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HOLDMARK NSW PTY LTD

Detailed Site Investigation

82 Hughes Avenue, Ermington and 30 & 32 Waratah Street & 112 Wharf Road, Melrose Park, NSW

E25077.E02.Rev0
28 May 2021

Document Control

Report Title:	Detailed Site Investigation
Report No:	E25077.E02.Rev0

Copies	Recipient
1 Soft Copy (PDF – Secured, issued by email)	Ms Nelly Wehbe Holdmark NSW Pty Ltd 2/2-4 Giffnock Ave, Macquarie Park, NSW, 2113
2 Original (Saved to Digital Archives) (Document2)	EI Australia Suite 6.01, 55 Miller Street, PYRMONT NSW 2009

Author	Review
	
Andrew Ibrahim **Chemical / Environmental Engineer**	**Malcolm Dale** **Senior Principal – Contaminated Land**

Revision	Details	Date	Amended By
0	Original	28 May 2021	

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Executive Summary

Background

Holdmark NSW Pty Ltd engaged EI Australia (EI) to conduct a Detailed Site Investigation (DSI) for the former industrial properties located at 82 Hughes Avenue, Ermington and 30 & 32 Waratah Street & 112 Wharf Road, Melrose Park, NSW ('the site'). This environmental assessment was completed as part of a development application process through City of Parramatta Council, to allow site redevelopment for mixed land use, medium to high density residential dwellings with green open space.

Objectives

The primary objectives of this investigation were to:

- Evaluate the potential for site contamination on the basis of historical land uses, anecdotal and documentary evidence of possible pollutant sources; and
- To investigate the degree of any potential contamination by means of intrusive sampling and laboratory analysis, for relevant contaminants of concern.

A further objective, should site contamination be confirmed, was to make recommendations for the appropriate management of any contaminated soils and/or groundwater.

Findings

The work was conducted with reference to the regulatory framework outlined in **Section 1.5** of this report and assessment findings indicated the following:

- The site had mainly been used for industrial purposes.
- The sub-surface layers of the site were comprised of fill materials, overlying residual clays and sandstone bedrock.
- 82 Hughes Avenue:
  - Multiple environmental investigations have been completed and identified localised asbestos contamination impacts in 82 Hughes Avenue Ermington which is summarised in **Section 3**.
  - Acid Sulfate Soils screening assessment showed low probability of ASS.
  - Groundwater SWLs were at depths ranging from 1.37 to 3.91 meters below.
  - Results for the groundwater samples were all below the adopted GILs, with the exception of copper, nickel and zinc which is representative of the background conditions
- 30 Waratah Street:
  - All contaminants were below the adopted criteria with the exception of heavy metals reported concentrations which were above the adopted criteria.
  - Acid Sulfate Soils screening assessment showed a risk of ASS. Additional ASS assessment should to be carried out post-demolition.
  - Groundwater SWLs were at depths ranging from 2.45 to 3.37 meters below ground level.

- Results for the groundwater samples were all below the adopted GILs, with the exception of copper, nickel, arsenic and zinc which is representative of the background conditions
- Sample GW-30_BH111M-1 showed an elevated concentration of PFOS (29µg/L) which exceeded the adopted the criteria (0.13µg/L)

- 32 Waratah Street:
  - All contaminants were below the adopted criteria with the exception of sample 32-BH106_1.4-1.5 which reported a zinc concentration above the adopted criteria.
  - Acid Sulfate Soils screening assessment showed low probability of ASS due to the shallow bedrock.
  - All groundwater monitoring wells were dry except monitoring well 32-BH104M which contained a SWL of 1.36 mBGL.
  - Results for the groundwater sample were limited amount and tested only for PFAS. The lab results showed concentrations below the adopted criteria.
- 112 Wharf Road:
  - All contaminants were below the adopted criteria.
  - Acid Sulfate Soils screening assessment showed low probability of ASS due to the shallow bedrock.
  - All groundwater monitoring wells were dry except monitoring well 112-BH113M which contained a SWL of 3.32 mBGL.
  - Results for the groundwater sample were all below the adopted GILs, with the exception of copper, nickel and zinc which is representative of the background conditions
  -

Conclusions

Based on the findings of this DSI and with consideration of the Statement of Limitations (**Section 12**), EI concluded that widespread contamination was not present at the site. The site can be made suitable for the proposed development, subject to addressing the recommendations listed in **Section.11**.

Recommendations

In view of the findings of this investigation and in accordance with the NEPC (2013) guidelines, it is considered that the site can be made suitable for the proposed mixed land use, medium to high density residential dwellings with green open space on completion of the following recommendations:

- Preparation and implementation of a Remediation Action Plan (RAP). The RAP should include, but not necessarily be limited to, the following:
  - Preparation and implementation of a Remediation Action Plan (RAP), to address the fill soil contamination.
  - The RAP should also address the reported groundwater exceedances to confirm the quality of the groundwater.

- A plan for validation works to confirm the sites environmental condition following remedial works; and
- Procedures to deal with any unexpected finds identified during construction.

- The preparation and implementation of Asbestos Management Plan (AMP), in order to outline control measures that are required to prevent exposure of site personnel to any type of asbestos.
- A Waste Management Plan should be prepared in accordance with City of Parramatta Council DCP guidelines which should include:
  - Classification of all waste material to be removed from the site in accordance with the EPA (2014) Waste Classification Guidelines, Protection of the Environment Operations Act 1997, and Work Health and Safety Regulation 2017;
  - Assessment of any soil/fill material imported onto the site. Imported soil must:
    1. be classified as virgin excavated natural material (VENM); or
    2. have a classification certificate indicating it is suitable for the propsed land use;
- Preparation of a final site validation report by a qualified environmental consultant, certifying site suitability for the proposed development.

