 May 2023
Date Reported	09 Jun 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	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	1 item

SAMPLE SUMMARY

Sample counts by matrix	7 Soil, 1 Water	Type of documentation received	COC
Date documentation received	1/6/2023@3:07pm	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	17.2°C
Sample container provider	SGS	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.

Fibre Identification in soil
Method: ME-(AU)-[ENV]AS4964/AN602

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HA4_0.2-0.5	SE248520.001	LB281962	31 May 2023	31 May 2023	30 May 2024	08 Jun 2023	30 May 2024	09 Jun 2023
HA1_0.2-0.3	SE248520.002	LB281962	31 May 2023	31 May 2023	30 May 2024	08 Jun 2023	30 May 2024	09 Jun 2023
HA2_0.2-0.3	SE248520.003	LB281962	31 May 2023	31 May 2023	30 May 2024	08 Jun 2023	30 May 2024	09 Jun 2023

Gravimetric Determination of Asbestos in Soil
Method: ME-(AU)-[ENV]AN605

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HA4_0.2-0.5	SE248520.001	LB281962	31 May 2023	31 May 2023	27 Nov 2023	08 Jun 2023	27 Nov 2023	09 Jun 2023
HA1_0.2-0.3	SE248520.002	LB281962	31 May 2023	31 May 2023	27 Nov 2023	08 Jun 2023	27 Nov 2023	09 Jun 2023
HA2_0.2-0.3	SE248520.003	LB281962	31 May 2023	31 May 2023	27 Nov 2023	08 Jun 2023	27 Nov 2023	09 Jun 2023

Mercury (dissolved) in Water
Method: ME-(AU)-[ENV]AN311(Perth)/AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QR1	SE248520.008	LB281263	31 May 2023	31 May 2023	28 Jun 2023	02 Jun 2023	28 Jun 2023	02 Jun 2023

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HA4_0.2-0.5	SE248520.001	LB281397	31 May 2023	31 May 2023	28 Jun 2023	02 Jun 2023	28 Jun 2023	07 Jun 2023
HA1_0.2-0.3	SE248520.002	LB281397	31 May 2023	31 May 2023	28 Jun 2023	02 Jun 2023	28 Jun 2023	07 Jun 2023
HA2_0.2-0.3	SE248520.003	LB281397	31 May 2023	31 May 2023	28 Jun 2023	02 Jun 2023	28 Jun 2023	07 Jun 2023
QD1	SE248520.004	LB281397	31 May 2023	31 May 2023	28 Jun 2023	02 Jun 2023	28 Jun 2023	07 Jun 2023
QD2	SE248520.005	LB281397	31 May 2023	31 May 2023	28 Jun 2023	02 Jun 2023	28 Jun 2023	07 Jun 2023

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HA4_0.2-0.5	SE248520.001	LB281394	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	07 Jun 2023	06 Jun 2023
HA1_0.2-0.3	SE248520.002	LB281394	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	07 Jun 2023	06 Jun 2023
HA2_0.2-0.3	SE248520.003	LB281394	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	07 Jun 2023	06 Jun 2023
QD1	SE248520.004	LB281394	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	07 Jun 2023	06 Jun 2023
QD2	SE248520.005	LB281394	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	07 Jun 2023	06 Jun 2023
Trip Blank	SE248520.006	LB281394	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	07 Jun 2023	06 Jun 2023

OC Pesticides in Soil
Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HA4_0.2-0.5	SE248520.001	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	08 Jun 2023
HA1_0.2-0.3	SE248520.002	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	08 Jun 2023
HA2_0.2-0.3	SE248520.003	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	08 Jun 2023
QD1	SE248520.004	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	08 Jun 2023
QD2	SE248520.005	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	08 Jun 2023

OP Pesticides in Soil
Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HA4_0.2-0.5	SE248520.001	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	07 Jun 2023
HA1_0.2-0.3	SE248520.002	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	07 Jun 2023
HA2_0.2-0.3	SE248520.003	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	07 Jun 2023
QD1	SE248520.004	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	07 Jun 2023
QD2	SE248520.005	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	07 Jun 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
HA4_0.2-0.5	SE248520.001	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	07 Jun 2023
HA1_0.2-0.3	SE248520.002	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	07 Jun 2023
HA2_0.2-0.3	SE248520.003	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	07 Jun 2023
QD1	SE248520.004	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	07 Jun 2023
QD2	SE248520.005	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	07 Jun 2023

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QR1	SE248520.008	LB281260	31 May 2023	31 May 2023	07 Jun 2023	02 Jun 2023	12 Jul 2023	08 Jun 2023

PCBs in Soil
Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref

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.

PCBs in Soil (continued)

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HA4_0.2-0.5	SE248520.001	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	08 Jun 2023
HA1_0.2-0.3	SE248520.002	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	08 Jun 2023
HA2_0.2-0.3	SE248520.003	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	08 Jun 2023
QD1	SE248520.004	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	08 Jun 2023
QD2	SE248520.005	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	08 Jun 2023

Total Cyanide in soil by Discrete Analyser

Method: ME-(AU)-[ENV]AN077/AN287

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HA4_0.2-0.5	SE248520.001	LB281641	31 May 2023	31 May 2023	14 Jun 2023	06 Jun 2023	14 Jun 2023	07 Jun 2023
HA1_0.2-0.3	SE248520.002	LB281641	31 May 2023	31 May 2023	14 Jun 2023	06 Jun 2023	14 Jun 2023	07 Jun 2023
HA2_0.2-0.3	SE248520.003	LB281641	31 May 2023	31 May 2023	14 Jun 2023	06 Jun 2023	14 Jun 2023	07 Jun 2023

Total Phenolics in Soil

Method: ME-(AU)-[ENV]AN295

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HA4_0.2-0.5	SE248520.001	LB281632	31 May 2023	31 May 2023	14 Jun 2023	06 Jun 2023	14 Jun 2023	06 Jun 2023
HA1_0.2-0.3	SE248520.002	LB281632	31 May 2023	31 May 2023	14 Jun 2023	06 Jun 2023	14 Jun 2023	06 Jun 2023
HA2_0.2-0.3	SE248520.003	LB281632	31 May 2023	31 May 2023	14 Jun 2023	06 Jun 2023	14 Jun 2023	06 Jun 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
HA4_0.2-0.5	SE248520.001	LB281395	31 May 2023	31 May 2023	27 Nov 2023	02 Jun 2023	27 Nov 2023	07 Jun 2023
HA1_0.2-0.3	SE248520.002	LB281395	31 May 2023	31 May 2023	27 Nov 2023	02 Jun 2023	27 Nov 2023	07 Jun 2023
HA2_0.2-0.3	SE248520.003	LB281395	31 May 2023	31 May 2023	27 Nov 2023	02 Jun 2023	27 Nov 2023	07 Jun 2023
QD1	SE248520.004	LB281395	31 May 2023	31 May 2023	27 Nov 2023	02 Jun 2023	27 Nov 2023	07 Jun 2023
QD2	SE248520.005	LB281395	31 May 2023	31 May 2023	27 Nov 2023	02 Jun 2023	27 Nov 2023	07 Jun 2023

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QR1	SE248520.008	LB281319	31 May 2023	31 May 2023	27 Nov 2023	02 Jun 2023	27 Nov 2023	05 Jun 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
HA4_0.2-0.5	SE248520.001	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	07 Jun 2023
HA1_0.2-0.3	SE248520.002	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	07 Jun 2023
HA2_0.2-0.3	SE248520.003	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	07 Jun 2023
QD1	SE248520.004	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	07 Jun 2023
QD2	SE248520.005	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	07 Jun 2023

TRH (Total Recoverable Hydrocarbons) in Water

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QR1	SE248520.008	LB281260	31 May 2023	31 May 2023	07 Jun 2023	02 Jun 2023	12 Jul 2023	08 Jun 2023

VOC's in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HA4_0.2-0.5	SE248520.001	LB281393	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	14 Jun 2023	07 Jun 2023
HA1_0.2-0.3	SE248520.002	LB281393	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	14 Jun 2023	07 Jun 2023
HA2_0.2-0.3	SE248520.003	LB281393	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	14 Jun 2023	07 Jun 2023
QD1	SE248520.004	LB281393	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	14 Jun 2023	07 Jun 2023
QD2	SE248520.005	LB281393	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	14 Jun 2023	07 Jun 2023
Trip Blank	SE248520.006	LB281393	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	14 Jun 2023	07 Jun 2023
Trip Spike	SE248520.007	LB281393	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	14 Jun 2023	07 Jun 2023

VOCs in Water

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QR1	SE248520.008	LB281645	31 May 2023	31 May 2023	14 Jun 2023	06 Jun 2023	14 Jun 2023	07 Jun 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
HA4_0.2-0.5	SE248520.001	LB281393	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	14 Jun 2023	07 Jun 2023
HA1_0.2-0.3	SE248520.002	LB281393	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	14 Jun 2023	07 Jun 2023
HA2_0.2-0.3	SE248520.003	LB281393	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	14 Jun 2023	07 Jun 2023

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.

Volatile Petroleum Hydrocarbons in Soil (continued)

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QD1	SE248520.004	LB281393	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	14 Jun 2023	07 Jun 2023
QD2	SE248520.005	LB281393	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	14 Jun 2023	07 Jun 2023
Trip Blank	SE248520.006	LB281393	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	14 Jun 2023	07 Jun 2023
Trip Spike	SE248520.007	LB281393	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	14 Jun 2023	07 Jun 2023

Volatile Petroleum Hydrocarbons in Water

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QR1	SE248520.008	LB281645	31 May 2023	31 May 2023	14 Jun 2023	06 Jun 2023	14 Jun 2023	07 Jun 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 identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

OC Pesticides in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	HA4_0.2-0.5	SE248520.001	%	60 - 130%	87
	HA1_0.2-0.3	SE248520.002	%	60 - 130%	79
	HA2_0.2-0.3	SE248520.003	%	60 - 130%	82

OP Pesticides in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	HA4_0.2-0.5	SE248520.001	%	60 - 130%	88
	HA1_0.2-0.3	SE248520.002	%	60 - 130%	89
	HA2_0.2-0.3	SE248520.003	%	60 - 130%	88
d14-p-terphenyl (Surrogate)	HA4_0.2-0.5	SE248520.001	%	60 - 130%	95
	HA1_0.2-0.3	SE248520.002	%	60 - 130%	97
	HA2_0.2-0.3	SE248520.003	%	60 - 130%	96

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	HA4_0.2-0.5	SE248520.001	%	70 - 130%	88
	HA1_0.2-0.3	SE248520.002	%	70 - 130%	89
	HA2_0.2-0.3	SE248520.003	%	70 - 130%	88
d14-p-terphenyl (Surrogate)	HA4_0.2-0.5	SE248520.001	%	70 - 130%	95
	HA1_0.2-0.3	SE248520.002	%	70 - 130%	97
	HA2_0.2-0.3	SE248520.003	%	70 - 130%	96
d5-nitrobenzene (Surrogate)	HA4_0.2-0.5	SE248520.001	%	70 - 130%	97
	HA1_0.2-0.3	SE248520.002	%	70 - 130%	98
	HA2_0.2-0.3	SE248520.003	%	70 - 130%	96

PAH (Polynuclear Aromatic Hydrocarbons) in Water

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	QR1	SE248520.008	%	40 - 130%	63
d14-p-terphenyl (Surrogate)	QR1	SE248520.008	%	40 - 130%	79
d5-nitrobenzene (Surrogate)	QR1	SE248520.008	%	40 - 130%	59

PCBs in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
TCMX (Surrogate)	HA4_0.2-0.5	SE248520.001	%	60 - 130%	83
	HA1_0.2-0.3	SE248520.002	%	60 - 130%	75
	HA2_0.2-0.3	SE248520.003	%	60 - 130%	78

VOC's in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	HA4_0.2-0.5	SE248520.001	%	60 - 130%	78
	HA1_0.2-0.3	SE248520.002	%	60 - 130%	73
	HA2_0.2-0.3	SE248520.003	%	60 - 130%	77
	QD1	SE248520.004	%	60 - 130%	92
	QD2	SE248520.005	%	60 - 130%	89
	Trip Blank	SE248520.006	%	60 - 130%	95
	Trip Spike	SE248520.007	%	60 - 130%	92
d4-1,2-dichloroethane (Surrogate)	HA4_0.2-0.5	SE248520.001	%	60 - 130%	82
	HA1_0.2-0.3	SE248520.002	%	60 - 130%	75
	HA2_0.2-0.3	SE248520.003	%	60 - 130%	76
	QD1	SE248520.004	%	60 - 130%	82
	QD2	SE248520.005	%	60 - 130%	81
	Trip Blank	SE248520.006	%	60 - 130%	87
	Trip Spike	SE248520.007	%	60 - 130%	86
d8-toluene (Surrogate)	HA4_0.2-0.5	SE248520.001	%	60 - 130%	71
	HA1_0.2-0.3	SE248520.002	%	60 - 130%	72
	HA2_0.2-0.3	SE248520.003	%	60 - 130%	68
	QD1	SE248520.004	%	60 - 130%	84
	QD2	SE248520.005	%	60 - 130%	82
	Trip Blank	SE248520.006	%	60 - 130%	89
	Trip Spike	SE248520.007	%	60 - 130%	87

VOCs in Water

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

Parameter	Sample Name	Sample Number	Units

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 identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

VOCs in Water (continued) Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	QR1	SE248520.008	%	40 - 130%	107
d4-1,2-dichloroethane (Surrogate)	QR1	SE248520.008	%	40 - 130%	106
d8-toluene (Surrogate)	QR1	SE248520.008	%	40 - 130%	98

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	HA4_0.2-0.5	SE248520.001	%	60 - 130%	78
	HA1_0.2-0.3	SE248520.002	%	60 - 130%	73
	HA2_0.2-0.3	SE248520.003	%	60 - 130%	77
	QD1	SE248520.004	%	60 - 130%	92
	QD2	SE248520.005	%	60 - 130%	89
d4-1,2-dichloroethane (Surrogate)	HA4_0.2-0.5	SE248520.001	%	60 - 130%	82
	HA1_0.2-0.3	SE248520.002	%	60 - 130%	75
	HA2_0.2-0.3	SE248520.003	%	60 - 130%	76
	QD1	SE248520.004	%	60 - 130%	82
	QD2	SE248520.005	%	60 - 130%	81
d8-toluene (Surrogate)	HA4_0.2-0.5	SE248520.001	%	60 - 130%	71
	HA1_0.2-0.3	SE248520.002	%	60 - 130%	72
	HA2_0.2-0.3	SE248520.003	%	60 - 130%	68
	QD1	SE248520.004	%	60 - 130%	84
	QD2	SE248520.005	%	60 - 130%	82

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	QR1	SE248520.008	%	40 - 130%	107
d4-1,2-dichloroethane (Surrogate)	QR1	SE248520.008	%	60 - 130%	106
d8-toluene (Surrogate)	QR1	SE248520.008	%	40 - 130%	98

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 (dissolved) in Water

Method: ME-(AU)-[ENV]AN311(Perth)/AN312

Sample Number	Parameter	Units	LOR	Result
LB281263.001	Mercury	mg/L	0.0001	<0.0001

Mercury in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB281397.001	Mercury	mg/kg	0.05	<0.05

OC Pesticides in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB281392.001		Alpha BHC	mg/kg	0.1	<0.1
		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
		Beta BHC	mg/kg	0.1	<0.1
		Lindane (gamma BHC)	mg/kg	0.1	<0.1
		Delta BHC	mg/kg	0.1	<0.1
		Heptachlor	mg/kg	0.1	<0.1
		Aldrin	mg/kg	0.1	<0.1
		Isodrin	mg/kg	0.1	<0.1
		Heptachlor epoxide	mg/kg	0.1	<0.1
		Gamma Chlordane	mg/kg	0.1	<0.1
		Alpha Chlordane	mg/kg	0.1	<0.1
		Alpha Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDE	mg/kg	0.1	<0.1
		Dieldrin	mg/kg	0.2	<0.2
		Endrin	mg/kg	0.2	<0.2
		Beta Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDD	mg/kg	0.1	<0.1
		Endrin aldehyde	mg/kg	0.1	<0.1
		Endosulfan sulphate	mg/kg	0.1	<0.1
		p,p'-DDT	mg/kg	0.1	<0.1
		Endrin ketone	mg/kg	0.1	<0.1
		Methoxychlor	mg/kg	0.1	<0.1
		Mirex	mg/kg	0.1	<0.1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	87

OP Pesticides in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB281392.001		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2
		Bromophos Ethyl	mg/kg	0.2	<0.2
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5
		Dichlorvos	mg/kg	0.5	<0.5
		Dimethoate	mg/kg	0.5	<0.5
		Ethion	mg/kg	0.2	<0.2
		Fenitrothion	mg/kg	0.2	<0.2
		Malathion	mg/kg	0.2	<0.2
		Methidathion	mg/kg	0.5	<0.5
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2
	Surrogates	2-fluorobiphenyl (Surrogate)	%	-	95
		d14-p-terphenyl (Surrogate)	%	-	103

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB281392.001	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

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.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

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

Sample Number		Parameter	Units	LOR	Result
LB281392.001		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)	%	-	97
		2-fluorobiphenyl (Surrogate)	%	-	95
		d14-p-terphenyl (Surrogate)	%	-	103

PAH (Polynuclear Aromatic Hydrocarbons) in Water

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

Sample Number		Parameter	Units	LOR	Result
LB281260.001		Naphthalene	µg/L	0.1	<0.1
		2-methylnaphthalene	µg/L	0.1	<0.1
		1-methylnaphthalene	µg/L	0.1	<0.1
		Acenaphthylene	µg/L	0.1	<0.1
		Acenaphthene	µg/L	0.1	<0.1
		Fluorene	µg/L	0.1	<0.1
		Phenanthrene	µg/L	0.1	<0.1
		Anthracene	µg/L	0.1	<0.1
		Fluoranthene	µg/L	0.1	<0.1
		Pyrene	µg/L	0.1	<0.1
		Benzo(a)anthracene	µg/L	0.1	<0.1
		Chrysene	µg/L	0.1	<0.1
		Benzo(a)pyrene	µg/L	0.1	<0.1
		Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1
		Dibenzo(ah)anthracene	µg/L	0.1	<0.1
		Benzo(ghi)perylene	µg/L	0.1	<0.1
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	50
		2-fluorobiphenyl (Surrogate)	%	-	54
		d14-p-terphenyl (Surrogate)	%	-	74

PCBs in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB281392.001		Arochlor 1016	mg/kg	0.2	<0.2
		Arochlor 1221	mg/kg	0.2	<0.2
		Arochlor 1232	mg/kg	0.2	<0.2
		Arochlor 1242	mg/kg	0.2	<0.2
		Arochlor 1248	mg/kg	0.2	<0.2
		Arochlor 1254	mg/kg	0.2	<0.2
		Arochlor 1260	mg/kg	0.2	<0.2
		Arochlor 1262	mg/kg	0.2	<0.2
		Arochlor 1268	mg/kg	0.2	<0.2
		Total PCBs (Arochlors)	mg/kg	1	<1
	Surrogates	TCMX (Surrogate)	%	-	87

Total Cyanide in soil by Discrete Analyser

Method: ME-(AU)-[ENV]AN077/AN287

Sample Number	Parameter	Units	LOR	Result
LB281641.001	Total Cyanide	mg/kg	0.5	<0.5

Total Phenolics in Soil

Method: ME-(AU)-[ENV]AN295

Sample Number	Parameter	Units	LOR	Result
LB281632.001	Total Phenols	mg/kg	0.5	<0.5

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

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

Sample Number	Parameter	Units	LOR

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.

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

Sample Number	Parameter	Units	LOR	Result
LB281395.001	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

Trace Metals (Dissolved) in Water by ICPMS — Method: ME-(AU)-[ENV]AN318

Sample Number	Parameter	Units	LOR	Result
LB281319.001	Arsenic	µg/L	1	<1
	Cadmium	µg/L	0.1	<0.1
	Chromium	µg/L	1	<1
	Copper	µg/L	1	<1
	Lead	µg/L	1	<1
	Nickel	µg/L	1	<1
	Zinc	µg/L	5	<5

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

Sample Number	Parameter	Units	LOR	Result
LB281392.001	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

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

Sample Number	Parameter	Units	LOR	Result
LB281260.001	TRH C10-C14	µg/L	50	<50
	TRH C15-C28	µg/L	200	<200
	TRH C29-C36	µg/L	200	<200
	TRH C37-C40	µg/L	200	<200

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

Sample Number		Parameter	Units	LOR	Result
LB281393.001	Fumigants	2,2-dichloropropane	mg/kg	0.1	<0.1
		1,2-dichloropropane	mg/kg	0.1	<0.1
		cis-1,3-dichloropropene	mg/kg	0.1	<0.1
		trans-1,3-dichloropropene	mg/kg	0.1	<0.1
		1,2-dibromoethane (EDB)	mg/kg	0.1	<0.1
	Halogenated Aliphatics	Dichlorodifluoromethane (CFC-12)	mg/kg	1	<1
		Chloromethane	mg/kg	1	<1
		Vinyl chloride (Chloroethene)	mg/kg	0.1	<0.1
		Bromomethane	mg/kg	1	<1
		Chloroethane	mg/kg	1	<1
		Trichlorofluoromethane	mg/kg	1	<1
		1,1-dichloroethene	mg/kg	0.1	<0.1
		Iodomethane	mg/kg	5	<5
		Dichloromethane (Methylene chloride)	mg/kg	0.5	<0.5
		Allyl chloride	mg/kg	0.1	<0.1
		trans-1,2-dichloroethene	mg/kg	0.1	<0.1
		1,1-dichloroethane	mg/kg	0.1	<0.1
		cis-1,2-dichloroethene	mg/kg	0.1	<0.1
		Bromochloromethane	mg/kg	0.1	<0.1
		1,2-dichloroethane	mg/kg	0.1	<0.1
		1,1,1-trichloroethane	mg/kg	0.1	<0.1
		1,1-dichloropropene	mg/kg	0.1	<0.1
		Carbon tetrachloride	mg/kg	0.1	<0.1
		Dibromomethane	mg/kg	0.1	<0.1
		Trichloroethene (Trichloroethylene,TCE)	mg/kg	0.1	<0.1
		1,1,2-trichloroethane	mg/kg	0.1	<0.1
		1,3-dichloropropane	mg/kg	0.1	<0.1
		Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	<0.1

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.