1. Introduction

1.1 Background and Purpose

Holdmark NSW Pty Ltd engaged EI Australia Pty Ltd (EI) to conduct a Detailed Site Investigation (DSI) at 82 Hughes Avenue, 30 & 32 Waratah Street & 112 Wharf Road, Melrose Park, NSW ('the site').

The site located on the Parramatta River at Melrose Park (**Figure A.1**) comprises four lots; Lot 3 in Deposited Plan (DP) 602080 (Ermington), Lot 100 in DP 853170, Lot 1 in DP 519737, Lots 6 &7 in DP511531, Lots 1, 2 & 3 in DP 127049 (Melrose Park); is situated within the Local Government Area of City of Parramatta Council, and covers a total area of 9.43 ha. At the time of conducting this DSI, the site was used for commercial purposes.

The DSI was undertaken as part of an environmental due diligence process to support a Development Application (DA) to City of Parramatta Council, and for the purpose of enabling the developer to meet its obligations under the Contaminated Land Management Act 1997 (CLM Act), for the assessment and management of contaminated soil and/or groundwater.

For consistency with the previous reports the site was divided into:

- Holdmark west comprising 82 Hughes Avenue, Ermington, and;
- Holdmark east comprising 30 & 32 Waratah Street and 112 Wharf Road, Melrose Park.

This investigation follows on from a Preliminary Site Investigation (PSI) completed by Senversa (Report s17894_002_rpt_psi_rev2, 29 April 2020), and a DSI completed for the Hughes Avenue site by WSP (Report ref: PS110826, 12 September 2018).

In view of the PSI findings and for the purposes of making the site suitable for the proposed uses, Senversa recommended that, at the development application stage or prior to development, further assessment of the properties be carried out in line with the staged approach set out in SEPP 55 – Remediation of Land, Contamination Planning Guidelines and guidance under the CLM Act 1997. This should include:

- A more extensive groundwater assessment at Holdmark West (GSK).
- A DSI at properties within Holdmark East (all three sites).
- If required a remedial action plan (RAP) should be produced that determines how the properties should be remediated to make it suitable for the proposed land uses.

1.2 Proposed Development

The preliminary proposed development plan showed the following:

- 82 Hughes Avenue: Three residential buildings with a mixed land use with green open space;
- 30 Waratah Street: Communal green open space;
- 32 Waratah Street: One residential building as a mixed land use; and
- 112 Wharf Road: Three residential buildings with a mixed land use with green open space.

The development plan is attached as **Appendix C**.

1.3 Regulatory Framework

The following regulatory framework and guidelines were considered during the preparation of this report:

Legislation

- Contaminated Land Management Act 1997;
- State Environment Protection Policy 55 (SEPP 55) – Remediation of Land;
- Parramatta Local Environmental Plan 2011;
- Sydney Regional Environmental Plan (Sydney Harbour Catchment), 2005
- State Environmental Planning Policy (Coastal Management), 2018

Guidelines

- Ahern CR, Stone Y and Blunden B (1998) *Acid Sulfate Soils Assessment Guidelines*, part of the ASS Manual, Acid Sulfate Soil Management Advisory Committee (ASSMAC), Wollongbar, NSW, Australia, 28 August 1998.
- ANZG (2018) *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*, Australian and New Zealand Governments and Australian State and Territory Governments, Canberra ACT, Australia, August 2018.
- CRC CARE (2017) *Risk-Based Management and Remediation Guidance for Benzo(a)pyrene*, CRC CARE Technical Report No. 39, CRC for Contamination Assessment and Remediation of the Environment, Newcastle, Australia, January 2017.
- DEC (2007) *Guidelines for the Assessment and Management of Groundwater Contamination*;
- EnRisk (2016) *Proposed Decision Tree for Prioritising Sites Potentially Contaminated with PFASs,* Environmental Risk Services Pty Ltd, Environment Protection Authority of New South Wales, 25 February 2016.
- EPA (2017) *Guidelines for the NSW Site Auditor Scheme* (3rd Edition);
- EPA (1995) *Sampling Design Guidelines*;
- EPA (2020) *Consultants Reporting on Contaminated Land: Contaminated Land Guidelines*;
- NEMP (2020) *PFAS National Environmental Management Plan*, National Chemicals Working Group of the Heads of the EPAs Australia and New Zealand (HEPA), January 2020.
- NEPC (2013) *Schedule B(1) Guideline on Investigation Levels for Soil and Groundwater*;
- NEPC (2013) *Schedule B(2) Guideline on Site Characterisation*;
- NUDLC (2012) *Minimum Construction Requirements for Water Bores in Australia* (3rd Edition). National Uniform Drillers Licensing Committee 2011, February 2012.

1.4 Project Objectives

The main objectives of this assessment are:

- Undertake the additional investigations outlined in the previous environmental reports;

- to evaluate the potential for site contamination on the basis of historical land uses, anecdotal and documentary evidence of possible pollutant sources; and
- to investigate the degree of any potential contamination by means of intrusive sampling and laboratory analysis, for relevant contaminants of concern.