VOC's in Soil (continued)

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

Sample Number		Parameter	Units	LOR	Result
LB281393.001	Halogenated Aliphatics	1,1,1,2-tetrachloroethane	mg/kg	0.1	<0.1
		1,1,2,2-tetrachloroethane	mg/kg	0.1	<0.1
		1,2,3-trichloropropane	mg/kg	0.1	<0.1
		trans-1,4-dichloro-2-butene	mg/kg	1	<1
		1,2-dibromo-3-chloropropane	mg/kg	0.1	<0.1
		Hexachlorobutadiene	mg/kg	0.1	<0.1
	Halogenated Aromatics	Chlorobenzene	mg/kg	0.1	<0.1
		Bromobenzene	mg/kg	0.1	<0.1
		2-chlorotoluene	mg/kg	0.1	<0.1
		4-chlorotoluene	mg/kg	0.1	<0.1
		1,3-dichlorobenzene	mg/kg	0.1	<0.1
		1,4-dichlorobenzene	mg/kg	0.1	<0.1
		1,2-dichlorobenzene	mg/kg	0.1	<0.1
		1,2,4-trichlorobenzene	mg/kg	0.1	<0.1
		1,2,3-trichlorobenzene	mg/kg	0.1	<0.1
	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
		Styrene (Vinyl benzene)	mg/kg	0.1	<0.1
		o-xylene	mg/kg	0.1	<0.1
		Isopropylbenzene (Cumene)	mg/kg	0.1	<0.1
		n-propylbenzene	mg/kg	0.1	<0.1
		1,3,5-trimethylbenzene	mg/kg	0.1	<0.1
		tert-butylbenzene	mg/kg	0.1	<0.1
		1,2,4-trimethylbenzene	mg/kg	0.1	<0.1
		sec-butylbenzene	mg/kg	0.1	<0.1
		p-isopropyltoluene	mg/kg	0.1	<0.1
		n-butylbenzene	mg/kg	0.1	<0.1
	Nitrogenous Compounds	Acrylonitrile	mg/kg	0.1	<0.1
		2-nitropropane	mg/kg	10	<10
	Oxygenated Compounds	Acetone (2-propanone)	mg/kg	10	<10
		MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	<0.1
		Vinyl acetate*	mg/kg	10	<10
		MIBK (4-methyl-2-pentanone)	mg/kg	1	<1
		2-hexanone (MBK)	mg/kg	5	<5
	Polycyclic VOCs	Naphthalene (VOC)*	mg/kg	0.1	<0.1
	Sulphonated	Carbon disulfide	mg/kg	0.5	<0.5
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	87
		d8-toluene (Surrogate)	%	-	81
		Bromofluorobenzene (Surrogate)	%	-	94
	Totals	Total Other Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	<1.8
		Total Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	<1.8
		Total BTEX*	mg/kg	0.6	<0.6
	Trihalomethanes	Chloroform (THM)	mg/kg	0.1	<0.1
		Bromodichloromethane (THM)	mg/kg	0.1	<0.1
		Dibromochloromethane (THM)	mg/kg	0.1	<0.1
		Bromoform (THM)	mg/kg	0.1	<0.1

VOCs in Water

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

Sample Number		Parameter	Units	LOR	Result
LB281645.001	Monocyclic Aromatic Hydrocarbons	Benzene	µg/L	0.5	<0.5
		Toluene	µg/L	0.5	<0.5
		Ethylbenzene	µg/L	0.5	<0.5
		m/p-xylene	µg/L	1	<1
		o-xylene	µg/L	0.5	<0.5
	Polycyclic VOCs	Naphthalene (VOC)*	µg/L	0.5	<0.5
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	102
		d8-toluene (Surrogate)	%	-	96
		Bromofluorobenzene (Surrogate)	%	-	105

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.

Volatile Petroleum Hydrocarbons in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB281393.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	87

Volatile Petroleum Hydrocarbons in Water

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

Sample Number		Parameter	Units	LOR	Result
LB281645.001		TRH C6-C9	µg/L	40	<40
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	102
		d8-toluene (Surrogate)	%	-	96
		Bromofluorobenzene (Surrogate)	%	-	105

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 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 x 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 identifer 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 (dissolved) in Water — Method: ME-(AU)-[ENV]AN311(Perth)/AN312

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248519.002	LB281263.014	Mercury	µg/L	0.0001	<0.0001	<0.0001	200	195
SE248520.008	LB281263.018	Mercury	µg/L	0.0001	<0.0001	<0.0001	200	0

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248448.017	LB281397.014	Mercury	mg/kg	0.05	<0.05	<0.05	200	0

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248448.017	LB281394.011	% Moisture	%w/w	1	9.3	8.5	41	9
SE248520.005	LB281394.022	% Moisture	%w/w	1	9.1	7.4	42	20
SE248520.006	LB281394.024	% Moisture	%w/w	1	<1.0	<1.0	200	0

OC Pesticides in Soil — Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248500.002	LB281392.014		Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
			Endrin	mg/kg	0.2	<0.2	<0.2	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
			Total OC VIC EPA	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.12	0.12	30	1
SE248520.003	LB281392.025		Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 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 x 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 identifer 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.

OC Pesticides in Soil (continued) — Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248520.003	LB281392.025		p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
			Endrin	mg/kg	0.2	<0.2	<0.2	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
			Total OC VIC EPA	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.12	0.13	30	4

OP Pesticides in Soil — Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248500.002	LB281392.014		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
			Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0
			Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
			Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
			Ethion	mg/kg	0.2	<0.2	<0.2	200	0
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
			Malathion	mg/kg	0.2	<0.2	<0.2	200	0
			Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0
			Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	200	0
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	1
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	1
SE248520.003	LB281392.025		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
			Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0
			Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
			Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
			Ethion	mg/kg	0.2	<0.2	<0.2	200	0
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
			Malathion	mg/kg	0.2	<0.2	<0.2	200	0
			Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0
			Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	200	0
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	2
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	1

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248500.002	LB281392.014		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	150	1
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	0.1	0.2	103	37
			Pyrene	mg/kg	0.1	0.1	0.2	102	36
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 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 x 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 identifer 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 %
SE248500.002	LB281392.014		Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	185	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	198	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	167	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	61	62 ②
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	1
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	1
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	1
SE248520.003	LB281392.025		Naphthalene	mg/kg	0.1	<0.1	<0.1	185	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	135	9
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	<0.2	<0.2	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	<0.2	<0.2	175	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	<0.3	<0.3	134	0
			Total PAH (18)	mg/kg	0.8	<0.8	<0.8	200	9
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	2
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	2
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	1

PCBs in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248520.003	LB281392.025		Arochlor 1016	mg/kg	0.2	<0.2	0	200	0
			Arochlor 1221	mg/kg	0.2	<0.2	0	200	0
			Arochlor 1232	mg/kg	0.2	<0.2	0	200	0
			Arochlor 1242	mg/kg	0.2	<0.2	0	200	0
			Arochlor 1248	mg/kg	0.2	<0.2	0	200	0
			Arochlor 1254	mg/kg	0.2	<0.2	0	200	0
			Arochlor 1260	mg/kg	0.2	<0.2	0	200	0
			Arochlor 1262	mg/kg	0.2	<0.2	0	200	0
			Arochlor 1268	mg/kg	0.2	<0.2	0	200	0
			Total PCBs (Arochlors)	mg/kg	1	<1	0	200	0
		Surrogates	TCMX (Surrogate)	mg/kg	-	0	0.1223	30	4

Total Cyanide in soil by Discrete Analyser

Method: ME-(AU)-[ENV]AN077/AN287

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248544.002	LB281641.017	Total Cyanide	mg/kg	0.5	24	20	32	19

Total Phenolics in Soil

Method: ME-(AU)-[ENV]AN295

Original	Duplicate	Parameter	Units	LOR

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 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 x 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 identifer 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.

Total Phenolics in Soil (continued)

Method: ME-(AU)-[ENV]AN295

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248436.002	LB281632.007	Total Phenols	mg/kg	0.5	<0.5	<0.5	200	0

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

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248448.017	LB281395.014	Arsenic, As	mg/kg	1	9	9	42	3
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	12	12	34	3
		Copper, Cu	mg/kg	0.5	17	16	33	7
		Nickel, Ni	mg/kg	0.5	3.5	3.6	44	2
		Lead, Pb	mg/kg	1	13	13	38	2
		Zinc, Zn	mg/kg	2	19	18	41	5

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248519.003	LB281319.014	Arsenic	µg/L	1	1	1	87	0
		Cadmium	µg/L	0.1	<0.1	<0.1	200	0
		Chromium	µg/L	1	1	1	101	3
		Copper	µg/L	1	<1	<1	169	0
		Lead	µg/L	1	<1	<1	200	0
		Nickel	µg/L	1	7	7	28	0
		Zinc	µg/L	5	14	14	51	2
SE248562.001	LB281319.018	Arsenic	µg/L	1	<1	<1	165	0
		Cadmium	µg/L	0.1	<0.1	<0.1	200	0
		Chromium	µg/L	1	1	1	100	2
		Copper	µg/L	1	2	2	81	2
		Lead	µg/L	1	<1	<1	200	0
		Nickel	µg/L	1	1	1	84	0
		Zinc	µg/L	5	<5	<5	200	0

TRH (Total Recoverable Hydrocarbons) in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248500.002	LB281392.014		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	135	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	TRH >C10-C16	mg/kg	25	<25	<25	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	200	0
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0
SE248520.003	LB281392.025		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	TRH >C10-C16	mg/kg	25	<25	<25	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	200	0
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0

TRH (Total Recoverable Hydrocarbons) in Water

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248418.001	LB281260.028		TRH C10-C14	µg/L	50	<0.05	<0.05	200	0
			TRH C15-C28	µg/L	200	<0.2	<0.2	200	0
			TRH C29-C36	µg/L	200	<0.2	<0.2	200	0
			TRH C37-C40	µg/L	200	<200	<200	200	0
			TRH C10-C40	µg/L	320	<0.32	<0.32	200	0
		TRH F Bands	TRH >C10-C16	µg/L	60	<0.06	<0.06	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 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 x 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 identifer 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.

TRH (Total Recoverable Hydrocarbons) in Water (continued)

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248418.001	LB281260.028	TRH F Bands	TRH >C10-C16 - Naphthalene (F2)	µg/L	60	<0.06	<0.06	200	0
			TRH >C16-C34 (F3)	µg/L	500	<0.5	<0.5	200	0
			TRH >C34-C40 (F4)	µg/L	500	<0.5	<0.5	200	0
SE248519.004	LB281260.029		TRH C10-C14	µg/L	50	<0.05	<0.05	200	0
			TRH C15-C28	µg/L	200	<0.2	<0.2	200	0
			TRH C29-C36	µg/L	200	<0.2	<0.2	200	0
			TRH C37-C40	µg/L	200	<200	<200	200	0
			TRH C10-C40	µg/L	320	<0.32	<0.32	200	0
		TRH F Bands	TRH >C10-C16	µg/L	60	<0.06	<0.06	200	0
			TRH >C10-C16 - Naphthalene (F2)	µg/L	60	<0.06	<0.06	200	0
			TRH >C16-C34 (F3)	µg/L	500	<0.5	<0.5	200	0
			TRH >C34-C40 (F4)	µg/L	500	<0.5	<0.5	200	0

VOC's in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248448.017	LB281393.034	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	8.0	50	6
			d8-toluene (Surrogate)	mg/kg	-	7.8	8.3	50	6
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.7	8.8	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
SE248520.003	LB281393.038	Fumigants	2,2-dichloropropane	mg/kg	0.1	<0.1	0	200	0
			1,2-dichloropropane	mg/kg	0.1	<0.1	0	200	0
			cis-1,3-dichloropropene	mg/kg	0.1	<0.1	0	200	0
			trans-1,3-dichloropropene	mg/kg	0.1	<0.1	0.0006044402	200	0
			1,2-dibromoethane (EDB)	mg/kg	0.1	<0.1	0	200	0
		Halogenated Aliphatics	Dichlorodifluoromethane (CFC-12)	mg/kg	1	<1	0.0003560996	200	0
			Chloromethane	mg/kg	1	<1	0	200	0
			Vinyl chloride (Chloroethene)	mg/kg	0.1	<0.1	0.0006938182	200	0
			Bromomethane	mg/kg	1	<1	0	200	0
			Chloroethane	mg/kg	1	<1	0	200	0
			Trichlorofluoromethane	mg/kg	1	<1	0.0012799566	200	0
			1,1-dichloroethene	mg/kg	0.1	<0.1	0	200	0
			Iodomethane	mg/kg	5	<5	0	200	0
			Dichloromethane (Methylene chloride)	mg/kg	0.5	<0.5	0	200	0
			Allyl chloride	mg/kg	0.1	<0.1	0	200	0
			trans-1,2-dichloroethene	mg/kg	0.1	<0.1	0	200	0
			1,1-dichloroethane	mg/kg	0.1	<0.1	0	200	0
			cis-1,2-dichloroethene	mg/kg	0.1	<0.1	0	200	0
			Bromochloromethane	mg/kg	0.1	<0.1	0.0037407517	200	0
			1,2-dichloroethane	mg/kg	0.1	<0.1	0.0013438784	200	0
			1,1,1-trichloroethane	mg/kg	0.1	<0.1	0	200	0
			1,1-dichloropropene	mg/kg	0.1	<0.1	0	200	0
			Carbon tetrachloride	mg/kg	0.1	<0.1	0	200	0
			Dibromomethane	mg/kg	0.1	<0.1	0.0004764415	200	0
			Trichloroethene (Trichloroethylene,TCE)	mg/kg	0.1	<0.1	0	200	0
			1,1,2-trichloroethane	mg/kg	0.1	<0.1	0	200	0
			1,3-dichloropropane	mg/kg	0.1	<0.1	0	200	0
			Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	<0.1	0	200	0
			1,1,1,2-tetrachloroethane	mg/kg	0.1	<0.1	0	200	0
			1,1,2,2-tetrachloroethane	mg/kg	0.1	<0.1	0	200	0
			1,2,3-trichloropropane	mg/kg	0.1	<0.1	0	200	0
			trans-1,4-dichloro-2-butene	mg/kg	1	<1	0	200	0
			1,2-dibromo-3-chloropropane	mg/kg	0.1	<0.1	0	200	0
			Hexachlorobutadiene	mg/kg	0.1	<0.1	0.0005532269	200	0
		Halogenated	Chlorobenzene	mg/kg	0.1	<0.1	0.0010806479	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 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 x 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 identifer 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)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248520.003	LB281393.038	Halogenated Aromatics	Bromobenzene	mg/kg	0.1	<0.1	0	200	0
			2-chlorotoluene	mg/kg	0.1	<0.1	0.0010185295	200	0
			4-chlorotoluene	mg/kg	0.1	<0.1	0	200	0
			1,3-dichlorobenzene	mg/kg	0.1	<0.1	0.0027700909	200	0
			1,4-dichlorobenzene	mg/kg	0.1	<0.1	0.0028340129	200	0
			1,2-dichlorobenzene	mg/kg	0.1	<0.1	0.0005202981	200	0
			1,2,4-trichlorobenzene	mg/kg	0.1	<0.1	0.0003351943	200	0
			1,2,3-trichlorobenzene	mg/kg	0.1	<0.1	0.0004681287	200	0
		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
			Styrene (Vinyl benzene)	mg/kg	0.1	<0.1	0	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
			Isopropylbenzene (Cumene)	mg/kg	0.1	<0.1	0	200	0
			n-propylbenzene	mg/kg	0.1	<0.1	0.0006271325	200	0
			1,3,5-trimethylbenzene	mg/kg	0.1	<0.1	0.0012020136	200	0
			tert-butylbenzene	mg/kg	0.1	<0.1	0.0002580393	200	0
			1,2,4-trimethylbenzene	mg/kg	0.1	<0.1	0.0014774246	200	0
			sec-butylbenzene	mg/kg	0.1	<0.1	0	200	0
			p-isopropyltoluene	mg/kg	0.1	<0.1	0.0015173423	200	0
			n-butylbenzene	mg/kg	0.1	<0.1	0.0003848723	200	0
		Nitrogenous Compounds	Acrylonitrile	mg/kg	0.1	<0.1	0	200	0
			2-nitropropane	mg/kg	10	<10	0	200	0
		Oxygenated Compounds	Acetone (2-propanone)	mg/kg	10	<10	0	200	0
			MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	<0.1	0	200	0
			Vinyl acetate*	mg/kg	10	<10	0	200	0
			MIBK (4-methyl-2-pentanone)	mg/kg	1	<1	0.0026300573	200	0
			2-hexanone (MBK)	mg/kg	5	<5	0	200	0
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	200	0
		Sulphonated	Carbon disulfide	mg/kg	0.5	<0.5	0	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.6	7.5	50	1
			d8-toluene (Surrogate)	mg/kg	-	6.8	6.4	50	5
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.7	7.5	50	2
		Totals	Total Other Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	<1.8	0.0103473072	200	0
			Total Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	<1.8	0.0115943525	200	0
			Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
			Total Volatile Chlorinated Hydrocarbons*	mg/kg	3	<3.0	0.0102379974	200	0
			Total VOC*	mg/kg	24	<24	0.0364746734	200	0
			Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0
		Trihalomethanes	Chloroform (THM)	mg/kg	0.1	<0.1	0.0042332754	200	0
			Bromodichloromethane (THM)	mg/kg	0.1	<0.1	0	200	0
			Dibromochloromethane (THM)	mg/kg	0.1	<0.1	0	200	0
			Bromoform (THM)	mg/kg	0.1	<0.1	0.0002196119	200	0

VOCs in Water Method: ME-(AU)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248514.001	LB281645.026	Monocyclic Aromatic	Benzene	µg/L	0.5	<0.5	<0.5	200	0
			Toluene	µg/L	0.5	0.9	1.0	83	4
			Ethylbenzene	µg/L	0.5	<0.5	<0.5	200	0
			m/p-xylene	µg/L	1	<1	<1	200	0
			o-xylene	µg/L	0.5	<0.5	<0.5	200	0
		Polycyclic	Naphthalene (VOC)*	µg/L	0.5	<0.5	<0.5	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	10.7	9.6	30	11
			d8-toluene (Surrogate)	µg/L	-	9.9	9.5	30	4
			Bromofluorobenzene (Surrogate)	µg/L	-	10.9	10.3	30	6
		Totals	Total BTEX	µg/L	3	<3	<3	200	0
SE248514.002	LB281645.027	Monocyclic Aromatic	Benzene	µg/L	0.5	<0.5	<0.5	200	0
			Toluene	µg/L	0.5	6.1	6.1	38	0
			Ethylbenzene	µg/L	0.5	<0.5	<0.5	200	0
			m/p-xylene	µg/L	1	<1	<1	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 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 x 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 identifer 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.

VOCs in Water (continued) — Method: ME-(AU)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248514.002	LB281645.027	Monocyclic	o-xylene	µg/L	0.5	<0.5	<0.5	200	0
		Polycyclic	Naphthalene (VOC)*	µg/L	0.5	<0.5	<0.5	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	10.5	9.7	30	8
			d8-toluene (Surrogate)	µg/L	-	9.8	9.6	30	2
			Bromofluorobenzene (Surrogate)	µg/L	-	10.7	10.5	30	2
		Totals	Total BTEX	µg/L	3	6	6	79	0

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248448.017	LB281393.034		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	8.0	50	6
			d8-toluene (Surrogate)	mg/kg	-	7.8	8.3	50	6
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.7	8.8	50	2
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0
SE248520.003	LB281393.035		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	7.5	50	1
			d8-toluene (Surrogate)	mg/kg	-	6.8	6.4	50	5
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.7	7.5	50	2
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248514.001	LB281645.026		TRH C6-C10	µg/L	50	<50	<50	189	0
			TRH C6-C9	µg/L	40	<40	<40	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	10.7	9.6	30	11
			d8-toluene (Surrogate)	µg/L	-	9.9	9.5	30	4
			Bromofluorobenzene (Surrogate)	µg/L	-	10.9	10.3	30	6
		VPH F Bands	Benzene (F0)	µg/L	0.5	<0.5	<0.5	200	0
			TRH C6-C10 minus BTEX (F1)	µg/L	50	<50	<50	194	0
SE248514.002	LB281645.027		TRH C6-C10	µg/L	50	79	130	79	46
			TRH C6-C9	µg/L	40	56	86	86	42
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	10.5	9.7	30	8
			d8-toluene (Surrogate)	µg/L	-	9.8	9.6	30	2
			Bromofluorobenzene (Surrogate)	µg/L	-	10.7	10.5	30	2
		VPH F Bands	Benzene (F0)	µg/L	0.5	<0.5	<0.5	200	0
			TRH C6-C10 minus BTEX (F1)	µg/L	50	73	120	82	49

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 %
LB281397.002		Mercury	mg/kg	0.05	0.23	0.2	80 - 120	114

OC Pesticides in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB281392.002		Delta BHC	mg/kg	0.1	0.1	0.2	60 - 140	74
		Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	76
		Aldrin	mg/kg	0.1	0.1	0.2	60 - 140	74
		Dieldrin	mg/kg	0.2	<0.2	0.2	60 - 140	74
		Endrin	mg/kg	0.2	<0.2	0.2	60 - 140	72
		p,p'-DDT	mg/kg	0.1	0.1	0.2	60 - 140	67
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.12	0.15	40 - 130	83

OP Pesticides in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB281392.002		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.7	2	60 - 140	83
		Diazinon (Dimpylate)	mg/kg	0.5	1.6	2	60 - 140	82
		Dichlorvos	mg/kg	0.5	1.4	2	60 - 140	71
		Ethion	mg/kg	0.2	1.7	2	60 - 140	83
	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	90
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	101

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB281392.002		Naphthalene	mg/kg	0.1	3.8	4	60 - 140	94
		Acenaphthylene	mg/kg	0.1	3.8	4	60 - 140	94
		Acenaphthene	mg/kg	0.1	4.1	4	60 - 140	102
		Phenanthrene	mg/kg	0.1	4.0	4	60 - 140	100
		Anthracene	mg/kg	0.1	3.9	4	60 - 140	97
		Fluoranthene	mg/kg	0.1	3.7	4	60 - 140	92
		Pyrene	mg/kg	0.1	4.3	4	60 - 140	107
		Benzo(a)pyrene	mg/kg	0.1	3.6	4	60 - 140	89
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	92
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	90
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	101

PAH (Polynuclear Aromatic Hydrocarbons) in Water

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB281260.002		Naphthalene	µg/L	0.1	37	40	60 - 140	94
		Acenaphthylene	µg/L	0.1	46	40	60 - 140	115
		Acenaphthene	µg/L	0.1	43	40	60 - 140	106
		Phenanthrene	µg/L	0.1	46	40	60 - 140	116
		Anthracene	µg/L	0.1	49	40	60 - 140	122
		Fluoranthene	µg/L	0.1	50	40	60 - 140	125
		Pyrene	µg/L	0.1	49	40	60 - 140	123
		Benzo(a)pyrene	µg/L	0.1	49	40	60 - 140	122
	Surrogates	d5-nitrobenzene (Surrogate)	µg/L	-	0.3	0.5	40 - 130	52
		2-fluorobiphenyl (Surrogate)	µg/L	-	0.3	0.5	40 - 130	58
		d14-p-terphenyl (Surrogate)	µg/L	-	0.4	0.5	40 - 130	82

PCBs in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB281392.002		Arochlor 1260	mg/kg	0.2	0.3	0.4	60 - 140	79

Total Cyanide in soil by Discrete Analyser

Method: ME-(AU)-[ENV]AN077/AN287

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB281641.002		Total Cyanide	mg/kg	0.5	<0.5	0.25	70 - 130	105

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.

Total Phenolics in Soil

Method: ME-(AU)-[ENV]AN295

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB281632.002		Total Phenols	mg/kg	0.5	20	20	80 - 120	100

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 %
LB281395.002		Arsenic, As	mg/kg	1	350	318.22	80 - 120	110
		Cadmium, Cd	mg/kg	0.3	3.6	4.81	70 - 130	75
		Chromium, Cr	mg/kg	0.5	41	38.31	80 - 120	106
		Copper, Cu	mg/kg	0.5	330	290	80 - 120	114
		Nickel, Ni	mg/kg	0.5	200	187	80 - 120	105
		Lead, Pb	mg/kg	1	96	89.9	80 - 120	107
		Zinc, Zn	mg/kg	2	290	273	80 - 120	107

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB281319.002		Arsenic	µg/L	1	22	20	80 - 120	109
		Cadmium	µg/L	0.1	21	20	80 - 120	106
		Chromium	µg/L	1	22	20	80 - 120	108
		Copper	µg/L	1	21	20	80 - 120	105
		Lead	µg/L	1	20	20	80 - 120	100
		Nickel	µg/L	1	22	20	80 - 120	110
		Zinc	µg/L	5	21	20	80 - 120	105

TRH (Total Recoverable Hydrocarbons) in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB281392.002		TRH C10-C14	mg/kg	20	38	40	60 - 140	96
		TRH C15-C28	mg/kg	45	<45	40	60 - 140	82
		TRH C29-C36	mg/kg	45	<45	40	60 - 140	87
	TRH F Bands	TRH >C10-C16	mg/kg	25	38	40	60 - 140	95
		TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	83
		TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	86

TRH (Total Recoverable Hydrocarbons) in Water

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB281260.002		TRH C10-C14	µg/L	50	980	1200	60 - 140	82
		TRH C15-C28	µg/L	200	1200	1200	60 - 140	97
		TRH C29-C36	µg/L	200	1200	1200	60 - 140	97
	TRH F Bands	TRH >C10-C16	µg/L	60	1000	1200	60 - 140	87
		TRH >C16-C34 (F3)	µg/L	500	1200	1200	60 - 140	99
		TRH >C34-C40 (F4)	µg/L	500	600	600	60 - 140	100

VOC's in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB281393.002	Halogenated Aliphatics	1,1-dichloroethene	mg/kg	0.1	4.5	5	60 - 140	90
		1,2-dichloroethane	mg/kg	0.1	4.9	5	60 - 140	99
		Trichloroethene (Trichloroethylene,TCE)	mg/kg	0.1	5.0	5	60 - 140	101
	Halogenated	Chlorobenzene	mg/kg	0.1	5.6	5	60 - 140	113
	Monocyclic Aromatic	Benzene	mg/kg	0.1	4.3	5	60 - 140	87
		Toluene	mg/kg	0.1	4.5	5	60 - 140	90
		Ethylbenzene	mg/kg	0.1	4.3	5	60 - 140	87
		m/p-xylene	mg/kg	0.2	8.5	10	60 - 140	85
		o-xylene	mg/kg	0.1	4.3	5	60 - 140	86
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.9	10	70 - 130	89
		d8-toluene (Surrogate)	mg/kg	-	7.1	10	70 - 130	71
		Bromofluorobenzene (Surrogate)	mg/kg	-	9.1	10	70 - 130	91
	Trihalomethan	Chloroform (THM)	mg/kg	0.1	5.4	5	60 - 140	108

VOCs in Water

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB281645.002	Monocyclic Aromatic	Benzene	µg/L	0.5	45	45.45	60 - 140	99
		Toluene	µg/L	0.5	46	45.45	60 - 140	101
		Ethylbenzene	µg/L	0.5	46	45.45	60 - 140	102
		m/p-xylene	µg/L	1	94	90.9	60 - 140	103

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.

VOCs in Water (continued)   Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB281645.002	Monocyclic	o-xylene	µg/L	0.5	47	45.45	60 - 140	103
	Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	10.0	10	60 - 140	100
		d8-toluene (Surrogate)	µg/L	-	11.1	10	70 - 130	111
		Bromofluorobenzene (Surrogate)	µg/L	-	10.0	10	70 - 130	100

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB281393.002		TRH C6-C10	mg/kg	25	69	92.5	60 - 140	74
		TRH C6-C9	mg/kg	20	59	80	60 - 140	74
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.9	10	70 - 130	89
		Bromofluorobenzene (Surrogate)	mg/kg	-	9.1	10	70 - 130	91
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	43	62.5	60 - 140	68

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB281645.002		TRH C6-C10	µg/L	50	800	946.63	60 - 140	85
		TRH C6-C9	µg/L	40	700	818.71	60 - 140	85
	Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	10.0	10	60 - 140	100
		d8-toluene (Surrogate)	µg/L	-	11.1	10	70 - 130	111
		Bromofluorobenzene (Surrogate)	µg/L	-	10.0	10	70 - 130	100
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	µg/L	50	530	639.67	60 - 140	82

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 identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Mercury (dissolved) in Water — Method: ME-(AU)-[ENV]AN311(Perth)/AN312

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE248497.027	LB281263.004		Mercury	mg/L	0.0001	0.0018	<0.0001	0.008	90

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE248444.031	LB281397.004		Mercury	mg/kg	0.05	0.24	<0.05	0.2	108

OC Pesticides in Soil — Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE248444.031	LB281392.004		Alpha BHC	mg/kg	0.1	<0.1	<0.1	-	-
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	-	-
			Beta BHC	mg/kg	0.1	<0.1	<0.1	-	-
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	-	-
			Delta BHC	mg/kg	0.1	0.2	<0.1	0.2	78
			Heptachlor	mg/kg	0.1	0.2	<0.1	0.2	83
			Aldrin	mg/kg	0.1	0.2	<0.1	0.2	81
			Isodrin	mg/kg	0.1	<0.1	<0.1	-	-
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	-	-
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
			o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	-	-
			Dieldrin	mg/kg	0.2	<0.2	<0.2	0.2	80
			Endrin	mg/kg	0.2	<0.2	<0.2	0.2	78
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	-	-
			Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	-	-
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	-	-
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDT	mg/kg	0.1	0.1	<0.1	0.2	70
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	-	-
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	-	-
			Mirex	mg/kg	0.1	<0.1	<0.1	-	-
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	-	-
			Total CLP OC Pesticides	mg/kg	1	<1	<1	-	-
			Total OC VIC EPA	mg/kg	1	<1	<1	-	-
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.13	0.14	-	89

OP Pesticides in Soil — Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE248444.031	LB281392.004		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	-	-
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	-	-
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.7	<0.2	2	85
			Diazinon (Dimpylate)	mg/kg	0.5	1.7	<0.5	2	85
			Dichlorvos	mg/kg	0.5	1.5	<0.5	2	76
			Dimethoate	mg/kg	0.5	<0.5	<0.5	-	-
			Ethion	mg/kg	0.2	1.8	<0.2	2	89
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	-	-
			Malathion	mg/kg	0.2	<0.2	<0.2	-	-
			Methidathion	mg/kg	0.5	<0.5	<0.5	-	-
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	-	-
			Total OP Pesticides*	mg/kg	1.7	6.7	<1.7	-	-
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	-	88
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	96

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

QC Sample	Sample Number	Parameter	Units	LOR

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 identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE248444.031	LB281392.004		Naphthalene	mg/kg	0.1	3.6	<0.1	4	90
			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	3.6	<0.1	4	90
			Acenaphthene	mg/kg	0.1	3.9	<0.1	4	97
			Fluorene	mg/kg	0.1	<0.1	<0.1	-	-
			Phenanthrene	mg/kg	0.1	3.8	<0.1	4	96
			Anthracene	mg/kg	0.1	3.7	<0.1	4	91
			Fluoranthene	mg/kg	0.1	3.5	<0.1	4	89
			Pyrene	mg/kg	0.1	3.9	<0.1	4	98
			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	3.4	<0.1	4	86
			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	3.4	<0.2	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	3.5	<0.2	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	3.6	<0.3	-	-
			Total PAH (18)	mg/kg	0.8	29	<0.8	-	-
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	-	91
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	-	88
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	96

Total Phenolics in Soil

Method: ME-(AU)-[ENV]AN295

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE248373.021	LB281632.004	Total Phenols	mg/kg	0.5	22	0.5	20	107
SE248436.001	LB281632.011	Total Phenols	mg/kg	0.5	21	<0.5	20	105

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%
SE248444.031	LB281395.004	Arsenic, As	mg/kg	1	46	3	50	87
		Cadmium, Cd	mg/kg	0.3	44	<0.3	50	88
		Chromium, Cr	mg/kg	0.5	57	11	50	92
		Copper, Cu	mg/kg	0.5	57	12	50	91
		Nickel, Ni	mg/kg	0.5	48	3.4	50	89
		Lead, Pb	mg/kg	1	51	10	50	83
		Zinc, Zn	mg/kg	2	59	13	50	93

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE248497.027	LB281319.004	Arsenic	μg/L	1	22	<1	20	109
		Cadmium	μg/L	0.1	21	<0.1	20	106
		Chromium	μg/L	1	22	<1	20	108
		Copper	μg/L	1	21	<1	20	105
		Lead	μg/L	1	20	<1	20	101
		Nickel	μg/L	1	21	<1	20	107
		Zinc	μg/L	5	23	<5	20	96

TRH (Total Recoverable Hydrocarbons) in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE248444.031	LB281392.004		TRH C10-C14	mg/kg	20	42	<20	40	105
			TRH C15-C28	mg/kg	45	<45	<45	40	100
			TRH C29-C36	mg/kg	45	55	<45	40	109
			TRH C37-C40	mg/kg	100	<100	<100	-	-
			TRH C10-C36 Total	mg/kg	110	<110	<110	-	-
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	-	-
		TRH F	TRH >C10-C16	mg/kg	25	41	<25	40	103
		Bands	TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	41	<25	-	-

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 identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

TRH (Total Recoverable Hydrocarbons) in Soil (continued)

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE248444.031	LB281392.004	TRH F	TRH >C16-C34 (F3)	mg/kg	90	<90	<90	40	111
		Bands	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%
SE248444.031	LB281393.004	Monocyclic	Benzene	mg/kg	0.1	4.2	<0.1	5	83
		Aromatic	Toluene	mg/kg	0.1	4.4	<0.1	5	87
			Ethylbenzene	mg/kg	0.1	4.5	<0.1	5	90
			m/p-xylene	mg/kg	0.2	9.1	<0.2	10	91
			o-xylene	mg/kg	0.1	4.6	<0.1	5	92
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.9	7.8	10	79
			d8-toluene (Surrogate)	mg/kg	-	8.0	8.1	10	80
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.4	8.9	10	84
		Totals	Total BTEX*	mg/kg	0.6	27	<0.6	-	-
			Total Xylenes*	mg/kg	0.3	14	<0.3	-	-

VOCs in Water

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE248508.001	LB281645.028	Monocyclic	Benzene	µg/L	0.5	46	0	45.45	101
		Aromatic	Toluene	µg/L	0.5	45	0.00255782834	45.45	100
			Ethylbenzene	µg/L	0.5	47	0.00245693472	45.45	104
			m/p-xylene	µg/L	1	92	0.00629256885	90.9	102
			o-xylene	µg/L	0.5	47	0.00828518845	45.45	102
		Polycyclic	Naphthalene (VOC)*	µg/L	0.5	47	0.01167884979	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	9.3	10.75113387777	-	93
			d8-toluene (Surrogate)	µg/L	-	11.0	9.75816417905	-	110
			Bromofluorobenzene (Surrogate)	µg/L	-	9.5	11.15965161397	-	95
		Totals	Total BTEX	µg/L	3	280	0	-	-

Volatile Petroleum Hydrocarbons in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE248444.031	LB281393.005		TRH C6-C10	mg/kg	25	84	<25	92.5	90
			TRH C6-C9	mg/kg	20	74	<20	80	93
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.9	7.8	10	79
			d8-toluene (Surrogate)	mg/kg	-	8.0	8.1	10	80
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.4	8.9	-	84
		VPH F	Benzene (F0)	mg/kg	0.1	4.2	<0.1	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	57	<25	62.5	91

Volatile Petroleum Hydrocarbons in Water

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE248508.001	LB281645.028		TRH C6-C10	µg/L	50	1000	0	946.63	105
			TRH C6-C9	µg/L	40	860	0	818.71	105
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	9.3	10.75113387777	-	93
			d8-toluene (Surrogate)	µg/L	-	11.0	9.75816417905	-	110
			Bromofluorobenzene (Surrogate)	µg/L	-	9.5	11.15965161397	-	95
		VPH F	Benzene (F0)	µg/L	0.5		0	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	µg/L	50	720	0	639.67	112

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 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 x 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 identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

QC Sample	Sample Number	Parameter	Units	LOR

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.

STATEMENT OF QA/QC PERFORMANCE

SE248520 R1

CLIENT DETAILS

Contact	Sergio Raposeira
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Project	**E26047 19 Hope St Melrose Park**
Order Number	**E26047**
Samples	8

LABORATORY DETAILS

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SGS Reference	**SE248520 R1**
Date Received	31 May 2023
Date Reported	16 Jun 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	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	1 item

SAMPLE SUMMARY

Sample counts by matrix	7 Soil, 1 Water	Type of documentation received	COC
Date documentation received	1/6/2023@3:07pm	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	17.2°C
Sample container provider	SGS	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.

Fibre Identification in soil

Method: ME-(AU)-[ENV]AS4964/AN602

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HA4_0.2-0.3	SE248520.001	LB281962	31 May 2023	31 May 2023	30 May 2024	08 Jun 2023	30 May 2024	09 Jun 2023
HA1_0.2-0.3	SE248520.002	LB281962	31 May 2023	31 May 2023	30 May 2024	08 Jun 2023	30 May 2024	09 Jun 2023
HA2_0.2-0.3	SE248520.003	LB281962	31 May 2023	31 May 2023	30 May 2024	08 Jun 2023	30 May 2024	09 Jun 2023

Gravimetric Determination of Asbestos in Soil

Method: ME-(AU)-[ENV]AN605

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HA4_0.2-0.3	SE248520.001	LB281962	31 May 2023	31 May 2023	27 Nov 2023	08 Jun 2023	27 Nov 2023	09 Jun 2023
HA1_0.2-0.3	SE248520.002	LB281962	31 May 2023	31 May 2023	27 Nov 2023	08 Jun 2023	27 Nov 2023	09 Jun 2023
HA2_0.2-0.3	SE248520.003	LB281962	31 May 2023	31 May 2023	27 Nov 2023	08 Jun 2023	27 Nov 2023	09 Jun 2023

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311(Perth)/AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QR1	SE248520.008	LB281263	31 May 2023	31 May 2023	28 Jun 2023	02 Jun 2023	28 Jun 2023	02 Jun 2023

Mercury in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HA4_0.2-0.3	SE248520.001	LB281397	31 May 2023	31 May 2023	28 Jun 2023	02 Jun 2023	28 Jun 2023	07 Jun 2023
HA1_0.2-0.3	SE248520.002	LB281397	31 May 2023	31 May 2023	28 Jun 2023	02 Jun 2023	28 Jun 2023	07 Jun 2023
HA2_0.2-0.3	SE248520.003	LB281397	31 May 2023	31 May 2023	28 Jun 2023	02 Jun 2023	28 Jun 2023	07 Jun 2023
QD1	SE248520.004	LB281397	31 May 2023	31 May 2023	28 Jun 2023	02 Jun 2023	28 Jun 2023	07 Jun 2023
QD2	SE248520.005	LB281397	31 May 2023	31 May 2023	28 Jun 2023	02 Jun 2023	28 Jun 2023	07 Jun 2023

Moisture Content

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HA4_0.2-0.3	SE248520.001	LB281394	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	07 Jun 2023	06 Jun 2023
HA1_0.2-0.3	SE248520.002	LB281394	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	07 Jun 2023	06 Jun 2023
HA2_0.2-0.3	SE248520.003	LB281394	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	07 Jun 2023	06 Jun 2023
QD1	SE248520.004	LB281394	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	07 Jun 2023	06 Jun 2023
QD2	SE248520.005	LB281394	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	07 Jun 2023	06 Jun 2023
Trip Blank	SE248520.006	LB281394	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	07 Jun 2023	06 Jun 2023

OC Pesticides in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HA4_0.2-0.3	SE248520.001	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	08 Jun 2023
HA1_0.2-0.3	SE248520.002	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	08 Jun 2023
HA2_0.2-0.3	SE248520.003	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	08 Jun 2023
QD1	SE248520.004	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	08 Jun 2023
QD2	SE248520.005	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	08 Jun 2023

OP Pesticides in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HA4_0.2-0.3	SE248520.001	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	07 Jun 2023
HA1_0.2-0.3	SE248520.002	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	07 Jun 2023
HA2_0.2-0.3	SE248520.003	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	07 Jun 2023
QD1	SE248520.004	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	07 Jun 2023
QD2	SE248520.005	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	07 Jun 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
HA4_0.2-0.3	SE248520.001	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	07 Jun 2023
HA1_0.2-0.3	SE248520.002	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	07 Jun 2023
HA2_0.2-0.3	SE248520.003	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	07 Jun 2023
QD1	SE248520.004	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	07 Jun 2023
QD2	SE248520.005	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	07 Jun 2023

PAH (Polynuclear Aromatic Hydrocarbons) in Water

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QR1	SE248520.008	LB281260	31 May 2023	31 May 2023	07 Jun 2023	02 Jun 2023	12 Jul 2023	08 Jun 2023

PCBs in Soil

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

Sample Name	Sample No.	QC Ref

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.