A further objective, should site contamination be confirmed, will be to make recommendations for the appropriate management of any contaminated soils and/or groundwater.

1.5 Scope of Works

In order to achieve the above objectives and in keeping the project cost-effective while generally complying with the EPA (2020) guidelines for consultants reporting on contaminated sites, the scope of works was as follows:

1.5.1 Desktop Study

- DBYD service clearance, Health Work & Safety Plan and field-work preparation;
- A review of relevant hydrogeological and soil landscape maps for the project area;
- Detailed review of the previous PSI report for the Holdmark East area and the previous DSI report for the Holdmark West area;
- A detailed site walkover of all areas;
- Searches through the EPA records to confirm that there are no statutory notices current on the site under the *Protection of the Environment Operations Act 1997* or the *Contaminated Land Management Act 1997*;

1.5.2 Field Work & Laboratory Analysis

- Drilled of 34 test boreholes distributed in a grid-based pattern at accessible areas, outside of the buildings, across all of the sites, for soil contamination assessment. These will be concrete cored at locations that are cleared for underground services and drilled to 4 m below ground level (bgl), unless prior refusal occurs. The bores will be broadly distributed as follows:
  - 12 bores at the site 30 Waratah Street;
  - 20 bores at the sites 32 Waratah and 112 Wharf Road; and
  - 2 deep bores will be drilled at 82 Hughes Avenue, to around 1 m below the proposed lower basement floor level, for acid sulfate soil assessment purposes.
- Bore logged and multiple level soil sampling within fill and natural soils;
- Drilled and installed of 12 groundwater monitoring bores, distributed across the properties (2 new monitoring bores installed for Holdmark West, with 10 new monitoring bores for Holdmark East), upgradient and down gradient of potential contamination sources;
- Monitoring wells will be constructed to EPA standards with screen intervals set at 1 m above to 2 m below the ambient groundwater level, to ensure that any free phase hydrocarbons are detected if present;
- Field water quality testing and groundwater sampling using low-flow methods at all newly installed monitoring wells which contained groundwater and two existing groundwater monitoring wells;

- Laboratory analysis of selected groundwater samples for relevant analytical parameters as determined from the site history survey and field observations during the investigation program; and
- Laboratory analysis of selected soil samples for relevant analytical parameters, including ASS parameters and quantitative asbestos testing, as determined from the site history survey and field observations during the investigation program, as listed under 'laboratory analysis', below.

1.5.3 Data Analysis and Reporting

This DSI report has been prepared to document desk study findings, the conceptual site model, data quality objectives, investigation methodologies and results. The report also provides a record of observations made during the detailed site walkover inspection, borehole and monitoring well construction logs and a discussion of laboratory analytical results in regards to potential risks to human health, the environment and the aesthetic uses of the land.

2. Site Description

2.1 Property Identification, Location and Physical Setting

The site identification details and associated information are presented in **Table 2-1**, while the site locality is shown in **Figure A.1**.

Table 2-1 Site Identification, Location and Zoning

Attribute	Description
Street Address	Holdmark West; 82 Hughes Avenue, Ermington NSW; and Holdmark east; 30 & 32 Waratah Street & 112 Wharf Road, Melrose Park, NSW
Location Description	The western part is bounded by industrial/commercial properties (north), Atkins Road (west), Hughes Avenue (east), and George Kendall Riverside Park and Parramatta River (south). The eastern part is bounded by Mary Street and Industrial/commercial properties (north), industrial/commercial property (west), Wharf Road (east), and Ermington Bay Nature Trail, Archer Park and Parramatta River (south).
Coordinates	Northeast corner of site: GDA2020-MGA56 Easting: 321661.086, Northing: 6256649.687 (Source: http://maps.six.nsw.gov.au)
Site Area	94,300m^2 (Ref. http://maps.six.nsw.gov.au)
Site Owner	Holdmark NSW Pty Ltd
Lot and Deposited Plan (DP)	82 Hughes Ave.: Lot 3 in DP 602080. 30 Waratah St.: Lot 100 in DP 853170. 32 Waratah St.: Lot 1 in DP 519737 & Lot 6 in DP 511531. 112 Wharf Rd.: Lots 1, 2 and 3 in DP127049 & Lot 7 in DP 511531.
State Survey Marks	Five State Survey Marks (SSM) are situated in close proximity (<100 m) to the site: SS99446 on the corner of Mary Street and Wharf Road; SS61855D on the corner of Mary Street and Waratah Street; SS14423 south of 32 Waratah Street

Attribute	Description
	SS80432 on the dead-end of Hughes Avenue; and SS99666 on the corner of Atkins Road and Saunders Road. (Source: http://maps.six.nsw.gov.au)
Local Government Authority	City of Parramatta Council
Current Zoning	IN1 – General Industrial (Parramatta Local Environment Plan, 2011)
Current Land Uses	Industrial and commercial

2.2 Surrounding Land Use

The site is situated within an area of General Industrial (IN1) land zoning. Current uses of surrounding land are described in **Table 2-2**.

Table 2-2 Surrounding Land Uses

Property	Direction Relative to Site	Land Use Description	Sensitive Land Receptors
82 Hughes Avenue	North	Industrial and commercial properties and surrounded by residential properties.	Hughes Avenue Reserve (<230m)
	South	Parramatta River and George Kendall Riverside Park	Parramatta River (Immediate) George Kendall Riverside Park (Immediate)
	West	Residential properties	Residents
	East	Parramatta River, Ermington Bay Nature Trail and industrial and commercial properties	Parramatta River and Ermington Bay Nature Trail (Immediate)
30 Waratah Street	North	Industrial and commercial properties	-
	South	Parramatta River and Ermington Bay Nature Trail	Parramatta River and Ermington Bay Nature Trail (Immediate)
	West	Industrial and commercial properties	-
	East	Industrial and commercial properties	Melrose Park Public School (<20m)
32 Waratah Street	North	Melrose Public School followed by industrial and commercial properties	Melrose Park Public School (<10m)
	South	Archer Park and Parramatta River	Parramatta River, Ermington Bay Nature Trail and Archer Park (Immediate)
	West	Industrial and commercial properties	Parramatta River and Ermington Bay Nature Trail (Immediate)

Property	Direction Relative to Site	Land Use Description	Sensitive Land Receptors
	East	Industrial and commercial properties	Residents (<110m)
112 Wharf Road	North	Melrose Park Public School followed by industrial, commercial and residential properties	Melrose Park Public School (<10m) Jennifer Park Playground (<240m)
	South	Archer Park, Melrose Park Playground and Parramatta River	Archer Park, Melrose Park Playground and Parramatta River (Immediate)
	West	Industrial and commercial property	Parramatta River, Archer Park and Ermington Bay Nature Trail (Immediate)
	East	Residential property	Residents (immediate) Archer Creek (<430m)

2.3 Regional Setting

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

Table 2-3 Regional Setting Information

Attribute	Description
Topography	Generally the area is gently sloping towards south (Parramatta River). RLs are ranging as following: ▪ 82 Hughes Avenue: from 13.71 mAHD to 4.61 mAHD towards south east ▪ 30 Waratah Street: from 11.28 mAHD to 6.72 mAHD towards south west ▪ 32 Waratah Street: from 8.71 mAHD to 4.36 mAHD towards south ▪ 112 Wharf Road: from 13.49 mAHD to 6.42 mAHD towards south
Site Drainage	Consistent with the general slope of the site, stormwater is assumed to flow south towards Parramatta via drainage systems discharging to various stormwater easements and the municipal stormwater system.
Regional Geology	The 1:100 000 scale Sydney Geological Series Sheet 9130, indicates the majority of the site is located on Quaternary estuarine or alluvial sediments (Qha) which is characterized by Silty to peaty quartz sand, silt and clay, with ferruginous and humic cementation in places and common shell layers. However, parts of the site is located on the boundary with Hawkesbury Sandstone (Rh) which is characterized by medium to coarse grained quartz sandstone, very minor shale and laminate lenses. (Ref. 1:100 000 Geological Series Sheet 9130 – Sydney, NSW DMR).
Soil Landscapes	The Soil Conservation Service of NSW Soil Landscapes of the Sydney 1:100,000 Sheet (Chapman and Murphy, 1989) indicates that the site overlies a Lucas Heights (lh) Residual landscape, which typically includes gently undulating crests and ridges on plateau surfaces of the Mittagong Formation (alternating bands of shale and fine-grained sandstones).

Attribute	Description
Acid Sulfate Soil Risk	With reference to the Prospect/Parramatta River Acid Sulfate Soil Risk Map (1:25,000 scale; Murphy, 1997), the majority of the subject land lies within the map class description of *No Known Occurrence with the exception of the southern boundary of the site which is in the interface with class description as High Probability (Ei0)*. The Parramatta Local Environmental Plan 2011- Acid Sulfate Soils Risk Map – Sheet ASS_018, 1:10,000 scale Map indicates that the majority of the site lies within area which is mapped as Acid Sulfate Soils Class 5 with the exception of the southern boundary of the site which is touching Acid Sulfate Soils Class 2. *Based on the findings of this investigation, the need for further Acid Sulfate soil assessment was considered warranted which is part of this investigation*.
Depth to Groundwater	During the site drilling works, groundwater was encountered ranging from 3.0 mBGL (30-BH110M) and 4.2 mBGL (82-BH102M). Standing Water Levels (SWLs) were between 1.25 to 4.07 m BTOC during the groundwater gauging. Onsite groundwater conditions, including groundwater flow direction, are discussed further in **Section 8.2**.
Nearest Surface Water Feature	Parramatta River which is located immediately south of the site.
Groundwater Flow Direction	Groundwater flow direction in the vicinity of the site is inferred to be south towards Parramatta River which is located immediately south of the site.

2.4 Groundwater Bore Records and Groundwater Use

An online search for groundwater bores registered with WaterNSW was conducted by EI on 14 May 2021 (Ref. https://realtimedata.waternsw.com.au/water.stm). The search revealed no registered bores within a 500m radius of the site. This indicated that the local groundwater is not used as a resource. The local groundwater may also be saline from the adjoining Parramatta River (Sydney Harbour).

2.5 Site Walkover

EI staff made a number of observations during a detailed site inspection on 25 March 2021. The recorded observations showed no changes since the last visit documented in the previous investigation completed by WSP (WSP, 2018) and Senversa (SV, 2020) with the exception of property number 32 Waratah Street which was vacant and all structures were locked.

Some of the previous observations and potential source zones are outlined in **Section 3**.