PCBs in Soil (continued)

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HA4_0.2-0.3	SE248520.001	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	08 Jun 2023
HA1_0.2-0.3	SE248520.002	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	08 Jun 2023
HA2_0.2-0.3	SE248520.003	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	08 Jun 2023
QD1	SE248520.004	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	08 Jun 2023
QD2	SE248520.005	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	08 Jun 2023

Total Cyanide in soil by Discrete Analyser

Method: ME-(AU)-[ENV]AN077/AN287

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HA4_0.2-0.3	SE248520.001	LB281641	31 May 2023	31 May 2023	14 Jun 2023	06 Jun 2023	14 Jun 2023	07 Jun 2023
HA1_0.2-0.3	SE248520.002	LB281641	31 May 2023	31 May 2023	14 Jun 2023	06 Jun 2023	14 Jun 2023	07 Jun 2023
HA2_0.2-0.3	SE248520.003	LB281641	31 May 2023	31 May 2023	14 Jun 2023	06 Jun 2023	14 Jun 2023	07 Jun 2023

Total Phenolics in Soil

Method: ME-(AU)-[ENV]AN295

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HA4_0.2-0.3	SE248520.001	LB281632	31 May 2023	31 May 2023	14 Jun 2023	06 Jun 2023	14 Jun 2023	06 Jun 2023
HA1_0.2-0.3	SE248520.002	LB281632	31 May 2023	31 May 2023	14 Jun 2023	06 Jun 2023	14 Jun 2023	06 Jun 2023
HA2_0.2-0.3	SE248520.003	LB281632	31 May 2023	31 May 2023	14 Jun 2023	06 Jun 2023	14 Jun 2023	06 Jun 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
HA4_0.2-0.3	SE248520.001	LB281395	31 May 2023	31 May 2023	27 Nov 2023	02 Jun 2023	27 Nov 2023	07 Jun 2023
HA1_0.2-0.3	SE248520.002	LB281395	31 May 2023	31 May 2023	27 Nov 2023	02 Jun 2023	27 Nov 2023	07 Jun 2023
HA2_0.2-0.3	SE248520.003	LB281395	31 May 2023	31 May 2023	27 Nov 2023	02 Jun 2023	27 Nov 2023	07 Jun 2023
QD1	SE248520.004	LB281395	31 May 2023	31 May 2023	27 Nov 2023	02 Jun 2023	27 Nov 2023	07 Jun 2023
QD2	SE248520.005	LB281395	31 May 2023	31 May 2023	27 Nov 2023	02 Jun 2023	27 Nov 2023	07 Jun 2023

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QR1	SE248520.008	LB281319	31 May 2023	31 May 2023	27 Nov 2023	02 Jun 2023	27 Nov 2023	05 Jun 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
HA4_0.2-0.3	SE248520.001	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	07 Jun 2023
HA1_0.2-0.3	SE248520.002	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	07 Jun 2023
HA2_0.2-0.3	SE248520.003	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	07 Jun 2023
QD1	SE248520.004	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	07 Jun 2023
QD2	SE248520.005	LB281392	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	12 Jul 2023	07 Jun 2023

TRH (Total Recoverable Hydrocarbons) in Water

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QR1	SE248520.008	LB281260	31 May 2023	31 May 2023	07 Jun 2023	02 Jun 2023	12 Jul 2023	08 Jun 2023

VOC's in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
HA4_0.2-0.3	SE248520.001	LB281393	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	14 Jun 2023	07 Jun 2023
HA1_0.2-0.3	SE248520.002	LB281393	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	14 Jun 2023	07 Jun 2023
HA2_0.2-0.3	SE248520.003	LB281393	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	14 Jun 2023	07 Jun 2023
QD1	SE248520.004	LB281393	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	14 Jun 2023	07 Jun 2023
QD2	SE248520.005	LB281393	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	14 Jun 2023	07 Jun 2023
Trip Blank	SE248520.006	LB281393	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	14 Jun 2023	07 Jun 2023
Trip Spike	SE248520.007	LB281393	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	14 Jun 2023	07 Jun 2023

VOCs in Water

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QR1	SE248520.008	LB281645	31 May 2023	31 May 2023	14 Jun 2023	06 Jun 2023	14 Jun 2023	07 Jun 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
HA4_0.2-0.3	SE248520.001	LB281393	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	14 Jun 2023	07 Jun 2023
HA1_0.2-0.3	SE248520.002	LB281393	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	14 Jun 2023	07 Jun 2023
HA2_0.2-0.3	SE248520.003	LB281393	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	14 Jun 2023	07 Jun 2023

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.

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QD1	SE248520.004	LB281393	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	14 Jun 2023	07 Jun 2023
QD2	SE248520.005	LB281393	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	14 Jun 2023	07 Jun 2023
Trip Blank	SE248520.006	LB281393	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	14 Jun 2023	07 Jun 2023
Trip Spike	SE248520.007	LB281393	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	14 Jun 2023	07 Jun 2023

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QR1	SE248520.008	LB281645	31 May 2023	31 May 2023	14 Jun 2023	06 Jun 2023	14 Jun 2023	07 Jun 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 identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

OC Pesticides in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	HA4_0.2-0.3	SE248520.001	%	60 - 130%	87
	HA1_0.2-0.3	SE248520.002	%	60 - 130%	79
	HA2_0.2-0.3	SE248520.003	%	60 - 130%	82

OP Pesticides in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	HA4_0.2-0.3	SE248520.001	%	60 - 130%	88
	HA1_0.2-0.3	SE248520.002	%	60 - 130%	89
	HA2_0.2-0.3	SE248520.003	%	60 - 130%	88
d14-p-terphenyl (Surrogate)	HA4_0.2-0.3	SE248520.001	%	60 - 130%	95
	HA1_0.2-0.3	SE248520.002	%	60 - 130%	97
	HA2_0.2-0.3	SE248520.003	%	60 - 130%	96

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	HA4_0.2-0.3	SE248520.001	%	70 - 130%	88
	HA1_0.2-0.3	SE248520.002	%	70 - 130%	89
	HA2_0.2-0.3	SE248520.003	%	70 - 130%	88
d14-p-terphenyl (Surrogate)	HA4_0.2-0.3	SE248520.001	%	70 - 130%	95
	HA1_0.2-0.3	SE248520.002	%	70 - 130%	97
	HA2_0.2-0.3	SE248520.003	%	70 - 130%	96
d5-nitrobenzene (Surrogate)	HA4_0.2-0.3	SE248520.001	%	70 - 130%	97
	HA1_0.2-0.3	SE248520.002	%	70 - 130%	98
	HA2_0.2-0.3	SE248520.003	%	70 - 130%	96

PAH (Polynuclear Aromatic Hydrocarbons) in Water

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	QR1	SE248520.008	%	40 - 130%	63
d14-p-terphenyl (Surrogate)	QR1	SE248520.008	%	40 - 130%	79
d5-nitrobenzene (Surrogate)	QR1	SE248520.008	%	40 - 130%	59

PCBs in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
TCMX (Surrogate)	HA4_0.2-0.3	SE248520.001	%	60 - 130%	83
	HA1_0.2-0.3	SE248520.002	%	60 - 130%	75
	HA2_0.2-0.3	SE248520.003	%	60 - 130%	78

VOC's in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	HA4_0.2-0.3	SE248520.001	%	60 - 130%	78
	HA1_0.2-0.3	SE248520.002	%	60 - 130%	73
	HA2_0.2-0.3	SE248520.003	%	60 - 130%	77
	QD1	SE248520.004	%	60 - 130%	92
	QD2	SE248520.005	%	60 - 130%	89
	Trip Blank	SE248520.006	%	60 - 130%	95
	Trip Spike	SE248520.007	%	60 - 130%	92
d4-1,2-dichloroethane (Surrogate)	HA4_0.2-0.3	SE248520.001	%	60 - 130%	82
	HA1_0.2-0.3	SE248520.002	%	60 - 130%	75
	HA2_0.2-0.3	SE248520.003	%	60 - 130%	76
	QD1	SE248520.004	%	60 - 130%	82
	QD2	SE248520.005	%	60 - 130%	81
	Trip Blank	SE248520.006	%	60 - 130%	87
	Trip Spike	SE248520.007	%	60 - 130%	86
d8-toluene (Surrogate)	HA4_0.2-0.3	SE248520.001	%	60 - 130%	71
	HA1_0.2-0.3	SE248520.002	%	60 - 130%	72
	HA2_0.2-0.3	SE248520.003	%	60 - 130%	68
	QD1	SE248520.004	%	60 - 130%	84
	QD2	SE248520.005	%	60 - 130%	82
	Trip Blank	SE248520.006	%	60 - 130%	89
	Trip Spike	SE248520.007	%	60 - 130%	87

VOCs in Water

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

Parameter	Sample Name	Sample Number	Units

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 identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

VOCs in Water (continued) — Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	QR1	SE248520.008	%	40 - 130%	107
d4-1,2-dichloroethane (Surrogate)	QR1	SE248520.008	%	40 - 130%	106
d8-toluene (Surrogate)	QR1	SE248520.008	%	40 - 130%	98

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	HA4_0.2-0.3	SE248520.001	%	60 - 130%	78
	HA1_0.2-0.3	SE248520.002	%	60 - 130%	73
	HA2_0.2-0.3	SE248520.003	%	60 - 130%	77
	QD1	SE248520.004	%	60 - 130%	92
	QD2	SE248520.005	%	60 - 130%	89
d4-1,2-dichloroethane (Surrogate)	HA4_0.2-0.3	SE248520.001	%	60 - 130%	82
	HA1_0.2-0.3	SE248520.002	%	60 - 130%	75
	HA2_0.2-0.3	SE248520.003	%	60 - 130%	76
	QD1	SE248520.004	%	60 - 130%	82
	QD2	SE248520.005	%	60 - 130%	81
d8-toluene (Surrogate)	HA4_0.2-0.3	SE248520.001	%	60 - 130%	71
	HA1_0.2-0.3	SE248520.002	%	60 - 130%	72
	HA2_0.2-0.3	SE248520.003	%	60 - 130%	68
	QD1	SE248520.004	%	60 - 130%	84
	QD2	SE248520.005	%	60 - 130%	82

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	QR1	SE248520.008	%	40 - 130%	107
d4-1,2-dichloroethane (Surrogate)	QR1	SE248520.008	%	60 - 130%	106
d8-toluene (Surrogate)	QR1	SE248520.008	%	40 - 130%	98

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 (dissolved) in Water

Method: ME-(AU)-[ENV]AN311(Perth)/AN312

Sample Number	Parameter	Units	LOR	Result
LB281263.001	Mercury	mg/L	0.0001	<0.0001

Mercury in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB281397.001	Mercury	mg/kg	0.05	<0.05

OC Pesticides in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB281392.001		Alpha BHC	mg/kg	0.1	<0.1
		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
		Beta BHC	mg/kg	0.1	<0.1
		Lindane (gamma BHC)	mg/kg	0.1	<0.1
		Delta BHC	mg/kg	0.1	<0.1
		Heptachlor	mg/kg	0.1	<0.1
		Aldrin	mg/kg	0.1	<0.1
		Isodrin	mg/kg	0.1	<0.1
		Heptachlor epoxide	mg/kg	0.1	<0.1
		Gamma Chlordane	mg/kg	0.1	<0.1
		Alpha Chlordane	mg/kg	0.1	<0.1
		Alpha Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDE	mg/kg	0.1	<0.1
		Dieldrin	mg/kg	0.2	<0.2
		Endrin	mg/kg	0.2	<0.2
		Beta Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDD	mg/kg	0.1	<0.1
		Endrin aldehyde	mg/kg	0.1	<0.1
		Endosulfan sulphate	mg/kg	0.1	<0.1
		p,p'-DDT	mg/kg	0.1	<0.1
		Endrin ketone	mg/kg	0.1	<0.1
		Methoxychlor	mg/kg	0.1	<0.1
		Mirex	mg/kg	0.1	<0.1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	87

OP Pesticides in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB281392.001		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2
		Bromophos Ethyl	mg/kg	0.2	<0.2
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5
		Dichlorvos	mg/kg	0.5	<0.5
		Dimethoate	mg/kg	0.5	<0.5
		Ethion	mg/kg	0.2	<0.2
		Fenitrothion	mg/kg	0.2	<0.2
		Malathion	mg/kg	0.2	<0.2
		Methidathion	mg/kg	0.5	<0.5
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2
	Surrogates	2-fluorobiphenyl (Surrogate)	%	-	95
		d14-p-terphenyl (Surrogate)	%	-	103

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB281392.001	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

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.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

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

Sample Number		Parameter	Units	LOR	Result
LB281392.001		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)	%	-	97
		2-fluorobiphenyl (Surrogate)	%	-	95
		d14-p-terphenyl (Surrogate)	%	-	103

PAH (Polynuclear Aromatic Hydrocarbons) in Water

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

Sample Number		Parameter	Units	LOR	Result
LB281260.001		Naphthalene	µg/L	0.1	<0.1
		2-methylnaphthalene	µg/L	0.1	<0.1
		1-methylnaphthalene	µg/L	0.1	<0.1
		Acenaphthylene	µg/L	0.1	<0.1
		Acenaphthene	µg/L	0.1	<0.1
		Fluorene	µg/L	0.1	<0.1
		Phenanthrene	µg/L	0.1	<0.1
		Anthracene	µg/L	0.1	<0.1
		Fluoranthene	µg/L	0.1	<0.1
		Pyrene	µg/L	0.1	<0.1
		Benzo(a)anthracene	µg/L	0.1	<0.1
		Chrysene	µg/L	0.1	<0.1
		Benzo(a)pyrene	µg/L	0.1	<0.1
		Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1
		Dibenzo(ah)anthracene	µg/L	0.1	<0.1
		Benzo(ghi)perylene	µg/L	0.1	<0.1
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	50
		2-fluorobiphenyl (Surrogate)	%	-	54
		d14-p-terphenyl (Surrogate)	%	-	74

PCBs in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB281392.001		Arochlor 1016	mg/kg	0.2	<0.2
		Arochlor 1221	mg/kg	0.2	<0.2
		Arochlor 1232	mg/kg	0.2	<0.2
		Arochlor 1242	mg/kg	0.2	<0.2
		Arochlor 1248	mg/kg	0.2	<0.2
		Arochlor 1254	mg/kg	0.2	<0.2
		Arochlor 1260	mg/kg	0.2	<0.2
		Arochlor 1262	mg/kg	0.2	<0.2
		Arochlor 1268	mg/kg	0.2	<0.2
		Total PCBs (Arochlors)	mg/kg	1	<1
	Surrogates	TCMX (Surrogate)	%	-	87

Total Cyanide in soil by Discrete Analyser

Method: ME-(AU)-[ENV]AN077/AN287

Sample Number	Parameter	Units	LOR	Result
LB281641.001	Total Cyanide	mg/kg	0.5	<0.5

Total Phenolics in Soil

Method: ME-(AU)-[ENV]AN295

Sample Number	Parameter	Units	LOR	Result
LB281632.001	Total Phenols	mg/kg	0.5	<0.5

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

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

Sample Number	Parameter	Units	LOR

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.

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

Sample Number	Parameter	Units	LOR	Result
LB281395.001	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

Trace Metals (Dissolved) in Water by ICPMS — Method: ME-(AU)-[ENV]AN318

Sample Number	Parameter	Units	LOR	Result
LB281319.001	Arsenic	µg/L	1	<1
	Cadmium	µg/L	0.1	<0.1
	Chromium	µg/L	1	<1
	Copper	µg/L	1	<1
	Lead	µg/L	1	<1
	Nickel	µg/L	1	<1
	Zinc	µg/L	5	<5

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

Sample Number	Parameter	Units	LOR	Result
LB281392.001	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

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

Sample Number	Parameter	Units	LOR	Result
LB281260.001	TRH C10-C14	µg/L	50	<50
	TRH C15-C28	µg/L	200	<200
	TRH C29-C36	µg/L	200	<200
	TRH C37-C40	µg/L	200	<200

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

Sample Number		Parameter	Units	LOR	Result
LB281393.001	Fumigants	2,2-dichloropropane	mg/kg	0.1	<0.1
		1,2-dichloropropane	mg/kg	0.1	<0.1
		cis-1,3-dichloropropene	mg/kg	0.1	<0.1
		trans-1,3-dichloropropene	mg/kg	0.1	<0.1
		1,2-dibromoethane (EDB)	mg/kg	0.1	<0.1
	Halogenated Aliphatics	Dichlorodifluoromethane (CFC-12)	mg/kg	1	<1
		Chloromethane	mg/kg	1	<1
		Vinyl chloride (Chloroethene)	mg/kg	0.1	<0.1
		Bromomethane	mg/kg	1	<1
		Chloroethane	mg/kg	1	<1
		Trichlorofluoromethane	mg/kg	1	<1
		1,1-dichloroethene	mg/kg	0.1	<0.1
		Iodomethane	mg/kg	5	<5
		Dichloromethane (Methylene chloride)	mg/kg	0.5	<0.5
		Allyl chloride	mg/kg	0.1	<0.1
		trans-1,2-dichloroethene	mg/kg	0.1	<0.1
		1,1-dichloroethane	mg/kg	0.1	<0.1
		cis-1,2-dichloroethene	mg/kg	0.1	<0.1
		Bromochloromethane	mg/kg	0.1	<0.1
		1,2-dichloroethane	mg/kg	0.1	<0.1
		1,1,1-trichloroethane	mg/kg	0.1	<0.1
		1,1-dichloropropene	mg/kg	0.1	<0.1
		Carbon tetrachloride	mg/kg	0.1	<0.1
		Dibromomethane	mg/kg	0.1	<0.1
		Trichloroethene (Trichloroethylene,TCE)	mg/kg	0.1	<0.1
		1,1,2-trichloroethane	mg/kg	0.1	<0.1
		1,3-dichloropropane	mg/kg	0.1	<0.1
		Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	<0.1

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.

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

Sample Number		Parameter	Units	LOR	Result
LB281393.001	Halogenated Aliphatics	1,1,1,2-tetrachloroethane	mg/kg	0.1	<0.1
		1,1,2,2-tetrachloroethane	mg/kg	0.1	<0.1
		1,2,3-trichloropropane	mg/kg	0.1	<0.1
		trans-1,4-dichloro-2-butene	mg/kg	1	<1
		1,2-dibromo-3-chloropropane	mg/kg	0.1	<0.1
		Hexachlorobutadiene	mg/kg	0.1	<0.1
	Halogenated Aromatics	Chlorobenzene	mg/kg	0.1	<0.1
		Bromobenzene	mg/kg	0.1	<0.1
		2-chlorotoluene	mg/kg	0.1	<0.1
		4-chlorotoluene	mg/kg	0.1	<0.1
		1,3-dichlorobenzene	mg/kg	0.1	<0.1
		1,4-dichlorobenzene	mg/kg	0.1	<0.1
		1,2-dichlorobenzene	mg/kg	0.1	<0.1
		1,2,4-trichlorobenzene	mg/kg	0.1	<0.1
		1,2,3-trichlorobenzene	mg/kg	0.1	<0.1
	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
		Styrene (Vinyl benzene)	mg/kg	0.1	<0.1
		o-xylene	mg/kg	0.1	<0.1
		Isopropylbenzene (Cumene)	mg/kg	0.1	<0.1
		n-propylbenzene	mg/kg	0.1	<0.1
		1,3,5-trimethylbenzene	mg/kg	0.1	<0.1
		tert-butylbenzene	mg/kg	0.1	<0.1
		1,2,4-trimethylbenzene	mg/kg	0.1	<0.1
		sec-butylbenzene	mg/kg	0.1	<0.1
		p-isopropyltoluene	mg/kg	0.1	<0.1
		n-butylbenzene	mg/kg	0.1	<0.1
	Nitrogenous Compounds	Acrylonitrile	mg/kg	0.1	<0.1
		2-nitropropane	mg/kg	10	<10
	Oxygenated Compounds	Acetone (2-propanone)	mg/kg	10	<10
		MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	<0.1
		Vinyl acetate*	mg/kg	10	<10
		MIBK (4-methyl-2-pentanone)	mg/kg	1	<1
		2-hexanone (MBK)	mg/kg	5	<5
	Polycyclic VOCs	Naphthalene (VOC)*	mg/kg	0.1	<0.1
	Sulphonated	Carbon disulfide	mg/kg	0.5	<0.5
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	87
		d8-toluene (Surrogate)	%	-	81
		Bromofluorobenzene (Surrogate)	%	-	94
	Totals	Total Other Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	<1.8
		Total Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	<1.8
		Total BTEX*	mg/kg	0.6	<0.6
	Trihalomethanes	Chloroform (THM)	mg/kg	0.1	<0.1
		Bromodichloromethane (THM)	mg/kg	0.1	<0.1
		Dibromochloromethane (THM)	mg/kg	0.1	<0.1
		Bromoform (THM)	mg/kg	0.1	<0.1

VOCs in Water Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB281645.001	Monocyclic Aromatic Hydrocarbons	Benzene	µg/L	0.5	<0.5
		Toluene	µg/L	0.5	<0.5
		Ethylbenzene	µg/L	0.5	<0.5
		m/p-xylene	µg/L	1	<1
		o-xylene	µg/L	0.5	<0.5
	Polycyclic VOCs	Naphthalene (VOC)*	µg/L	0.5	<0.5
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	102
		d8-toluene (Surrogate)	%	-	96
		Bromofluorobenzene (Surrogate)	%	-	105

METHOD BLANKS

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.