3. Previous Investigations

3.1 Available documents

Previous environmental investigations relating to at least part of the site were as follows:

- Preliminary Site Investigation, Holdmark Property Group: 30-32 Waratah Street & 112 Wharf Road, Melrose Park NSW, by EI Australia, (Project. No.: E22945 AA_Rev0, dated on 22 April 2016); and
- Detailed Environmental Investigation, GLAXOSMITHKLINE PTY LTD: 82 Hughes Avenue, Ermington NSW, by WSP Australia Pty Ltd, (Project. No.: PS110826, dated on September 2018); and
- Preliminary Site Investigation, Prepared for Holdmark Property Group, 2 Hughes Avenue, Ermington, NSW, by Senversa Pty Ltd, (Ref. No. s17894_002_rpt_psi_rev2, dated on 29 April 2020).

A summary of the provided reports and key findings is outlined in **Table 3-1**.

Table 3-1 Summary of Previous Investigation Works and Findings

Assessment Details	Project Tasks and Findings
Preliminary Site Investigation (EI, 2016) - 30-32 Waratah Street & 112 Wharf Road, Melrose Park NSW	
Scope of Works	▪ Desktop study and review of relevant topographical, geological, hydrogeological, soil landscape and Acid Sulfate Soil maps. ▪ Search of historical data, land titles, council records and SafeWork. ▪ A detailed site walkover inspection. ▪ Data analysis and reporting.
Key findings	▪ Historical records indicated that commercial/industrial warehouses occupied the site from around the 1960s and the site continued to be commercial/industrial in nature until the present day; ▪ The site was not reported as being subject to regulation in relation to environmental impacts, as documented in the NSW EPA/OEH public registers, however two sites within a 0.5 km radius of the site are subject to regulation by the EPA; ▪ A WorkCover NSW Authority data search of records relating to historical storage of dangerous goods on the site revealed a number of ASTs and a historic UPSS were present on site; ▪ A search of Council records relating to previous development applications, building applications and other information pertaining to previous activities at site revealed that each property has been operating for industrial purposes since the 1970's at 30 Waratah Street, the 1980's at 32 Waratah Street and the 1950's at 112 Wharf Road, Melrose Park ; ▪ The site walkover inspection identified a number of areas of environmental concern including significant filling in the southern portions of the site and storage of industrial chemicals and oils on each premise. ASTs were observed at 30 Waratah Street, Melrose Park;
Conclusion	EI conclude that there is potential for contamination to be present on site. With consideration given to the nature of the proposed land use, intrusive investigation is required to verify the quality of site soils and groundwater

Assessment Details	Project Tasks and Findings
Recommendations	▪ Carry out a detailed site investigation (DSI) via programme of systematic and targeted sampling to evaluate the quality of site soils and groundwater, and establish the any requirements for remediation, as necessary.; and ▪ Prior to site demolition, a Hazardous Materials Survey should be conducted on the existing on-site structures to identify potentially hazardous building products that may potentially be released to the environment during demolition. This survey is necessitated by the needs of protecting site personnel from potential exposure risks and management requirements for implementation as part of site demolition (if necessary).
Detailed Environmental Investigation (WSP, 2018) – 82 Hughes Avenue, Ermington	
Scope of Works	▪ Desktop review previous investigation(s) and historical data to determine previous and current land use activities ▪ Sampling of fifty seven (57) borehole locations ▪ Collection of two groundwater samples
Previous investigation	▪ A phase 1 contamination assessment has completed by WSP in July 2015 which included a preliminary assessment of soil and groundwater conditions at the site (not provide to EI). ▪ During the walkover, WSP identified three areas which were considered a source of contamination as following: ‣ The wastewater treatment facility used for pH correction located at the south-eastern portion of the site; ‣ An area which formerly contained an Ethanol underground storage tank (UST) which was located between the distribution warehouse and the southern carpark; and ‣ Black staining which was reported in soil during excavations at the western boundary of the site. ▪ It was concluded that the site was suitable for the continued commercial/industrial land use.
Key findings	▪ Slightly elevated concentrations in the surface soils and fill material. ▪ Four locations had detections of asbestos, three of the four were at depth in the fill (0.5mBGL). ▪ All contaminants of concern were reported below the site screening criteria with the exception of heavy metals which was slightly elevated.
Conclusion and recommendations	WSP concluded that the site is suitable for ongoing commercial/industrial use and can be made suitable for residential use following remediation or management of the asbestos finds. This can be managed by: ▪ Excavation and disposed off-site to a suitable licenced landfill after classifying the soils/waste in accordance with the NSW EPA, 2014; and/or ▪ Capping on site and management under a long term environmental management plan (EMP)
Preliminary Site Investigation (SV, 2020)	
Objective	▪ Assess the site's contaminating activities and the likelihood of existing impacts from this activities ▪ Assess the requirement of additional assessment or remediation of contamination.
Scope	▪ NSW EPA contaminated land register search; ▪ Historical aerial photographs;

Assessment Details	Project Tasks and Findings
	▪ Groundwater bore information; ▪ Relevant government databases; ▪ Published soil, geology and topographic maps; ▪ SafeWork search; ▪ A site walkover; and ▪ Data evaluation and reporting.
Key findings	West property: ▪ Additional groundwater monitoring wells are required to assess any potential on-site and/or off-site sources of contamination; and ▪ Analysis of soil or groundwater for associated pharmaceuticals. East properties: ▪ The contamination status is unknown and previous desktop assessments have reported a medium to high risk that contamination is present.
Conclusion	Senversa recommended that at development application stage or prior to development, further assessment of all properties to be carried out in line with the staged approach set out in SEPP55 - Remediation of Land, Contamination Planning Guidelines and guidance under the CLM Act 1997.
Recommendations	▪ Extensive groundwater assessment at the western property; ▪ A DSI at the eastern properties; ▪ If required a RAP should be produced that determines how the site should be remediated to make it suitable for the proposed land uses.