Volatile Petroleum Hydrocarbons in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB281393.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	87

Volatile Petroleum Hydrocarbons in Water

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

Sample Number		Parameter	Units	LOR	Result
LB281645.001		TRH C6-C9	µg/L	40	<40
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	102
		d8-toluene (Surrogate)	%	-	96
		Bromofluorobenzene (Surrogate)	%	-	105

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 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 x 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 identifer 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 (dissolved) in Water

Method: ME-(AU)-[ENV]AN311(Perth)/AN312

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248519.002	LB281263.014	Mercury	μg/L	0.0001	<0.0001	<0.0001	200	195
SE248520.008	LB281263.018	Mercury	μg/L	0.0001	<0.0001	<0.0001	200	0

Mercury in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248448.017	LB281397.014	Mercury	mg/kg	0.05	<0.05	<0.05	200	0

Moisture Content

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248448.017	LB281394.011	% Moisture	%w/w	1	9.3	8.5	41	9
SE248520.005	LB281394.022	% Moisture	%w/w	1	9.1	7.4	42	20
SE248520.006	LB281394.024	% Moisture	%w/w	1	<1.0	<1.0	200	0

OC Pesticides in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248500.002	LB281392.014		Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Endosulfan	mg/kg	0.2	<0.1	<0.1	200	0
			o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Dieldrin	mg/kg	0.2	<0.05	<0.05	200	0
			Endrin	mg/kg	0.2	<0.1	<0.1	200	0
			Beta Endosulfan	mg/kg	0.2	<0.1	<0.1	200	0
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
			Total OC VIC EPA	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.12	0.12	30	1
SE248520.003	LB281392.025		Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.1	200	0
			o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 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 x 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 identifer 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.

OC Pesticides in Soil (continued) — Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248520.003	LB281392.025		p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Dieldrin	mg/kg	0.2	<0.2	<0.05	200	0
			Endrin	mg/kg	0.2	<0.2	<0.1	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.1	200	0
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
			Total OC VIC EPA	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.12	0.13	30	4

OP Pesticides in Soil — Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248500.002	LB281392.014		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
			Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0
			Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
			Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
			Ethion	mg/kg	0.2	<0.2	<0.2	200	0
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
			Malathion	mg/kg	0.2	<0.2	<0.2	200	0
			Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0
			Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	200	0
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	1
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	1
SE248520.003	LB281392.025		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
			Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0
			Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
			Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
			Ethion	mg/kg	0.2	<0.2	<0.2	200	0
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
			Malathion	mg/kg	0.2	<0.2	<0.2	200	0
			Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0
			Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	200	0
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	2
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	1

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248500.002	LB281392.014		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	150	1
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	0.1	0.2	103	37
			Pyrene	mg/kg	0.1	0.1	0.2	102	36
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 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 x 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 identifer 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 %
SE248500.002	LB281392.014		Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	185	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	198	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	167	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	0.2	0.4	61	62 ②
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.48	0.49	30	1
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.44	0.45	30	1
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.47	0.48	30	1
SE248520.003	LB281392.025		Naphthalene	mg/kg	0.1	<0.1	<0.1	185	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	135	9
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	<0.2	<0.2	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	<0.2	<0.2	175	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	<0.3	<0.3	134	0
			Total PAH (18)	mg/kg	0.8	<0.8	<0.1	200	9
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.49	30	2
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.45	30	2
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.48	30	1

PCBs in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248520.003	LB281392.025		Arochlor 1016	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1221	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1232	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1242	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1248	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1254	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1260	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1262	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1268	mg/kg	0.2	<0.2	<0.2	200	0
			Total PCBs (Arochlors)	mg/kg	1	<1	<1	200	0
		Surrogates	TCMX (Surrogate)	mg/kg	-	0	0.12	30	4

Total Cyanide in soil by Discrete Analyser

Method: ME-(AU)-[ENV]AN077/AN287

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248544.002	LB281641.017	Total Cyanide	mg/kg	0.5	24	20	32	19

Total Phenolics in Soil

Method: ME-(AU)-[ENV]AN295

Original	Duplicate	Parameter	Units	LOR

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 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 x 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 identifer 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.

Total Phenolics in Soil (continued) — Method: ME-(AU)-[ENV]AN295

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248436.002	LB281632.007		Total Phenols	mg/kg	0.5	<0.5	<0.5	200	0

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248448.017	LB281395.014		Arsenic, As	mg/kg	1	9	9	42	3
			Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
			Chromium, Cr	mg/kg	0.5	12	12	34	3
			Copper, Cu	mg/kg	0.5	17	16	33	7
			Nickel, Ni	mg/kg	0.5	3.5	3.6	44	2
			Lead, Pb	mg/kg	1	13	13	38	2
			Zinc, Zn	mg/kg	2	19	18	41	5

Trace Metals (Dissolved) in Water by ICPMS — Method: ME-(AU)-[ENV]AN318

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248519.003	LB281319.014		Arsenic	μg/L	1	1	1	87	0
			Cadmium	μg/L	0.1	<0.1	<0.1	200	0
			Chromium	μg/L	1	1	1	101	3
			Copper	μg/L	1	<1	<1	169	0
			Lead	μg/L	1	<1	<1	200	0
			Nickel	μg/L	1	7	7	28	0
			Zinc	μg/L	5	14	14	51	2
SE248562.001	LB281319.018		Arsenic	μg/L	1	<1	<1	165	0
			Cadmium	μg/L	0.1	<0.1	<0.1	200	0
			Chromium	μg/L	1	1	1	100	2
			Copper	μg/L	1	2	2	81	2
			Lead	μg/L	1	<1	<1	200	0
			Nickel	μg/L	1	1	1	84	0
			Zinc	μg/L	5	<5	<5	200	0

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248500.002	LB281392.014		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	135	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	TRH >C10-C16	mg/kg	25	<25	<25	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	200	0
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0
SE248520.003	LB281392.025		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	TRH >C10-C16	mg/kg	25	<25	<25	200	0
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	200	0
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248418.001	LB281260.028		TRH C10-C14	μg/L	50	<50	<50	200	0
			TRH C15-C28	μg/L	200	<200	<200	200	0
			TRH C29-C36	μg/L	200	<200	<200	200	0
			TRH C37-C40	μg/L	200	<200	<200	200	0
			TRH C10-C40	μg/L	320	<320	<320	200	0
		TRH F Bands	TRH >C10-C16	μg/L	60	<60	<60	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 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 x 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 identifer 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.

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248418.001	LB281260.028	TRH F Bands	TRH >C10-C16 - Naphthalene (F2)	µg/L	60	<60	<60	200	0
			TRH >C16-C34 (F3)	µg/L	500	<500	<500	200	0
			TRH >C34-C40 (F4)	µg/L	500	<500	<500	200	0
SE248519.004	LB281260.029		TRH C10-C14	µg/L	50	<50	<50	200	0
			TRH C15-C28	µg/L	200	<200	<200	200	0
			TRH C29-C36	µg/L	200	<200	<200	200	0
			TRH C37-C40	µg/L	200	<200	<200	200	0
			TRH C10-C40	µg/L	320	<320	<320	200	0
		TRH F Bands	TRH >C10-C16	µg/L	60	<60	<60	200	0
			TRH >C10-C16 - Naphthalene (F2)	µg/L	60	<60	<60	200	0
			TRH >C16-C34 (F3)	µg/L	500	<500	<500	200	0
			TRH >C34-C40 (F4)	µg/L	500	<500	<500	200	0

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248448.017	LB281393.034	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	8.0	50	6
			d8-toluene (Surrogate)	mg/kg	-	7.8	8.3	50	6
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.7	8.8	50	2
		Totals	Total BTEX*	mg/kg	0.6	<0.3	<0.3	200	0
			Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0
SE248520.003	LB281393.038	Fumigants	2,2-dichloropropane	mg/kg	0.1	<0.1	<0.1	200	0
			1,2-dichloropropane	mg/kg	0.1	<0.1	<0.1	200	0
			cis-1,3-dichloropropene	mg/kg	0.1	<0.1	<0.1	200	0
			trans-1,3-dichloropropene	mg/kg	0.1	<0.1	<0.1	200	0
			1,2-dibromoethane (EDB)	mg/kg	0.1	<0.1	<0.1	200	0
		Halogenated Aliphatics	Dichlorodifluoromethane (CFC-12)	mg/kg	1	<1	<1	200	0
			Chloromethane	mg/kg	1	<1	<1	200	0
			Vinyl chloride (Chloroethene)	mg/kg	0.1	<0.1	<0.1	200	0
			Bromomethane	mg/kg	1	<1	<1	200	0
			Chloroethane	mg/kg	1	<1	<1	200	0
			Trichlorofluoromethane	mg/kg	1	<1	<1	200	0
			1,1-dichloroethene	mg/kg	0.1	<0.1	<0.1	200	0
			Iodomethane	mg/kg	5	<5	<5	200	0
			Dichloromethane (Methylene chloride)	mg/kg	0.5	<0.5	<0.5	200	0
			Allyl chloride	mg/kg	0.1	<0.1	<0.1	200	0
			trans-1,2-dichloroethene	mg/kg	0.1	<0.1	<0.1	200	0
			1,1-dichloroethane	mg/kg	0.1	<0.1	<0.1	200	0
			cis-1,2-dichloroethene	mg/kg	0.1	<0.1	<0.1	200	0
			Bromochloromethane	mg/kg	0.1	<0.1	<0.1	200	0
			1,2-dichloroethane	mg/kg	0.1	<0.1	<0.1	200	0
			1,1,1-trichloroethane	mg/kg	0.1	<0.1	<0.1	200	0
			1,1-dichloropropene	mg/kg	0.1	<0.1	<0.1	200	0
			Carbon tetrachloride	mg/kg	0.1	<0.1	<0.1	200	0
			Dibromomethane	mg/kg	0.1	<0.1	<0.1	200	0
			Trichloroethene (Trichloroethylene,TCE)	mg/kg	0.1	<0.1	<0.1	200	0
			1,1,2-trichloroethane	mg/kg	0.1	<0.1	<0.1	200	0
			1,3-dichloropropane	mg/kg	0.1	<0.1	<0.1	200	0
			Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	<0.1	<0.1	200	0
			1,1,1,2-tetrachloroethane	mg/kg	0.1	<0.1	<0.1	200	0
			1,1,2,2-tetrachloroethane	mg/kg	0.1	<0.1	<0.1	200	0
			1,2,3-trichloropropane	mg/kg	0.1	<0.1	<0.1	200	0
			trans-1,4-dichloro-2-butene	mg/kg	1	<1	<1	200	0
			1,2-dibromo-3-chloropropane	mg/kg	0.1	<0.1	<0.1	200	0
			Hexachlorobutadiene	mg/kg	0.1	<0.1	<0.1	200	0
		Halogenated	Chlorobenzene	mg/kg	0.1	<0.1	<0.1	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 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 x 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 identifer 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)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248520.003	LB281393.038	Halogenated Aromatics	Bromobenzene	mg/kg	0.1	<0.1	<0.1	200	0
			2-chlorotoluene	mg/kg	0.1	<0.1	<0.1	200	0
			4-chlorotoluene	mg/kg	0.1	<0.1	<0.1	200	0
			1,3-dichlorobenzene	mg/kg	0.1	<0.1	<0.1	200	0
			1,4-dichlorobenzene	mg/kg	0.1	<0.1	<0.1	200	0
			1,2-dichlorobenzene	mg/kg	0.1	<0.1	<0.1	200	0
			1,2,4-trichlorobenzene	mg/kg	0.1	<0.1	<0.1	200	0
			1,2,3-trichlorobenzene	mg/kg	0.1	<0.1	<0.1	200	0
		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
			Styrene (Vinyl benzene)	mg/kg	0.1	<0.1	<0.1	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
			Isopropylbenzene (Cumene)	mg/kg	0.1	<0.1	<0.1	200	0
			n-propylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			1,3,5-trimethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			tert-butylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			1,2,4-trimethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			sec-butylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			p-isopropyltoluene	mg/kg	0.1	<0.1	<0.1	200	0
			n-butylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
		Nitrogenous Compounds	Acrylonitrile	mg/kg	0.1	<0.1	<0.1	200	0
			2-nitropropane	mg/kg	10	<10	<10	200	0
		Oxygenated Compounds	Acetone (2-propanone)	mg/kg	10	<10	<10	200	0
			MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	<0.1	<0.1	200	0
			Vinyl acetate*	mg/kg	10	<10	<10	200	0
			MIBK (4-methyl-2-pentanone)	mg/kg	1	<1	<1	200	0
			2-hexanone (MBK)	mg/kg	5	<5	<5	200	0
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	200	0
		Sulphonated	Carbon disulfide	mg/kg	0.5	<0.5	<0.5	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.6	7.5	50	1
			d8-toluene (Surrogate)	mg/kg	-	6.8	6.4	50	5
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.7	7.5	50	2
		Totals	Total Other Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	<1.8	<1.8	200	0
			Total Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	<1.8	<1.8	200	0
			Total BTEX*	mg/kg	0.6	<0.6	<0.3	200	0
			Total Volatile Chlorinated Hydrocarbons*	mg/kg	3	<3.0	<3	200	0
			Total VOC*	mg/kg	24	<24	<24	200	0
			Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0
		Trihalomethanes	Chloroform (THM)	mg/kg	0.1	<0.1	<0.1	200	0
			Bromodichloromethane (THM)	mg/kg	0.1	<0.1	<0.1	200	0
			Dibromochloromethane (THM)	mg/kg	0.1	<0.1	<0.1	200	0
			Bromoform (THM)	mg/kg	0.1	<0.1	<0.1	200	0

VOCs in Water Method: ME-(AU)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248514.001	LB281645.026	Monocyclic Aromatic	Benzene	μg/L	0.5	<0.5	<0.5	200	0
			Toluene	μg/L	0.5	0.9	1.0	83	4
			Ethylbenzene	μg/L	0.5	<0.5	<0.5	200	0
			m/p-xylene	μg/L	1	<1	<1	200	0
			o-xylene	μg/L	0.5	<0.5	<0.5	200	0
		Polycyclic	Naphthalene (VOC)*	μg/L	0.5	<0.5	<0.5	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	μg/L	-	10.7	9.6	30	11
			d8-toluene (Surrogate)	μg/L	-	9.9	9.5	30	4
			Bromofluorobenzene (Surrogate)	μg/L	-	10.9	10.3	30	6
		Totals	Total BTEX	μg/L	3	<3	<3	200	0
SE248514.002	LB281645.027	Monocyclic Aromatic	Benzene	μg/L	0.5	<0.5	<0.5	200	0
			Toluene	μg/L	0.5	6.1	6.1	38	0
			Ethylbenzene	μg/L	0.5	<0.5	<0.5	200	0
			m/p-xylene	μg/L	1	<1	<1	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 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 x 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 identifer 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.

VOCs in Water (continued) — Method: ME-(AU)-[ENV]AN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248514.002	LB281645.027	Monocyclic	o-xylene	µg/L	0.5	<0.5	<0.5	200	0
		Polycyclic	Naphthalene (VOC)*	µg/L	0.5	<0.5	<0.5	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	10.5	9.7	30	8
			d8-toluene (Surrogate)	µg/L	-	9.8	9.6	30	2
			Bromofluorobenzene (Surrogate)	µg/L	-	10.7	10.5	30	2
		Totals	Total BTEX	µg/L	3	6	6	79	0

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248448.017	LB281393.034		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	8.0	50	6
			d8-toluene (Surrogate)	mg/kg	-	7.8	8.3	50	6
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.7	8.8	50	2
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0
SE248520.003	LB281393.035		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	7.5	50	1
			d8-toluene (Surrogate)	mg/kg	-	6.8	6.4	50	5
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.7	7.5	50	2
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248514.001	LB281645.026		TRH C6-C10	µg/L	50	<50	<50	189	0
			TRH C6-C9	µg/L	40	<50	<50	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	0.0	0.0	30	11
			d8-toluene (Surrogate)	µg/L	-	0.0	0.0	30	4
			Bromofluorobenzene (Surrogate)	µg/L	-	0.0	0.0	30	6
		VPH F Bands	Benzene (F0)	µg/L	0.5	<0.5	<0.5	200	0
			TRH C6-C10 minus BTEX (F1)	µg/L	50	<50	<50	194	0
SE248514.002	LB281645.027		TRH C6-C10	µg/L	50	79	130	79	46
			TRH C6-C9	µg/L	40	56	86	86	42
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	0.0	0.0	30	8
			d8-toluene (Surrogate)	µg/L	-	0.0	0.0	30	2
			Bromofluorobenzene (Surrogate)	µg/L	-	0.0	0.0	30	2
		VPH F Bands	Benzene (F0)	µg/L	0.5	<0.5	<0.5	200	0
			TRH C6-C10 minus BTEX (F1)	µg/L	50	73	120	82	49

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 %
LB281397.002	Mercury	mg/kg	0.05	0.23	0.2	80 - 120	114

OC Pesticides in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB281392.002	Delta BHC	mg/kg	0.1	0.1	0.2	60 - 140	74
	Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	76
	Aldrin	mg/kg	0.1	0.1	0.2	60 - 140	74
	Dieldrin	mg/kg	0.2	<0.2	0.2	60 - 140	74
	Endrin	mg/kg	0.2	<0.2	0.2	60 - 140	72
	p,p'-DDT	mg/kg	0.1	0.1	0.2	60 - 140	67
Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.12	0.15	40 - 130	83

OP Pesticides in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB281392.002	Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.7	2	60 - 140	83
	Diazinon (Dimpylate)	mg/kg	0.5	1.6	2	60 - 140	82
	Dichlorvos	mg/kg	0.5	1.4	2	60 - 140	71
	Ethion	mg/kg	0.2	1.7	2	60 - 140	83
Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	90
	d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	101

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB281392.002	Naphthalene	mg/kg	0.1	3.8	4	60 - 140	94
	Acenaphthylene	mg/kg	0.1	3.8	4	60 - 140	94
	Acenaphthene	mg/kg	0.1	4.1	4	60 - 140	102
	Phenanthrene	mg/kg	0.1	4.0	4	60 - 140	100
	Anthracene	mg/kg	0.1	3.9	4	60 - 140	97
	Fluoranthene	mg/kg	0.1	3.7	4	60 - 140	92
	Pyrene	mg/kg	0.1	4.3	4	60 - 140	107
	Benzo(a)pyrene	mg/kg	0.1	3.6	4	60 - 140	89
Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	92
	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	90
	d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	101

PAH (Polynuclear Aromatic Hydrocarbons) in Water

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB281260.002	Naphthalene	µg/L	0.1	37	40	60 - 140	94
	Acenaphthylene	µg/L	0.1	46	40	60 - 140	115
	Acenaphthene	µg/L	0.1	43	40	60 - 140	106
	Phenanthrene	µg/L	0.1	46	40	60 - 140	116
	Anthracene	µg/L	0.1	49	40	60 - 140	122
	Fluoranthene	µg/L	0.1	50	40	60 - 140	125
	Pyrene	µg/L	0.1	49	40	60 - 140	123
	Benzo(a)pyrene	µg/L	0.1	49	40	60 - 140	122
Surrogates	d5-nitrobenzene (Surrogate)	µg/L	-	0.3	0.5	40 - 130	52
	2-fluorobiphenyl (Surrogate)	µg/L	-	0.3	0.5	40 - 130	58
	d14-p-terphenyl (Surrogate)	µg/L	-	0.4	0.5	40 - 130	82

PCBs in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB281392.002	Arochlor 1260	mg/kg	0.2	0.3	0.4	60 - 140	79

Total Cyanide in soil by Discrete Analyser

Method: ME-(AU)-[ENV]AN077/AN287

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB281641.002	Total Cyanide	mg/kg	0.5	<0.5	0.25	70 - 130	105

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.