A plan showing all sources and findings identified in the previous environmental assessments is attached in **Appendix D**.

4. Site History

4.1 EPA Online Records

On 17 May 2021, an on-line search of the contaminated land public record of NSW Environment Protection Authority (EPA) was conducted. This search confirmed that the NSW EPA had no regulatory involvement in relation to the area of investigation, or properties in proximity to the site. The contaminated land public record is a searchable database of:

- Orders made under Part 3 of the Contaminated Land Management Act 1997 (CLM Act);
- Approved voluntary management proposals under the CLM Act that have not been fully carried out and where the approval of the EPA has not been revoked;
- Site Audit Statements provided to the EPA under Section 53B of the CLM Act that relate to significantly contaminated land;
- Where practicable, copies of any documentation formerly required to be part of the public record; and
- Actions taken by the EPA under Sections 35 and 36 of the Environmentally Hazardous Chemicals Act 1985.

4.2 List of NEW contaminated Sites Notified to EPA

A search through the List of NSW Contaminated Sites notified to the EPA under Section 60 of the CLM Act 2008 was also conducted on 17 May 2021. This list is maintained by NSW EPA and includes properties on which contamination has been identified, but not deemed to be impacted significantly enough to warrant regulation. The site had not been notified as contaminated by the EPA.

4.3 POEO Public Register

A search of the Protection of the Environment Operations (POEO) Act public register, regarding environmental protection licences, applications, notices, audits, pollution studies and reduction programmes was also performed by EI. The search identified many issued records for only the property no. 82 Hughes Avenue Ermington, including environmental protection licence and licence variations with the exception of a pending surrender of a licence for chemical production waste generation and Pharmaceutical and veterinary products productions.

Table including details from the documents resulting from this search are presented in **Appendix E**.

5. Conceptual Site Model

In accordance with NEPC (2013) *Schedule B2 – Guideline on Site Characterisation* and to aid in the assessment of data collection for the site, EI developed a preliminary conceptual site model (CSM) assessing plausible pollutant linkages between potential contamination sources, migration pathways and receptors. The CSM provides a framework for the review of the reliability and useability of the data collected and to identify data gaps in the existing site characterisation.

5.1 Subsurface Conditions

Based on the site visits in April 2021, the subsurface conditions of the site were expected to be a fill layer, over residual soils underlain by sandstone bedrock with mangrove area along the southern boundary with Parramatta River.

The foreshore mangrove areas on the southern boundaries of the sites are likely to be estuarine sediments and are mapped as acid sulfate soils.

5.2 Potential Contamination Sources

On the basis of previous environmental investigations, site history and search findings (described in **Section 4**), EI considered the potential chemical hazards and onsite contamination sources to be as follows:

Property	Potential contamination Sources
82 Hughes Avenue	▪ Imported fill soils of unknown origin to be used for levelling the site; ▪ Identified asbestos impacts in the previous investigation ▪ Impacts from current pharmaceutical manufacturing and storing activities at the site; ▪ Hazardous materials, including asbestos-containing materials (ACM); and ▪ Potentially impacted groundwater from any potential leakages and spillages to the ground and the drain/sewage systems from the pharmaceutical manufacturing and storing activities.
30 Waratah Street	▪ Imported fill soils of unknown origin to be used for levelling the site; ▪ Impacts from current industrial manufacturing and storing activities at the site; ▪ Hazardous materials, including asbestos-containing materials (ACM) ▪ High pressure oil pipeline buried in hope street and waratah Street (offsite source); and ▪ Potentially impacted groundwater from any potential leakages and spillages to the ground and the drain/sewage systems from the pharmaceutical manufacturing and storing activities.
32 Waratah Street	▪ Imported fill soils of unknown origin to be used for levelling the site; ▪ Impacts from previous industrial manufacturing and storing activities at the site; ▪ Hazardous materials, including asbestos-containing materials (ACM) ▪ High pressure oil pipeline buried in hope street and waratah Street (offsite source); and Potentially impacted groundwater from any potential leakages and spillages to the ground and the drain/sewage systems from the pharmaceutical manufacturing and storing activities.
112 Wharf Road	▪ Imported fill soils of unknown origin to be used for levelling the site; ▪ Impacts from current pharmaceutical manufacturing and storing activities at the site; ▪ Hazardous materials, including asbestos-containing materials (ACM); and

Property	Potential contamination Sources
	▪ Potentially impacted groundwater from any potential leakages and spillages to the ground and the drain/sewage systems from the pharmaceutical manufacturing and storing activities.

5.3 Potential Contaminants

Based on the findings of the site contamination appraisal, the potential chemicals at the site were considered to be:

- Soil – heavy metals (HMs including arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc), TRH, PAH, the monocyclic aromatic hydrocarbon compounds benzene, toluene, ethylbenzene and xylenes (BTEX), organochlorine and organophosphate pesticides (OCP/OPP), polychlorinated biphenyls (PCB), Per- and poly-fluoro alkyl substances (PFAS) and asbestos.
- Groundwater – heavy metals (HMs including arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc), TRH, BTEX, PAH and volatile organic compounds (VOC; including chlorinated VOC (VOCC) and BTEX), PFAS and 1, 4-dioxane.

The investigation does not consider the wide range of specialist pharmaceutical chemicals that may have been produced at the eastern sites. Many of these are likely to be proprietary and would generally be considered to be a low risk to any property development.

5.4 Potential Sources, Exposure Pathways and Receptors

Potential contamination sources, exposure pathways and human and environmental receptors that were considered relevant for this investigation are summarised in **Table 5-1**, along with a qualitative assessment of the potential risks posed by complete exposure pathways.

Table 5-1 Preliminary Conceptual Site Model

Site Area	Subsurface Profile	Potential Sources	Potential Contaminants	Media	Sensitive Receptor	Migration & Exposure Pathways	Potential Risk of Complete Exposure Pathway
82 Hughes Avenue, Ermington	Fill soils	ACM in the fill layer	Asbestos	Fill soils	Site Workers during demolition and construction Future site residents	Dermal Contact Ingestion Inhalation	H
	Groundwater	Pharmaceutical manufacturing and storing activities and wastewater treatment facility	Heavy Metals, Petroleum Hydrocarbons (including PAHs), VOCs, PFAS and 1, 4-dioxane.	Groundwater LNAPL/DNAPL (if present)	Site Workers during demolition and construction Future site residents	Dermal Contact Ingestion Inhalation	M
30 Waratah Street, Melrose NSW	Potentially impacted fill over the residual clay soils underlain with sandstone bedrock and mangroves (ASS).	Industrial activities, potential ACM in the fill layer of soils, termiticides, chemical storage depots, buried high pressure oil pipeline.	Pesticides, Heavy Metals, Petroleum Hydrocarbons (including PAHs), OCPs, PFAS and Asbestos.	Soils/Bedrock Groundwater LNAPL/DNAPL (if present)	Parramatta River, Archer Creek, Site Workers during demolition and construction Future site residents	Seepage into the subsurface soils, bedrock and groundwater. Dermal Contact Ingestion Inhalation	M
	Groundwater	Industrial and commercial activities including the wash bay, diesel tank generator and the former UST area and buried high pressure oil pipeline.	Heavy Metals, Petroleum Hydrocarbons (including PAHs), VOCs, PFAS and 1, 4-dioxane.	Groundwater LNAPL/DNAPL (if present)	Site Workers during demolition and construction Future site residents	Dermal Contact Ingestion Inhalation	M
32 Waratah Street, Melrose NSW	Potentially impacted fill over the residual clay soils underlain with sandstone	Industrial activities, potential ACM in the fill layer of soils,	Pesticides, Heavy Metals, Petroleum Hydrocarbons	Soils/Bedrock Groundwater LNAPL/DNAPL (if	Parramatta River, Archer Creek, Site Workers during	Seepage into the subsurface soils, bedrock	M

Site Area	Subsurface Profile	Potential Sources	Potential Contaminants	Media	Sensitive Receptor	Migration & Exposure Pathways	Potential Risk of Complete Exposure Pathway
	bedrock and mangroves.	termiticides, historical incinerator and buried high pressure oil pipeline...	(including PAHs), OCPs, PFAS and Asbestos.	present)	demolition and construction Future site residents	and groundwater. Dermal Contact Ingestion Inhalation	
	Groundwater	Industrial and commercial activities, buried high pressure oil pipeline and historical incinerator	Heavy Metals, Petroleum Hydrocarbons (including PAHs), VOCs, PFAS and 1, 4-dioxane.	Groundwater LNAPL/DNAPL (if present)	Site Workers during demolition and construction Future site residents	Dermal Contact Ingestion Inhalation	M
112 Wharf Road, Melrose Park NSW	Potentially impacted fill over the residual clay soils underlain with sandstone bedrock.	Pharmaceutical manufacturing and storing activities, potential ACM in the fill layer of soils, termiticides water tank and diesel power generator.	Pesticides, Heavy Metals, Petroleum Hydrocarbons (including PAHs), OCPs, PFAS and Asbestos.	Soils/Bedrock Groundwater LNAPL/DNAPL (if present)	Parramatta River, Archer Creek, Site Workers during demolition and construction Future site residents	Seepage into the subsurface soils and bedrock. Dermal Contact Ingestion Inhalation	M
	Groundwater	Pharmaceutical manufacturing and storing activities and water tank and diesel power generator.	Heavy Metals, Petroleum Hydrocarbons (including PAHs), VOCs, PFAS and 1, 4-dioxane.	Groundwater LNAPL/DNAPL (if present)	Parramatta River, Archer Creek, Site Workers during demolition and construction Future site residents	Dermal Contact Ingestion Inhalation	M

Note 1 L = Low Risk; M = Moderate Risk; H = High Risk

5.5 Data Gaps

Based on information from the site walkover inspection, previous environmental investigations and site history review, EI considered a programme of intrusive investigation was warranted to conduct targeted sampling at locations of known, potential sources of contamination (as listed in **Section 5.2**), with systematic sampling coverage in site areas where operational site history was not documented.