Total Phenolics in Soil

Method: ME-(AU)-[ENV]AN295

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB281632.002		Total Phenols	mg/kg	0.5	20	20	80 - 120	100

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 %
LB281395.002		Arsenic, As	mg/kg	1	350	318.22	80 - 120	110
		Cadmium, Cd	mg/kg	0.3	3.6	4.81	70 - 130	75
		Chromium, Cr	mg/kg	0.5	41	38.31	80 - 120	106
		Copper, Cu	mg/kg	0.5	330	290	80 - 120	114
		Nickel, Ni	mg/kg	0.5	200	187	80 - 120	105
		Lead, Pb	mg/kg	1	96	89.9	80 - 120	107
		Zinc, Zn	mg/kg	2	290	273	80 - 120	107

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB281319.002		Arsenic	µg/L	1	22	20	80 - 120	109
		Cadmium	µg/L	0.1	21	20	80 - 120	106
		Chromium	µg/L	1	22	20	80 - 120	108
		Copper	µg/L	1	21	20	80 - 120	105
		Lead	µg/L	1	20	20	80 - 120	100
		Nickel	µg/L	1	22	20	80 - 120	110
		Zinc	µg/L	5	21	20	80 - 120	105

TRH (Total Recoverable Hydrocarbons) in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB281392.002		TRH C10-C14	mg/kg	20	38	40	60 - 140	96
		TRH C15-C28	mg/kg	45	<45	40	60 - 140	82
		TRH C29-C36	mg/kg	45	<45	40	60 - 140	87
	TRH F Bands	TRH >C10-C16	mg/kg	25	38	40	60 - 140	95
		TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	83
		TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	86

TRH (Total Recoverable Hydrocarbons) in Water

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB281260.002		TRH C10-C14	µg/L	50	980	1200	60 - 140	82
		TRH C15-C28	µg/L	200	1200	1200	60 - 140	97
		TRH C29-C36	µg/L	200	1200	1200	60 - 140	97
	TRH F Bands	TRH >C10-C16	µg/L	60	1000	1200	60 - 140	87
		TRH >C16-C34 (F3)	µg/L	500	1200	1200	60 - 140	99
		TRH >C34-C40 (F4)	µg/L	500	600	600	60 - 140	100

VOC's in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB281393.002	Halogenated Aliphatics	1,1-dichloroethene	mg/kg	0.1	4.5	5	60 - 140	90
		1,2-dichloroethane	mg/kg	0.1	4.9	5	60 - 140	99
		Trichloroethene (Trichloroethylene,TCE)	mg/kg	0.1	5.0	5	60 - 140	101
	Halogenated	Chlorobenzene	mg/kg	0.1	5.6	5	60 - 140	113
	Monocyclic Aromatic	Benzene	mg/kg	0.1	4.3	5	60 - 140	87
		Toluene	mg/kg	0.1	4.5	5	60 - 140	90
		Ethylbenzene	mg/kg	0.1	4.3	5	60 - 140	87
		m/p-xylene	mg/kg	0.2	8.5	10	60 - 140	85
		o-xylene	mg/kg	0.1	4.3	5	60 - 140	86
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.9	10	70 - 130	89
		d8-toluene (Surrogate)	mg/kg	-	7.1	10	70 - 130	71
		Bromofluorobenzene (Surrogate)	mg/kg	-	9.1	10	70 - 130	91
	Trihalomethan	Chloroform (THM)	mg/kg	0.1	5.4	5	60 - 140	108

VOCs in Water

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB281645.002	Monocyclic Aromatic	Benzene	µg/L	0.5	45	45.45	60 - 140	99
		Toluene	µg/L	0.5	46	45.45	60 - 140	101
		Ethylbenzene	µg/L	0.5	46	45.45	60 - 140	102
		m/p-xylene	µg/L	1	94	90.9	60 - 140	103

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.

VOCs in Water (continued) — Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB281645.002	Monocyclic	o-xylene	µg/L	0.5	47	45.45	60 - 140	103
	Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	10.0	10	60 - 140	100
		d8-toluene (Surrogate)	µg/L	-	11.1	10	70 - 130	111
		Bromofluorobenzene (Surrogate)	µg/L	-	10.0	10	70 - 130	100

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB281393.002		TRH C6-C10	mg/kg	25	69	92.5	60 - 140	74
		TRH C6-C9	mg/kg	20	59	80	60 - 140	74
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.9	10	70 - 130	89
		Bromofluorobenzene (Surrogate)	mg/kg	-	9.1	10	70 - 130	91
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	43	62.5	60 - 140	68

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB281645.002		TRH C6-C10	µg/L	50	800	946.63	60 - 140	85
		TRH C6-C9	µg/L	40	700	818.71	60 - 140	85
	Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	10.0	10	60 - 140	100
		d8-toluene (Surrogate)	µg/L	-	11.1	10	70 - 130	111
		Bromofluorobenzene (Surrogate)	µg/L	-	10.0	10	70 - 130	100
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	µg/L	50	530	639.67	60 - 140	82

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 identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311(Perth)/AN312

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE248497.027	LB281263.004		Mercury	mg/L	0.0001	0.0018	<0.0001	0.008	90

Mercury in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE248444.031	LB281397.004		Mercury	mg/kg	0.05	0.24	<0.05	0.2	108

OC Pesticides in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE248444.031	LB281392.004		Alpha BHC	mg/kg	0.1	<0.1	<0.1	-	-
			Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	-	-
			Beta BHC	mg/kg	0.1	<0.1	<0.1	-	-
			Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	-	-
			Delta BHC	mg/kg	0.1	0.2	<0.1	0.2	78
			Heptachlor	mg/kg	0.1	0.2	<0.1	0.2	83
			Aldrin	mg/kg	0.1	0.2	<0.1	0.2	81
			Isodrin	mg/kg	0.1	<0.1	<0.1	-	-
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	-	-
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
			o,p'-DDE*	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	-	-
			Dieldrin	mg/kg	0.2	<0.2	<0.2	0.2	80
			Endrin	mg/kg	0.2	<0.2	<0.2	0.2	78
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
			o,p'-DDD*	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	-	-
			Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	-	-
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	-	-
			o,p'-DDT*	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDT	mg/kg	0.1	0.1	<0.1	0.2	70
			Endrin ketone	mg/kg	0.1	<0.1	<0.1	-	-
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	-	-
			Mirex	mg/kg	0.1	<0.1	<0.1	-	-
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	-	-
			Total CLP OC Pesticides	mg/kg	1	<1	<1	-	-
			Total OC VIC EPA	mg/kg	1	<1	<1	-	-
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.13	0.14	-	89

OP Pesticides in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE248444.031	LB281392.004		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	-	-
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	-	-
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.7	<0.2	2	85
			Diazinon (Dimpylate)	mg/kg	0.5	1.7	<0.5	2	85
			Dichlorvos	mg/kg	0.5	1.5	<0.5	2	76
			Dimethoate	mg/kg	0.5	<0.5	<0.5	-	-
			Ethion	mg/kg	0.2	1.8	<0.2	2	89
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	-	-
			Malathion	mg/kg	0.2	<0.2	<0.2	-	-
			Methidathion	mg/kg	0.5	<0.5	<0.5	-	-
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	-	-
			Total OP Pesticides*	mg/kg	1.7	6.7	<1.7	-	-
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	-	88
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	96

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR

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 identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE248444.031	LB281392.004		Naphthalene	mg/kg	0.1	3.6	<0.1	4	90
			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	3.6	<0.1	4	90
			Acenaphthene	mg/kg	0.1	3.9	<0.1	4	97
			Fluorene	mg/kg	0.1	<0.1	<0.1	-	-
			Phenanthrene	mg/kg	0.1	3.8	<0.1	4	96
			Anthracene	mg/kg	0.1	3.7	<0.1	4	91
			Fluoranthene	mg/kg	0.1	3.5	<0.1	4	89
			Pyrene	mg/kg	0.1	3.9	<0.1	4	98
			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	3.4	<0.1	4	86
			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	3.4	<0.2	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	3.5	<0.2	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	3.6	<0.3	-	-
			Total PAH (18)	mg/kg	0.8	29	<0.8	-	-
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	-	91
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	-	88
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	96

Total Phenolics in Soil

Method: ME-(AU)-[ENV]AN295

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE248373.021	LB281632.004	Total Phenols	mg/kg	0.5	22	0.5	20	107
SE248436.001	LB281632.011	Total Phenols	mg/kg	0.5	21	<0.5	20	105

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%
SE248444.031	LB281395.004	Arsenic, As	mg/kg	1	46	3	50	87
		Cadmium, Cd	mg/kg	0.3	44	<0.3	50	88
		Chromium, Cr	mg/kg	0.5	57	11	50	92
		Copper, Cu	mg/kg	0.5	57	12	50	91
		Nickel, Ni	mg/kg	0.5	48	3.4	50	89
		Lead, Pb	mg/kg	1	51	10	50	83
		Zinc, Zn	mg/kg	2	59	13	50	93

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE248497.027	LB281319.004	Arsenic	μg/L	1	22	<1	20	109
		Cadmium	μg/L	0.1	21	<0.1	20	106
		Chromium	μg/L	1	22	<1	20	108
		Copper	μg/L	1	21	<1	20	105
		Lead	μg/L	1	20	<1	20	101
		Nickel	μg/L	1	21	<1	20	107
		Zinc	μg/L	5	23	<5	20	96

TRH (Total Recoverable Hydrocarbons) in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE248444.031	LB281392.004		TRH C10-C14	mg/kg	20	42	<20	40	105
			TRH C15-C28	mg/kg	45	<45	<45	40	100
			TRH C29-C36	mg/kg	45	55	<45	40	109
			TRH C37-C40	mg/kg	100	<100	<100	-	-
			TRH C10-C36 Total	mg/kg	110	<110	<110	-	-
			TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	-	-
		TRH F Bands	TRH >C10-C16	mg/kg	25	41	<25	40	103
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	41	<25	-	-

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 identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

TRH (Total Recoverable Hydrocarbons) in Soil (continued)

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE248444.031	LB281392.004	TRH F Bands	TRH >C16-C34 (F3)	mg/kg	90	<90	<90	40	111
			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%
SE248444.031	LB281393.004	Monocyclic Aromatic	Benzene	mg/kg	0.1	4.2	<0.1	5	83
			Toluene	mg/kg	0.1	4.4	<0.1	5	87
			Ethylbenzene	mg/kg	0.1	4.5	<0.1	5	90
			m/p-xylene	mg/kg	0.2	9.1	<0.2	10	91
			o-xylene	mg/kg	0.1	4.6	<0.1	5	92
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.9	7.8	10	79
			d8-toluene (Surrogate)	mg/kg	-	8.0	8.1	10	80
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.4	8.9	10	84
		Totals	Total BTEX*	mg/kg	0.6	27	<0.6	-	-
			Total Xylenes*	mg/kg	0.3	14	<0.3	-	-

VOCs in Water

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE248508.001	LB281645.028	Monocyclic Aromatic	Benzene	μg/L	0.5	46	<0.5	45.45	101
			Toluene	μg/L	0.5	45	<0.5	45.45	100
			Ethylbenzene	μg/L	0.5	47	<0.5	45.45	104
			m/p-xylene	μg/L	1	92	<1	90.9	102
			o-xylene	μg/L	0.5	47	<0.5	45.45	102
		Polycyclic	Naphthalene (VOC)*	μg/L	0.5	47	<0.5	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	μg/L	-	9.3	10.8	-	93
			d8-toluene (Surrogate)	μg/L	-	11.0	9.8	-	110
			Bromofluorobenzene (Surrogate)	μg/L	-	9.5	11.2	-	95
		Totals	Total BTEX	μg/L	3	280	<3	-	-

Volatile Petroleum Hydrocarbons in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE248444.031	LB281393.005		TRH C6-C10	mg/kg	25	84	<25	92.5	90
			TRH C6-C9	mg/kg	20	74	<20	80	93
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.9	7.8	10	79
			d8-toluene (Surrogate)	mg/kg	-	8.0	8.1	10	80
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.4	8.9	-	84
		VPH F Bands	Benzene (F0)	mg/kg	0.1	4.2	<0.1	-	-
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	57	<25	62.5	91

Volatile Petroleum Hydrocarbons in Water

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE248508.001	LB281645.028		TRH C6-C10	μg/L	50	1000	<50	946.63	105
			TRH C6-C9	μg/L	40	860	<40	818.71	105
		Surrogates	d4-1,2-dichloroethane (Surrogate)	μg/L	-	0.0	10.8	-	93
			d8-toluene (Surrogate)	μg/L	-	0.0	9.8	-	110
			Bromofluorobenzene (Surrogate)	μg/L	-	0.0	11.2	-	95
		VPH F Bands	Benzene (F0)	μg/L	0.5		<0.5	-	-
			TRH C6-C10 minus BTEX (F1)	μg/L	50	720	<50	639.67	112

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 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 x 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 identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

QC Sample	Sample Number	Parameter	Units	LOR

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.

STATEMENT OF QA/QC PERFORMANCE

SE248519 R0

CLIENT DETAILS

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Project	**E26047 19 Hope Street, Melrose Park**
Order Number	**E26047**
Samples	6

LABORATORY DETAILS

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SGS Reference	**SE248519 R0**
Date Received	31 May 2023
Date Reported	08 Jun 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:

Extraction Date	pH in water	3 items
	Turbidity	3 items
Duplicate	VOCs in Water	1 item
	Volatile Petroleum Hydrocarbons in Water	1 item

SAMPLE SUMMARY

Sample counts by matrix	6 Water	Type of documentation received	COC
Date documentation received	1/6/2023@3:08pm	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	17.2C
Sample container provider	SGS	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		

HOLDING TIME SUMMARY

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.

Conductivity and TDS by Calculation - Water

Method: ME-(AU)-[ENV]AN106

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GWBH1M	SE248519.001	LB281217	31 May 2023	31 May 2023	28 Jun 2023	02 Jun 2023	28 Jun 2023	01 Jun 2023
GWBH2M	SE248519.002	LB281217	31 May 2023	31 May 2023	28 Jun 2023	02 Jun 2023	28 Jun 2023	01 Jun 2023
GWBH3M	SE248519.003	LB281217	31 May 2023	31 May 2023	28 Jun 2023	02 Jun 2023	28 Jun 2023	01 Jun 2023

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311(Perth)/AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GWBH1M	SE248519.001	LB281263	31 May 2023	31 May 2023	28 Jun 2023	02 Jun 2023	28 Jun 2023	02 Jun 2023
GWBH2M	SE248519.002	LB281263	31 May 2023	31 May 2023	28 Jun 2023	02 Jun 2023	28 Jun 2023	02 Jun 2023
GWBH3M	SE248519.003	LB281263	31 May 2023	31 May 2023	28 Jun 2023	02 Jun 2023	28 Jun 2023	02 Jun 2023
QD1	SE248519.004	LB281263	31 May 2023	31 May 2023	28 Jun 2023	02 Jun 2023	28 Jun 2023	02 Jun 2023

Metals in Water (Dissolved) by ICPOES

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GWBH1M	SE248519.001	LB281250	31 May 2023	31 May 2023	27 Nov 2023	02 Jun 2023	27 Nov 2023	02 Jun 2023
GWBH2M	SE248519.002	LB281250	31 May 2023	31 May 2023	27 Nov 2023	02 Jun 2023	27 Nov 2023	02 Jun 2023
GWBH3M	SE248519.003	LB281250	31 May 2023	31 May 2023	27 Nov 2023	02 Jun 2023	27 Nov 2023	02 Jun 2023

PAH (Polynuclear Aromatic Hydrocarbons) in Water

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GWBH1M	SE248519.001	LB281260	31 May 2023	31 May 2023	07 Jun 2023	02 Jun 2023	12 Jul 2023	08 Jun 2023
GWBH2M	SE248519.002	LB281260	31 May 2023	31 May 2023	07 Jun 2023	02 Jun 2023	12 Jul 2023	08 Jun 2023
GWBH3M	SE248519.003	LB281260	31 May 2023	31 May 2023	07 Jun 2023	02 Jun 2023	12 Jul 2023	08 Jun 2023
QD1	SE248519.004	LB281260	31 May 2023	31 May 2023	07 Jun 2023	02 Jun 2023	12 Jul 2023	08 Jun 2023

pH in water

Method: ME-(AU)-[ENV]AN101

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GWBH1M	SE248519.001	LB281217	31 May 2023	31 May 2023	01 Jun 2023	02 Jun 2023†	01 Jun 2023	01 Jun 2023
GWBH2M	SE248519.002	LB281217	31 May 2023	31 May 2023	01 Jun 2023	02 Jun 2023†	01 Jun 2023	01 Jun 2023
GWBH3M	SE248519.003	LB281217	31 May 2023	31 May 2023	01 Jun 2023	02 Jun 2023†	01 Jun 2023	01 Jun 2023

Total Cyanide in water by Discrete Analyser

Method: ME-(AU)-[ENV]AN077/AN287

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GWBH1M	SE248519.001	LB281273	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	14 Jun 2023	02 Jun 2023
GWBH2M	SE248519.002	LB281273	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	14 Jun 2023	02 Jun 2023
GWBH3M	SE248519.003	LB281273	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	14 Jun 2023	02 Jun 2023

Total Dissolved Solids (TDS) in water

Method: ME-(AU)-[ENV]AN113

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GWBH1M	SE248519.001	LB281425	31 May 2023	31 May 2023	07 Jun 2023	05 Jun 2023	07 Jun 2023	06 Jun 2023
GWBH2M	SE248519.002	LB281425	31 May 2023	31 May 2023	07 Jun 2023	05 Jun 2023	07 Jun 2023	06 Jun 2023
GWBH3M	SE248519.003	LB281425	31 May 2023	31 May 2023	07 Jun 2023	05 Jun 2023	07 Jun 2023	06 Jun 2023

Total Phenolics in Water

Method: ME-(AU)-[ENV]AN295

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GWBH1M	SE248519.001	LB281341	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	14 Jun 2023	05 Jun 2023
GWBH2M	SE248519.002	LB281341	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	14 Jun 2023	05 Jun 2023
GWBH3M	SE248519.003	LB281341	31 May 2023	31 May 2023	14 Jun 2023	02 Jun 2023	14 Jun 2023	05 Jun 2023

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GWBH1M	SE248519.001	LB281319	31 May 2023	31 May 2023	27 Nov 2023	02 Jun 2023	27 Nov 2023	05 Jun 2023
GWBH2M	SE248519.002	LB281319	31 May 2023	31 May 2023	27 Nov 2023	02 Jun 2023	27 Nov 2023	05 Jun 2023
GWBH3M	SE248519.003	LB281319	31 May 2023	31 May 2023	27 Nov 2023	02 Jun 2023	27 Nov 2023	05 Jun 2023
QD1	SE248519.004	LB281319	31 May 2023	31 May 2023	27 Nov 2023	02 Jun 2023	27 Nov 2023	05 Jun 2023

TRH (Total Recoverable Hydrocarbons) in Water

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GWBH1M	SE248519.001	LB281260	31 May 2023	31 May 2023	07 Jun 2023	02 Jun 2023	12 Jul 2023	08 Jun 2023
GWBH2M	SE248519.002	LB281260	31 May 2023	31 May 2023	07 Jun 2023	02 Jun 2023	12 Jul 2023	08 Jun 2023
GWBH3M	SE248519.003	LB281260	31 May 2023	31 May 2023	07 Jun 2023	02 Jun 2023	12 Jul 2023	08 Jun 2023
QD1	SE248519.004	LB281260	31 May 2023	31 May 2023	07 Jun 2023	02 Jun 2023	12 Jul 2023	08 Jun 2023

Turbidity

Method: ME-(AU)-[ENV]AN119

Sample Name	Sample No.	QC Ref

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.

Turbidity (continued) — Method: ME-(AU)-[ENV]AN119

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GWBH1M	SE248519.001	LB281242	31 May 2023	31 May 2023	01 Jun 2023	02 Jun 2023†	01 Jun 2023	01 Jun 2023
GWBH2M	SE248519.002	LB281242	31 May 2023	31 May 2023	01 Jun 2023	02 Jun 2023†	01 Jun 2023	01 Jun 2023
GWBH3M	SE248519.003	LB281242	31 May 2023	31 May 2023	01 Jun 2023	02 Jun 2023†	01 Jun 2023	01 Jun 2023

VOCs in Water — Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GWBH1M	SE248519.001	LB281443	31 May 2023	31 May 2023	14 Jun 2023	05 Jun 2023	14 Jun 2023	06 Jun 2023
GWBH2M	SE248519.002	LB281443	31 May 2023	31 May 2023	14 Jun 2023	05 Jun 2023	14 Jun 2023	06 Jun 2023
GWBH3M	SE248519.003	LB281443	31 May 2023	31 May 2023	14 Jun 2023	05 Jun 2023	14 Jun 2023	06 Jun 2023
QD1	SE248519.004	LB281443	31 May 2023	31 May 2023	14 Jun 2023	05 Jun 2023	14 Jun 2023	06 Jun 2023
Trip blank	SE248519.005	LB281443	31 May 2023	31 May 2023	14 Jun 2023	05 Jun 2023	14 Jun 2023	06 Jun 2023
Trip Spike	SE248519.006	LB281443	31 May 2023	31 May 2023	14 Jun 2023	05 Jun 2023	14 Jun 2023	06 Jun 2023

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GWBH1M	SE248519.001	LB281443	31 May 2023	31 May 2023	14 Jun 2023	05 Jun 2023	14 Jun 2023	06 Jun 2023
GWBH2M	SE248519.002	LB281443	31 May 2023	31 May 2023	14 Jun 2023	05 Jun 2023	14 Jun 2023	06 Jun 2023
GWBH3M	SE248519.003	LB281443	31 May 2023	31 May 2023	14 Jun 2023	05 Jun 2023	14 Jun 2023	06 Jun 2023
QD1	SE248519.004	LB281443	31 May 2023	31 May 2023	14 Jun 2023	05 Jun 2023	14 Jun 2023	06 Jun 2023
Trip blank	SE248519.005	LB281443	31 May 2023	31 May 2023	14 Jun 2023	05 Jun 2023	14 Jun 2023	08 Jun 2023
Trip Spike	SE248519.006	LB281443	31 May 2023	31 May 2023	14 Jun 2023	05 Jun 2023	14 Jun 2023	08 Jun 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 identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PAH (Polynuclear Aromatic Hydrocarbons) in Water

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	GWBH1M	SE248519.001	%	40 - 130%	59
	GWBH2M	SE248519.002	%	40 - 130%	56
	GWBH3M	SE248519.003	%	40 - 130%	61
d14-p-terphenyl (Surrogate)	GWBH1M	SE248519.001	%	40 - 130%	93
	GWBH2M	SE248519.002	%	40 - 130%	75
	GWBH3M	SE248519.003	%	40 - 130%	86
d5-nitrobenzene (Surrogate)	GWBH1M	SE248519.001	%	40 - 130%	50
	GWBH2M	SE248519.002	%	40 - 130%	54
	GWBH3M	SE248519.003	%	40 - 130%	57

Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples

Method: MA-1523

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
(13C2_PFTeDA) Isotopically Labelled Internal Recovery Standard	GWBH1M	SE248519.001	%	10 - 150%	98
	GWBH2M	SE248519.002	%	10 - 150%	134
	GWBH3M	SE248519.003	%	10 - 150%	82
(13C2-4:2 FTS) Isotopically Labelled Internal Recovery Standard	GWBH1M	SE248519.001	%	10 - 150%	93
	GWBH2M	SE248519.002	%	10 - 150%	77
	GWBH3M	SE248519.003	%	10 - 150%	86
(13C2-6:2 FTS) Isotopically Labelled Internal Recovery Standard	GWBH1M	SE248519.001	%	10 - 150%	101
	GWBH2M	SE248519.002	%	10 - 150%	81
	GWBH3M	SE248519.003	%	10 - 150%	93
(13C2-8:2 FTS) Isotopically Labelled Internal Recovery Standard	GWBH1M	SE248519.001	%	10 - 150%	88
	GWBH2M	SE248519.002	%	10 - 150%	79
	GWBH3M	SE248519.003	%	10 - 150%	83
(13C2-PFDoA) Isotopically Labelled Internal Recovery Standard	GWBH1M	SE248519.001	%	10 - 150%	78
	GWBH2M	SE248519.002	%	10 - 150%	92
	GWBH3M	SE248519.003	%	10 - 150%	87
(13C2-PFHxDA) Isotopically Labelled Internal Recovery Standard	GWBH1M	SE248519.001	%	10 - 150%	87
	GWBH2M	SE248519.002	%	10 - 150%	120
	GWBH3M	SE248519.003	%	10 - 150%	62
(13C3-PFBS) Isotopically Labelled Internal Recovery Standard	GWBH1M	SE248519.001	%	10 - 150%	95
	GWBH2M	SE248519.002	%	10 - 150%	91
	GWBH3M	SE248519.003	%	10 - 150%	91
(13C3-PFHxS) Isotopically Labelled Internal Recovery Standard	GWBH1M	SE248519.001	%	10 - 150%	92
	GWBH2M	SE248519.002	%	10 - 150%	96
	GWBH3M	SE248519.003	%	10 - 150%	92
(13C4_PFOA) Isotopically Labelled Internal Recovery Standard	GWBH1M	SE248519.001	%	10 - 150%	88
	GWBH2M	SE248519.002	%	10 - 150%	96
	GWBH3M	SE248519.003	%	10 - 150%	86
(13C4-PFBA) Isotopically Labelled Internal Recovery Standard	GWBH1M	SE248519.001	%	10 - 150%	91
	GWBH2M	SE248519.002	%	10 - 150%	92
	GWBH3M	SE248519.003	%	10 - 150%	93
(13C4-PFHpA) Isotopically Labelled Internal Recovery Standard	GWBH1M	SE248519.001	%	10 - 150%	93
	GWBH2M	SE248519.002	%	10 - 150%	91
	GWBH3M	SE248519.003	%	10 - 150%	89
(13C5-PFHxA) Isotopically Labelled Internal Recovery Standard	GWBH1M	SE248519.001	%	10 - 150%	91
	GWBH2M	SE248519.002	%	10 - 150%	94
	GWBH3M	SE248519.003	%	10 - 150%	84
(13C5-PFPeA) Isotopically Labelled Internal Recovery Standard	GWBH1M	SE248519.001	%	10 - 150%	83
	GWBH2M	SE248519.002	%	10 - 150%	87
	GWBH3M	SE248519.003	%	10 - 150%	85
(13C6-PFDA) Isotopically Labelled Internal Recovery Standard	GWBH1M	SE248519.001	%	10 - 150%	80
	GWBH2M	SE248519.002	%	10 - 150%	99
	GWBH3M	SE248519.003	%	10 - 150%	93
(13C7-PFUdA) Isotopically Labelled Internal Recovery Standard	GWBH1M	SE248519.001	%	10 - 150%	73
	GWBH2M	SE248519.002	%	10 - 150%	84
	GWBH3M	SE248519.003	%	10 - 150%	83
(13C8-PFOS) Isotopically Labelled Internal Recovery Standard	GWBH1M	SE248519.001	%	10 - 150%	76
	GWBH2M	SE248519.002	%	10 - 150%	87
	GWBH3M	SE248519.003	%	10 - 150%	93
(13C8-PFOSA) Isotopically Labelled Internal Recovery Standard	GWBH1M	SE248519.001	%	10 - 150%	83

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 identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous Samples (continued)

Method: MA-1523

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
(13C8-PFOSA) Isotopically Labelled Internal Recovery Standard	GWBH2M	SE248519.002	%	10 - 150%	79
	GWBH3M	SE248519.003	%	10 - 150%	97
(13C9-PFNA) Isotopically Labelled Internal Recovery Standard	GWBH1M	SE248519.001	%	10 - 150%	88
	GWBH2M	SE248519.002	%	10 - 150%	100
	GWBH3M	SE248519.003	%	10 - 150%	85
(D3-N-MeFOSA) Isotopically Labelled Internal Recovery Standard	GWBH1M	SE248519.001	%	10 - 150%	76
	GWBH2M	SE248519.002	%	10 - 150%	76
	GWBH3M	SE248519.003	%	10 - 150%	65
(D3-N-MeFOSAA) Isotopically Labelled Internal Recovery Standard	GWBH1M	SE248519.001	%	10 - 150%	88
	GWBH2M	SE248519.002	%	10 - 150%	81
	GWBH3M	SE248519.003	%	10 - 150%	92
(D5-N-EtFOSA) Isotopically Labelled Internal Recovery Standard	GWBH1M	SE248519.001	%	10 - 150%	83
	GWBH2M	SE248519.002	%	10 - 150%	79
	GWBH3M	SE248519.003	%	10 - 150%	65
(D5-N-EtFOSAA) Isotopically Labelled Internal Recovery Standard	GWBH1M	SE248519.001	%	10 - 150%	69
	GWBH2M	SE248519.002	%	10 - 150%	74
	GWBH3M	SE248519.003	%	10 - 150%	90
(D7-N-MeFOSE) Isotopically Labelled Internal Recovery Standard	GWBH1M	SE248519.001	%	10 - 150%	84
	GWBH2M	SE248519.002	%	10 - 150%	65
	GWBH3M	SE248519.003	%	10 - 150%	82
(D9-N-EtFOSE) Isotopically Labelled Internal Recovery Standard	GWBH1M	SE248519.001	%	10 - 150%	82
	GWBH2M	SE248519.002	%	10 - 150%	71
	GWBH3M	SE248519.003	%	10 - 150%	88

VOCs in Water

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	GWBH1M	SE248519.001	%	40 - 130%	105
	GWBH2M	SE248519.002	%	40 - 130%	106
	GWBH3M	SE248519.003	%	40 - 130%	75
	QD1	SE248519.004	%	40 - 130%	104
	Trip blank	SE248519.005	%	40 - 130%	95
	Trip Spike	SE248519.006	%	40 - 130%	120
d4-1,2-dichloroethane (Surrogate)	GWBH1M	SE248519.001	%	40 - 130%	97
	GWBH2M	SE248519.002	%	40 - 130%	92
	GWBH3M	SE248519.003	%	40 - 130%	97
	QD1	SE248519.004	%	40 - 130%	94
	Trip blank	SE248519.005	%	40 - 130%	102
	Trip Spike	SE248519.006	%	40 - 130%	104
d8-toluene (Surrogate)	GWBH1M	SE248519.001	%	40 - 130%	75
	GWBH2M	SE248519.002	%	40 - 130%	77
	GWBH3M	SE248519.003	%	40 - 130%	105
	QD1	SE248519.004	%	40 - 130%	76
	Trip blank	SE248519.005	%	40 - 130%	75
	Trip Spike	SE248519.006	%	40 - 130%	83

Volatile Petroleum Hydrocarbons in Water

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	GWBH1M	SE248519.001	%	40 - 130%	105
	GWBH2M	SE248519.002	%	40 - 130%	106
	GWBH3M	SE248519.003	%	40 - 130%	75
	QD1	SE248519.004	%	40 - 130%	104
d4-1,2-dichloroethane (Surrogate)	GWBH1M	SE248519.001	%	60 - 130%	97
	GWBH2M	SE248519.002	%	60 - 130%	92
	GWBH3M	SE248519.003	%	60 - 130%	97
	QD1	SE248519.004	%	60 - 130%	94
d8-toluene (Surrogate)	GWBH1M	SE248519.001	%	40 - 130%	75
	GWBH2M	SE248519.002	%	40 - 130%	77
	GWBH3M	SE248519.003	%	40 - 130%	105
	QD1	SE248519.004	%	40 - 130%	76

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.

Conductivity and TDS by Calculation - Water

Method: ME-(AU)-[ENV]AN106

Sample Number	Parameter	Units	LOR	Result
LB281217.001	Conductivity @ 25 C	µS/cm	2	<2

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311(Perth)/AN312

Sample Number	Parameter	Units	LOR	Result
LB281263.001	Mercury	mg/L	0.0001	<0.0001

Metals in Water (Dissolved) by ICPOES

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

Sample Number	Parameter	Units	LOR	Result
LB281250.001	Calcium, Ca	mg/L	0.2	<0.2
	Magnesium, Mg	mg/L	0.1	<0.1

PAH (Polynuclear Aromatic Hydrocarbons) in Water

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

Sample Number		Parameter	Units	LOR	Result
LB281260.001		Naphthalene	µg/L	0.1	<0.1
		2-methylnaphthalene	µg/L	0.1	<0.1
		1-methylnaphthalene	µg/L	0.1	<0.1
		Acenaphthylene	µg/L	0.1	<0.1
		Acenaphthene	µg/L	0.1	<0.1
		Fluorene	µg/L	0.1	<0.1
		Phenanthrene	µg/L	0.1	<0.1
		Anthracene	µg/L	0.1	<0.1
		Fluoranthene	µg/L	0.1	<0.1
		Pyrene	µg/L	0.1	<0.1
		Benzo(a)anthracene	µg/L	0.1	<0.1
		Chrysene	µg/L	0.1	<0.1
		Benzo(b&j&k)fluoranthene	µg/L	0.2	<0.2
		Benzo(a)pyrene	µg/L	0.1	<0.1
		Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1
		Dibenzo(ah)anthracene	µg/L	0.1	<0.1
		Benzo(ghi)perylene	µg/L	0.1	<0.1
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	50
		2-fluorobiphenyl (Surrogate)	%	-	54
		d14-p-terphenyl (Surrogate)	%	-	74

Total Cyanide in water by Discrete Analyser

Method: ME-(AU)-[ENV]AN077/AN287

Sample Number	Parameter	Units	LOR	Result
LB281273.001	Total Cyanide	mg/L	0.004	<0.004

Total Dissolved Solids (TDS) in water

Method: ME-(AU)-[ENV]AN113

Sample Number	Parameter	Units	LOR	Result
LB281425.001	Total Dissolved Solids Dried at 175-185°C	mg/L	10	<10

Total Phenolics in Water

Method: ME-(AU)-[ENV]AN295

Sample Number	Parameter	Units	LOR	Result
LB281341.001	Total Phenols	mg/L	0.05	<0.05

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Number	Parameter	Units	LOR	Result
LB281319.001	Aluminium	µg/L	5	<5
	Arsenic	µg/L	1	<1
	Cadmium	µg/L	0.1	<0.1
	Chromium	µg/L	1	<1
	Copper	µg/L	1	<1

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.

Trace Metals (Dissolved) in Water by ICPMS (continued) Method: ME-(AU)-[ENV]AN318

Sample Number	Parameter	Units	LOR	Result
LB281319.001	Lead	µg/L	1	<1
	Nickel	µg/L	1	<1
	Zinc	µg/L	5	<5

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

Sample Number	Parameter	Units	LOR	Result
LB281260.001	TRH C10-C14	µg/L	50	<50
	TRH C15-C28	µg/L	200	<200
	TRH C29-C36	µg/L	200	<200
	TRH C37-C40	µg/L	200	<200

Turbidity Method: ME-(AU)-[ENV]AN119

Sample Number	Parameter	Units	LOR	Result
LB281242.001	Turbidity	NTU	0.5	<0.5

VOCs in Water Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB281443.001	Fumigants	2,2-dichloropropane	µg/L	0.5	<0.5
		1,2-dichloropropane	µg/L	0.5	<0.5
		cis-1,3-dichloropropene	µg/L	0.5	<0.5
		trans-1,3-dichloropropene	µg/L	0.5	<0.5
		1,2-dibromoethane (EDB)	µg/L	0.5	<0.5
	Halogenated Aliphatics	Dichlorodifluoromethane (CFC-12)	µg/L	5	<5
		Chloromethane	µg/L	5	<5
		Vinyl chloride (Chloroethene)	µg/L	0.3	<0.3
		Bromomethane	µg/L	10	<10
		Chloroethane	µg/L	5	<5
		Trichlorofluoromethane	µg/L	1	<1
		1,1-dichloroethene	µg/L	0.5	<0.5
		Iodomethane	µg/L	5	<5
		Dichloromethane (Methylene chloride)	µg/L	5	<5
		Allyl chloride	µg/L	2	<2
		trans-1,2-dichloroethene	µg/L	0.5	<0.5
		1,1-dichloroethane	µg/L	0.5	<0.5
		cis-1,2-dichloroethene	µg/L	0.5	<0.5
		Bromochloromethane	µg/L	0.5	<0.5
		1,2-dichloroethane	µg/L	0.5	<0.5
		1,1,1-trichloroethane	µg/L	0.5	<0.5
		1,1-dichloropropene	µg/L	0.5	<0.5
		Carbon tetrachloride	µg/L	0.5	<0.5
		Dibromomethane	µg/L	0.5	<0.5
		Trichloroethene (Trichloroethylene,TCE)	µg/L	0.5	<0.5
		1,1,2-trichloroethane	µg/L	0.5	<0.5
		1,3-dichloropropane	µg/L	0.5	<0.5
		Tetrachloroethene (Perchloroethylene,PCE)	µg/L	0.5	<0.5
		1,1,1,2-tetrachloroethane	µg/L	0.5	<0.5
		1,1,2,2-tetrachloroethane	µg/L	0.5	<0.5
		1,2,3-trichloropropane	µg/L	0.5	<0.5
		trans-1,4-dichloro-2-butene	µg/L	1	<1
		1,2-dibromo-3-chloropropane	µg/L	0.5	<0.5
		Hexachlorobutadiene	µg/L	0.5	<0.5
	Halogenated Aromatics	Chlorobenzene	µg/L	0.5	<0.5
		Bromobenzene	µg/L	0.5	<0.5
		2-chlorotoluene	µg/L	0.5	<0.5
		4-chlorotoluene	µg/L	0.5	<0.5
		1,3-dichlorobenzene	µg/L	0.5	<0.5
		1,4-dichlorobenzene	µg/L	0.3	<0.3
		1,2-dichlorobenzene	µg/L	0.5	<0.5
		1,2,4-trichlorobenzene	µg/L	0.5	<0.5
		1,2,3-trichlorobenzene	µg/L	0.5	<0.5

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.

VOCs in Water (continued) Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB281443.001	Monocyclic Aromatic Hydrocarbons	Benzene	µg/L	0.5	<0.5
		Toluene	µg/L	0.5	<0.5
		Ethylbenzene	µg/L	0.5	<0.5
		m/p-xylene	µg/L	1	<1
		Styrene (Vinyl benzene)	µg/L	0.5	<0.5
		o-xylene	µg/L	0.5	<0.5
		Isopropylbenzene (Cumene)	µg/L	0.5	<0.5
		n-propylbenzene	µg/L	0.5	<0.5
		1,3,5-trimethylbenzene	µg/L	0.5	<0.5
		tert-butylbenzene	µg/L	0.5	<0.5
		1,2,4-trimethylbenzene	µg/L	0.5	<0.5
		sec-butylbenzene	µg/L	0.5	<0.5
		p-isopropyltoluene	µg/L	0.5	<0.5
		n-butylbenzene	µg/L	0.5	<0.5
	Nitrogenous Compounds	Acrylonitrile	µg/L	0.5	<0.5
	Oxygenated Compounds	Acetone (2-propanone)	µg/L	10	<10
		MtBE (Methyl-tert-butyl ether)	µg/L	2	<2
		Vinyl acetate*	µg/L	10	<10
		MEK (2-butanone)	µg/L	10	<10
		MIBK (4-methyl-2-pentanone)	µg/L	5	<5
		2-hexanone (MBK)	µg/L	5	<5
	Polycyclic VOCs	Naphthalene (VOC)*	µg/L	0.5	<0.5
	Sulphonated	Carbon disulfide	µg/L	2	<2
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	93
		d8-toluene (Surrogate)	%	-	87
		Bromofluorobenzene (Surrogate)	%	-	98
	Trihalomethanes	Chloroform (THM)	µg/L	0.5	<0.5
		Bromodichloromethane (THM)	µg/L	0.5	<0.5
		Dibromochloromethane (THM)	µg/L	0.5	<0.5
		Bromoform (THM)	µg/L	0.5	<0.5

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

Sample Number		Parameter	Units	LOR	Result
LB281443.001		TRH C6-C9	µg/L	40	<40
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	93
		d8-toluene (Surrogate)	%	-	87
		Bromofluorobenzene (Surrogate)	%	-	98

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 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 x 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 identifer 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.

Conductivity and TDS by Calculation - Water

Method: ME-(AU)-[ENV]AN106

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248513.001	LB281217.008	Conductivity @ 25 C	µS/cm	2	30000	30000	15	2
SE248519.002	LB281217.012	Conductivity @ 25 C	µS/cm	2	2900	2800	15	4

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311(Perth)/AN312

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248519.002	LB281263.014	Mercury	µg/L	0.0001	<0.0001	<0.0001	200	195
SE248520.008	LB281263.018	Mercury	µg/L	0.0001	<0.0001	<0.0001	200	0

Metals in Water (Dissolved) by ICPOES

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248519.003	LB281250.009	Calcium, Ca	mg/L	0.2	1.1	1.1	34	2
		Magnesium, Mg	mg/L	0.1	2.5	2.6	19	1

pH in water

Method: ME-(AU)-[ENV]AN101

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248513.001	LB281217.008	pH**	pH Units	0.1	6.6	6.7	17	0

Total Dissolved Solids (TDS) in water

Method: ME-(AU)-[ENV]AN113

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248539.002	LB281425.013	Total Dissolved Solids Dried at 175-185°C	mg/L	10	930	960	16	4
SE248560.001	LB281425.024	Total Dissolved Solids Dried at 175-185°C	mg/L	10	2800	2800	15	1

Total Phenolics in Water

Method: ME-(AU)-[ENV]AN295

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248519.003	LB281341.014	Total Phenols	mg/L	0.05	<0.05	<0.05	200	0
SE248539.008	LB281341.023	Total Phenols	mg/L	0.05	<0.05	<0.05	200	0

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248519.003	LB281319.014	Aluminium	µg/L	5	69	70	22	1
		Arsenic	µg/L	1	1	1	87	0
		Cadmium	µg/L	0.1	<0.1	<0.1	200	0
		Chromium	µg/L	1	1	1	101	3
		Copper	µg/L	1	<1	<1	169	0
		Lead	µg/L	1	<1	<1	200	0
		Nickel	µg/L	1	7	7	28	0
		Zinc	µg/L	5	14	14	51	2
SE248562.001	LB281319.018	Aluminium	µg/L	5	57	69	23	18
		Arsenic	µg/L	1	<1	<1	165	0
		Cadmium	µg/L	0.1	<0.1	<0.1	200	0
		Chromium	µg/L	1	1	1	100	2
		Copper	µg/L	1	2	2	81	2
		Lead	µg/L	1	<1	<1	200	0
		Nickel	µg/L	1	1	1	84	0
		Zinc	µg/L	5	<5	<5	200	0

TRH (Total Recoverable Hydrocarbons) in Water

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248418.001	LB281260.028		TRH C10-C14	µg/L	50	<0.05	<0.05	200	0
			TRH C15-C28	µg/L	200	<0.2	<0.2	200	0
			TRH C29-C36	µg/L	200	<0.2	<0.2	200	0
			TRH C37-C40	µg/L	200	<200	<200	200	0
			TRH C10-C40	µg/L	320	<0.32	<0.32	200	0
		TRH F Bands	TRH >C10-C16	µg/L	60	<0.06	<0.06	200	0
			TRH >C10-C16 - Naphthalene (F2)	µg/L	60	<0.06	<0.06	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 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 x 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 identifer 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.

TRH (Total Recoverable Hydrocarbons) in Water (continued)

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248418.001	LB281260.028	TRH F Bands	TRH >C16-C34 (F3)	µg/L	500	<0.5	<0.5	200	0
			TRH >C34-C40 (F4)	µg/L	500	<0.5	<0.5	200	0
SE248519.004	LB281260.029		TRH C10-C14	µg/L	50	<50	<50	200	0
			TRH C15-C28	µg/L	200	<200	<200	200	0
			TRH C29-C36	µg/L	200	<200	<200	200	0
			TRH C37-C40	µg/L	200	<200	<200	200	0
			TRH C10-C40	µg/L	320	<320	<320	200	0
		TRH F Bands	TRH >C10-C16	µg/L	60	<60	<60	200	0
			TRH >C10-C16 - Naphthalene (F2)	µg/L	60	<60	<60	200	0
			TRH >C16-C34 (F3)	µg/L	500	<500	<500	200	0
			TRH >C34-C40 (F4)	µg/L	500	<500	<500	200	0

Turbidity

Method: ME-(AU)-[ENV]AN119

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248506.001	LB281242.006		Turbidity	NTU	0.5	370	360	15	0

VOCs in Water

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248519.002	LB281443.032	Fumigants	2,2-dichloropropane	µg/L	0.5	<0.5	0	200	0
			1,2-dichloropropane	µg/L	0.5	<0.5	0	200	0
			cis-1,3-dichloropropene	µg/L	0.5	<0.5	0	200	0
			trans-1,3-dichloropropene	µg/L	0.5	<0.5	0	200	0
			1,2-dibromoethane (EDB)	µg/L	0.5	<0.5	0	200	0
		Halogenated Aliphatics	Dichlorodifluoromethane (CFC-12)	µg/L	5	<5	0.0089995364	200	0
			Chloromethane	µg/L	5	<5	0.2222442566	200	0
			Vinyl chloride (Chloroethene)	µg/L	0.3	<0.3	0.0155165099	200	0
			Bromomethane	µg/L	10	<10	0.3035374770	200	0
			Chloroethane	µg/L	5	<5	0.0231477173	200	0
			Trichlorofluoromethane	µg/L	1	<1	0.0024099484	200	0
			1,1-dichloroethene	µg/L	0.5	<0.5	0.0088442769	200	0
			Iodomethane	µg/L	5	<5	0.0936222346	200	0
			Dichloromethane (Methylene chloride)	µg/L	5	<5	0	200	0
			Allyl chloride	µg/L	2	<2	0.0393030392	200	0
			trans-1,2-dichloroethene	µg/L	0.5	<0.5	0.0089145300	200	0
			1,1-dichloroethane	µg/L	0.5	<0.5	0	200	0
			cis-1,2-dichloroethene	µg/L	0.5	<0.5	0.0027927639	200	0
			Bromochloromethane	µg/L	0.5	<0.5	0.0516539118	200	0
			1,2-dichloroethane	µg/L	0.5	<0.5	0.0199763593	200	0
			1,1,1-trichloroethane	µg/L	0.5	<0.5	0	200	0
			1,1-dichloropropene	µg/L	0.5	<0.5	0.0050274469	200	0
			Carbon tetrachloride	µg/L	0.5	<0.5	0	200	0
			Dibromomethane	µg/L	0.5	<0.5	0.0084746159	200	0
			Trichloroethene (Trichloroethylene,TCE)	µg/L	0.5	<0.5	0.0091191474	200	0
			1,1,2-trichloroethane	µg/L	0.5	<0.5	0	200	0
			1,3-dichloropropane	µg/L	0.5	<0.5	0.0160532310	200	0
			Tetrachloroethene (Perchloroethylene,PCE)	µg/L	0.5	<0.5	0	200	0
			1,1,1,2-tetrachloroethane	µg/L	0.5	<0.5	0	200	0
			1,1,2,2-tetrachloroethane	µg/L	0.5	<0.5	0	200	0
			1,2,3-trichloropropane	µg/L	0.5	<0.5	0.0186628620	200	0
			trans-1,4-dichloro-2-butene	µg/L	1	<1	0	200	0
			1,2-dibromo-3-chloropropane	µg/L	0.5	<0.5	0	200	0
			Hexachlorobutadiene	µg/L	0.5	<0.5	0.1573581739	200	0
		Halogenated Aromatics	Chlorobenzene	µg/L	0.5	<0.5	0.0194496598	200	0
			Bromobenzene	µg/L	0.5	<0.5	0	200	0
			2-chlorotoluene	µg/L	0.5	<0.5	0.0196366428	200	0
			4-chlorotoluene	µg/L	0.5	<0.5	0.0520684957	200	0
			1,3-dichlorobenzene	µg/L	0.5	<0.5	0.0788369591	200	0
			1,4-dichlorobenzene	µg/L	0.3	<0.3	0.0749752638	200	0
			1,2-dichlorobenzene	µg/L	0.5	<0.5	0.0498436584	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 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 x 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 identifer 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.

VOCs in Water (continued)

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248519.002	LB281443.032	Halogenated Aromatics	1,2,4-trichlorobenzene	µg/L	0.5	<0.5	0.0862681254	200	0
			1,2,3-trichlorobenzene	µg/L	0.5	<0.5	0.1109669176	200	0
		Monocyclic Aromatic	Benzene	µg/L	0.5	<0.5	0.1430023057	200	0
			Toluene	µg/L	0.5	<0.5	0.0599720060	200	0
			Ethylbenzene	µg/L	0.5	<0.5	0	200	0
			m/p-xylene	µg/L	1	<1	0.0506965142	200	0
			Styrene (Vinyl benzene)	µg/L	0.5	<0.5	0.0155062539	200	0
			o-xylene	µg/L	0.5	<0.5	0.0196337339	200	0
			Isopropylbenzene (Cumene)	µg/L	0.5	<0.5	0.0154372857	200	0
			n-propylbenzene	µg/L	0.5	<0.5	0.0023440881	200	0
			1,3,5-trimethylbenzene	µg/L	0.5	<0.5	0.0210036899	200	0
			tert-butylbenzene	µg/L	0.5	<0.5	0.0357248922	200	0
			1,2,4-trimethylbenzene	µg/L	0.5	<0.5	0.0285340907	200	0
			sec-butylbenzene	µg/L	0.5	<0.5	0	200	0
			p-isopropyltoluene	µg/L	0.5	<0.5	0.0323130220	200	0
			n-butylbenzene	µg/L	0.5	<0.5	0.0372938309	200	0
		Nitrogenous Compounds	Acrylonitrile	µg/L	0.5	<0.5	0.0619069381	200	0
			2-nitropropane	µg/L	100	<100	0.1455301178	200	0
		Oxygenated Compounds	Acetone (2-propanone)	µg/L	10	<10	3.5419120889	200	0
			MtBE (Methyl-tert-butyl ether)	µg/L	2	<2	0.0037179978	200	0
			Vinyl acetate*	µg/L	10	<10	0.0232176146	200	0
			MEK (2-butanone)	µg/L	10	<10	0	200	0
			MIBK (4-methyl-2-pentanone)	µg/L	5	<5	0.0545410764	200	0
			2-hexanone (MBK)	µg/L	5	<5	0	200	0
		Polycyclic	Naphthalene (VOC)*	µg/L	0.5	<0.5	0.1219442078	200	0
		Sulphonated	Carbon disulfide	µg/L	2	<2	0.0740660368	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	9.2	9.6449562319	30	5
			d8-toluene (Surrogate)	µg/L	-	7.7	7.4396549730	30	4
			Bromofluorobenzene (Surrogate)	µg/L	-	11	8.3	30	25
		Totals	Total BTEX	µg/L	3	<3	0	200	0
			Total VOC	µg/L	10	31	34.374067007(	60	9
		Trihalomethanes	Chloroform (THM)	µg/L	0.5	28	30.937880281	32	10
			Bromodichloromethane (THM)	µg/L	0.5	2.7	3.1273968385	47	14
			Dibromochloromethane (THM)	µg/L	0.5	0.6	0.4846819775	122	19
			Bromoform (THM)	µg/L	0.5	<0.5	0.0222268737	200	0
SE248596.004	LB281443.024	Monocyclic Aromatic	Benzene	µg/L	0.5	<0.5	<0.5	200	0
			Toluene	µg/L	0.5	<0.5	<0.5	200	0
			Ethylbenzene	µg/L	0.5	<0.5	<0.5	200	0
			m/p-xylene	µg/L	1	<1	<1	200	0
			o-xylene	µg/L	0.5	<0.5	<0.5	200	0
		Polycyclic	Naphthalene (VOC)*	µg/L	0.5	<0.5	<0.5	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	9.9	9.6	30	3
			d8-toluene (Surrogate)	µg/L	-	7.2	12.3	30	53 ①
			Bromofluorobenzene (Surrogate)	µg/L	-	10.0	10.0	30	0
		Totals	Total BTEX	µg/L	3	<3	<3	200	0

Volatile Petroleum Hydrocarbons in Water

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248519.002	LB281443.030		TRH C6-C10	µg/L	50	<50	<50	200	0
			TRH C6-C9	µg/L	40	<40	<40	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	9.2	9.6	30	5
			d8-toluene (Surrogate)	µg/L	-	7.7	7.4	30	4
			Bromofluorobenzene (Surrogate)	µg/L	-	11	8.3	30	25
		VPH F Bands	Benzene (F0)	µg/L	0.5	<0.5	<0.5	200	0
			TRH C6-C10 minus BTEX (F1)	µg/L	50	<50	<50	200	0
SE248596.004	LB281443.024		TRH C6-C10	µg/L	50	<50	<50	200	0
			TRH C6-C9	µg/L	40	<40	<40	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	9.9	9.6	30	3
			d8-toluene (Surrogate)	µg/L	-	7.2	12.3	30	53 ①
			Bromofluorobenzene (Surrogate)	µg/L	-	10.0	10.0	30	0
		VPH F Bands	Benzene (F0)	µg/L	0.5	<0.5	<0.5	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 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 x 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 identifer 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.

Volatile Petroleum Hydrocarbons in Water (continued)

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE248596.004	LB281443.024	VPH F Bands	TRH C6-C10 minus BTEX (F1)	µg/L	50	<50	<50	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.

Conductivity and TDS by Calculation - Water

Method: ME-(AU)-[ENV]AN106

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB281217.002	Conductivity @ 25 C	µS/cm	2	300	303	90 - 110	100

Metals in Water (Dissolved) by ICPOES

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB281250.002	Calcium, Ca	mg/L	0.2	47	50.5	80 - 120	94
	Magnesium, Mg	mg/L	0.1	52	50.5	80 - 120	103

PAH (Polynuclear Aromatic Hydrocarbons) in Water

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB281260.002		Naphthalene	µg/L	0.1	37	40	60 - 140	94
		Acenaphthylene	µg/L	0.1	46	40	60 - 140	115
		Acenaphthene	µg/L	0.1	43	40	60 - 140	106
		Phenanthrene	µg/L	0.1	46	40	60 - 140	116
		Anthracene	µg/L	0.1	49	40	60 - 140	122
		Fluoranthene	µg/L	0.1	50	40	60 - 140	125
		Pyrene	µg/L	0.1	49	40	60 - 140	123
		Benzo(a)pyrene	µg/L	0.1	49	40	60 - 140	122
	Surrogates	d5-nitrobenzene (Surrogate)	µg/L	-	0.26	0.5	40 - 130	52
		2-fluorobiphenyl (Surrogate)	µg/L	-	0.29	0.5	40 - 130	58
		d14-p-terphenyl (Surrogate)	µg/L	-	0.41	0.5	40 - 130	82

pH in water

Method: ME-(AU)-[ENV]AN101

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB281217.003	pH**	pH Units	0.1	7.4	7.415	98 - 102	99

Total Cyanide in water by Discrete Analyser

Method: ME-(AU)-[ENV]AN077/AN287

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB281273.002	Total Cyanide	mg/L	0.004	0.025	0.025	80 - 120	102

Total Phenolics in Water

Method: ME-(AU)-[ENV]AN295

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB281341.002	Total Phenols	mg/L	0.05	0.20	0.2	80 - 120	98

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB281319.002	Aluminium	µg/L	5	21	20	80 - 120	106
	Arsenic	µg/L	1	22	20	80 - 120	109
	Cadmium	µg/L	0.1	21	20	80 - 120	106
	Chromium	µg/L	1	22	20	80 - 120	108
	Copper	µg/L	1	21	20	80 - 120	105
	Lead	µg/L	1	20	20	80 - 120	100
	Nickel	µg/L	1	22	20	80 - 120	110
	Zinc	µg/L	5	21	20	80 - 120	105

TRH (Total Recoverable Hydrocarbons) in Water

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB281260.002		TRH C10-C14	µg/L	50	980	1200	60 - 140	82
		TRH C15-C28	µg/L	200	1200	1200	60 - 140	97
		TRH C29-C36	µg/L	200	1200	1200	60 - 140	97
	TRH F Bands	TRH >C10-C16	µg/L	60	1000	1200	60 - 140	87
		TRH >C16-C34 (F3)	µg/L	500	1200	1200	60 - 140	99
		TRH >C34-C40 (F4)	µg/L	500	600	600	60 - 140	100

VOCs in Water

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

Sample Number	Parameter	Units	LOR

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.

VOCs in Water (continued) — Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB281443.002	Halogenated Aliphatics	1,1-dichloroethene	µg/L	0.5	48	45.45	60 - 140	106
		1,2-dichloroethane	µg/L	0.5	50	45.45	60 - 140	110
		Trichloroethene (Trichloroethylene,TCE)	µg/L	0.5	50	45.45	60 - 140	111
	Halogenated	Chlorobenzene	µg/L	0.5	61	45.45	60 - 140	134
	Monocyclic Aromatic	Benzene	µg/L	0.5	47	45.45	60 - 140	104
		Toluene	µg/L	0.5	47	45.45	60 - 140	103
		Ethylbenzene	µg/L	0.5	62	45.45	60 - 140	135
		m/p-xylene	µg/L	1	95	90.9	60 - 140	104
		o-xylene	µg/L	0.5	46	45.45	60 - 140	102
	Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	9.4	10	60 - 140	94
		d8-toluene (Surrogate)	µg/L	-	12	10	70 - 130	123
		Bromofluorobenzene (Surrogate)	µg/L	-	9.4	10	70 - 130	94
	Trihalomethan	Chloroform (THM)	µg/L	0.5	56	45.45	60 - 140	123

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB281443.002		TRH C6-C10	µg/L	50	970	946.63	60 - 140	102
		TRH C6-C9	µg/L	40	830	818.71	60 - 140	102
	Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	9.4	10	60 - 140	94
		d8-toluene (Surrogate)	µg/L	-	12	10	70 - 130	123
		Bromofluorobenzene (Surrogate)	µg/L	-	9.4	10	70 - 130	94
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	µg/L	50	690	639.67	60 - 140	107

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 identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311(Perth)/AN312

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE248497.027	LB281263.004	Mercury	mg/L	0.0001	0.0018	<0.0001	0.008	90

Metals in Water (Dissolved) by ICPOES

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE248506.001	LB281250.004	Magnesium, Mg	mg/L	0.1	330	280	50.5	101

Total Cyanide in water by Discrete Analyser

Method: ME-(AU)-[ENV]AN077/AN287

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE248519.003	LB281273.010	Total Cyanide	mg/L	0.004	0.027	<0.004	0.025	105

Total Phenolics in Water

Method: ME-(AU)-[ENV]AN295

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE248494.001	LB281341.024	Total Phenols	mg/L	0.05	0.18	0.003	0.2	90

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE248497.027	LB281319.004	Arsenic	μg/L	1	22	<1	20	109
		Cadmium	μg/L	0.1	21	<0.1	20	106
		Chromium	μg/L	1	22	<1	20	108
		Copper	μg/L	1	21	<1	20	105
		Lead	μg/L	1	20	<1	20	101
		Nickel	μg/L	1	21	<1	20	107
		Zinc	μg/L	5	23	<5	20	96

VOCs in Water

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE248519.004	LB281443.025	Monocyclic Aromatic	Benzene	μg/L	0.5	56	<0.5	45.45	122
			Toluene	μg/L	0.5	62	<0.5	45.45	137
			Ethylbenzene	μg/L	0.5	62	<0.5	45.45	137
			m/p-xylene	μg/L	1	120	<1	90.9	132
			o-xylene	μg/L	0.5	61	<0.5	45.45	134
		Polycyclic	Naphthalene (VOC)*	μg/L	0.5	48	<0.5	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	μg/L	-	10.5	9.4	-	105
			d8-toluene (Surrogate)	μg/L	-	11.5	7.6	-	115
			Bromofluorobenzene (Surrogate)	μg/L	-	9.6	10	-	96
		Totals	Total BTEX	μg/L	3	360	<3	-	-

Volatile Petroleum Hydrocarbons in Water

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE248519.004	LB281443.025		TRH C6-C10	μg/L	50	840	<50	946.63	84
			TRH C6-C9	μg/L	40	740	43	818.71	85
		Surrogates	d4-1,2-dichloroethane (Surrogate)	μg/L	-	10.5	9.4	-	105
			d8-toluene (Surrogate)	μg/L	-	11.5	7.6	-	115
			Bromofluorobenzene (Surrogate)	μg/L	-	9.6	10	-	96
		VPH F Bands	Benzene (F0)	μg/L	0.5		<0.5	-	-
			TRH C6-C10 minus BTEX (F1)	μg/L	50	480	<50	639.67	68

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 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 x 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 identifer 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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5 April 2024
Ref. E26047.E09_Rev1

Miled Akle
M Projects Pty Ltd
Suite 16, 99 Moore Street,
Leichhardt NSW 2040

Re: Response to Parramatta Council regarding the criteria adopted for Detailed Site Investigation for Melrose Park-Tomola Site (Hope St)

1. Background

At the request of M Projects Pty Ltd ('the client'), EI Australia (EI) has prepared the following response to address Council's query regarding the redevelopment at 19 Hope Street and 69, 71, 73, 75 and 77 Hughes Avenue, Melrose Park NSW ('the site'). The land is proposed for a multi-storey residential complex, with mixed land (commercial/residential) use on the ground floor level, overlying two level basement car park. An aesthetic landscaping area of 2,673 m^2 with access to deep soil will also be established on the eastern portion of the site.

A Detailed Site Investigation (DSI) was provided to support re-zoning of the site through a Development Application (DA) to City of Parramatta Council and to determine the contamination status of the site and to meet obligations under the State Environmental Planning Policy (Resilience and Hazards) (2021), for the assessment and management of contaminated soil and/or groundwater entitled:

- EI (2023) *Detailed Site Investigation; 19 Hope Street and 69, 71, 73, 75 and 77 Hughes Avenue, Melrose Park NSW*, Report No. E26047.E02_Rev0, dated 6 July 2023.

Recent discussions with the client indicated that Council requested further clarification regarding the criteria adopted in the DSI. Originally, the Planning Agreement stated the site would be remediated to HIL A – residential land with accessible gardens. A draft Tomola VPA was amended by solicitors and recommended that the open space land under the transmission easement be remediated to HIL C – Public Open Space.

2. Response to Council Request

Based on the information provided, the following response is given in Table 1 regarding contamination criteria and remediation for open space under the transmission lines.

Table 1 Response Table – Council Clarification

Information Required	Response
<u>Contamination and Remediation of Open Space</u> "*In the draft Tomola VPA amended by your solicitors, it was recommended that the Open Space land under the transmission easement be remediated to HIL C – Public Open Space. Originally, the Planning Agreement stated the site*	Subsequent to the Phase 1 report undertaken by ADE Group, EI carried out a Phase 2 investigation which is detailed in Section 1. In the DSI report EI adopted the HSL - A/B and HIL - A (residential land with accessible gardens) as per initial Planning Agreement. Based on the adopted criteria (EI,

Information Required	Response
would be remediated to HIL A – residential land with accessible gardens. *Given this disparity, it is requested that you liaise with ADE Consulting Group who authored the Phase 1 environment assessment report to provide verification in writing as to why the HIL C Open Space land use scenario proposed for the site is the appropriate standard of remediation under the National Environment Protection (Assessment of Site Contamination) Measure (1999) amendment 2013 (NEPM).* *It would be appreciated if you could provide this information as soon as practicable so that we can progress the drafting of the planning agreement and deal with any further questions that may arise during the reporting process."*	2023) contaminant concentrations in representative fill and natural soil samples were found to be below the adopted human health and ecological criteria applicable to Residential settings with accessible soils, with the following exception: ▪ Asbestos at BH3 (depths between 0.2-0.3 mBGL, at least), exceeding the criteria and warranting remediation prior excavation works or during excavation works, which could be conducted following demolition as part of the waste classification of soils for off-site disposal. The amended VPA indicates that the open space land under the transmission easement would be remediated to HSL and HSL & HIL C – Public Open Space. The criteria for open space (HSL & HIL C) is less conservative than the screening criteria used in the DSI (HSL - A/B and HIL - A). After reviewing the DSI (EI,2023), the reported asbestos exceedances at BH3 would require remediation for either Public Open Space criteria (HSL & HIL C) or for residential development HSL - A/B and HIL – A. Based on the above and considering, the conclusions and recommendations in the DSI (EI,2023) EI consider that the contamination detected would not alter the overall decision making. Reported contamination at BH3 (asbestos) would require remediation so the site could be made suitable for the proposed re zoning as either residential or open space.

3. Conclusion

In summary, EI understands that the amended VPA indicates that the Open Space land under the transmission easement would be remediated to HIL C – Public Open Space. The open space criteria (HIL C) is less conservative than the criteria (HIL A – residential land with accessible gardens) used in the DSI (EI, 2023) which was adopted from the initial Planning Agreement.

EI consider the site can be made suitable for the proposed future site development and re zoning, inclusive of the land under the transmission easement (HIL C – Public Open Space) as per amended VPA, provided the Recommendations detailed in the DSI (EI, 2023) are adopted.

Should you require anything further, please do not hesitate to contact the undersigned.

For and on behalf of
EI AUSTRALIA

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Environmental Engineer

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