6. Methodology

6.1 Sampling, Analytical and Quality Plan (SAQP)

The SAQP ensured that the data collected during intrusive works at the site were representative and provided a robust basis for site assessment decisions. The SAQP included the following:

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

6.2 Data Quality Objectives (DQO)

In accordance with the USEPA (2006) *Data Quality Assessment* and the EPA (2017) *Guidelines for the NSW Site Auditor Scheme*, the process of developing Data Quality Objectives (DQO) was used by the EI assessment team to determine the appropriate level of data quality needed for the specific data requirements of the project. The DQO process that was applied for this investigation is documented in **Table 6-1**.

Table 6-1 Summary of Project Data Quality Objectives

DQO Steps	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	• The site is to be redeveloped into a mixed land use, medium to high density residential dwellings with green open space. • Previous investigation, historical information and site inspection observations identified the potential for contamination due to various, possible sources, as listed in **Section 5**. • The investigation must provide supportive information on the environmental conditions of the site to determine the site's suitability for the proposed use.
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 following decisions are needed: • Has the site been adequately characterised with sufficient and appropriate sampling coverage (vertical and lateral) to assess for the presence of potential contamination sources? • Has the nature, source and extent of any onsite impacts (soil and/or groundwater) been defined? • What influence do site-specific, geologic and hydrogeological conditions have on the fate and transport of any impacts that may be identified? • Does the degree of impacts 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 selection and design of an appropriate remedial strategy, assuming remedial action is necessary? If not, what are the remaining data gaps requiring closure?
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 include: • Proposed development plans and intended land use; • Previous investigation presented in **Section 3**. • Areas of concern identified during the site inspection, prior to intrusive investigations. • National (NEPC, 2013) and State-based (NSW EPA, various) environmental guidelines. • Investigation results to verify the presence of onsite contamination and to evaluate the risks posed to potential, sensitive receptors. • Relevant COPCs (discussed in **Section 5.3**), to be used for laboratory analysis of selected soil and creek water samples.
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 investigation will be conducted within the cadastral site boundaries, which define the extent of the investigation, as indicated on **Figure A.2a & Figure A.2b in Appendix A**. • Vertical – Investigations will be advanced to the depth of residual soils or bedrock. • Temporal – The findings of this assessment will hold true for as long as the site use remains passive in nature; that is, for as long as the site is used for the proposed use and there are no activities taking place onsite or on immediately adjacent (upgrading) properties that may compromise onsite environmental conditions.
5. Develop the Analytic Approach (Develop a decision rule)	The decision rules for the investigation were: • If the concentrations of contaminants in the soil and groundwater data exceed the adopted criteria; then assess the

DQO Steps	Details
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	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 6-2**.
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 is that: – The 95% Upper Confidence Limit (UCL) of the mean for chemicals of concern exceed land use criteria (presented in **Section 6.6**).
	• The acceptance of the site was based on the probability that: – The 95% UCL of the mean will satisfy the given site criterion. Therefore a limit on the decision error was 5% that a conclusive statement may be incorrect. – The standard deviation of the results was less than 50% of the relevant remediation acceptance criterion. – No single result exceeded the land use criteria by 250% or more. • Soil and groundwater concentrations for chemicals of concern 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).
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	• 34 soil sampling locations, distributed in a mixed systematic / targeted pattern across the site. Also previously 57 sampling location were investigated as a part of WSP investigation (WSP, 2018). • An upper soil profile sample was collected at each borehole location and tested for chemicals of concern, to assess the environmental condition of the fill layer, and for potential impacts from historical, above-ground activities. Further sampling was also performed in deeper soil layers. Samples were selected for analytical testing based on field observations (including visual and olfactory evidence). • Collection of groundwater samples from 15 groundwater monitoring wells (12 newly installed in addition to the previously installed groundwater monitoring wells). However, nine groundwater samples were collected due to one groundwater monitoring well from the previously installed was destroyed and five of the newly installed monitoring wells were dry.

6.3 Data Quality Indicators

To ensure that the investigation data were of an acceptable quality, the investigation data set was assessed against the data quality indicators (DQI) outlined in **Table 6-2**, which related to both field and laboratory-based procedures. The assessment of data quality is discussed in **Section 7**.

Table 6-2 Data Quality Indicators

Data Quality Objective	Data Quality Indicator	Acceptable Range
Accuracy	Field – Trip blank (laboratory prepared) Laboratory – Laboratory control spike and matrix spike	< laboratory limit of reporting (LOR) Prescribed by the laboratories
Precision	Field – Blind replicate and spilt duplicate Laboratory – Laboratory duplicate and matrix spike duplicate	< 30 % relative percentage difference (RPD [%]) Prescribed by the laboratories
Representativeness	Field – Trip blank (laboratory prepared) Laboratory – Method blank	< laboratory limit of reporting (LOR) Prescribed by the laboratories
Completeness	Completion (%)	-

6.4 Sampling Rationale

With reference to the preliminary CSM described in **Section 5**, soil and groundwater investigation works were planned in accordance with the following rationale:

- Sampling from 34 test bore locations, located using a mixed systematic- / targeted-sampling pattern, to characterise *in situ* soils;
- Collection of five (5) samples from 1m below the hypothetical finished floor level of a two-level basement to investigate the extent of actual or potential acid sulfate soils (ASS);
- Completion of a single groundwater monitoring event (GME), utilising the previous two groundwater monitoring wells (as one was missing) in addition to the newly installed twelve (12) monitoring wells located close to the up and down gradient site boundaries, to assess potential groundwater impacts; and
- Laboratory analysis of representative soil and groundwater samples for the identified chemicals of concern.

6.5 Investigation Constraints

This DSI was constrained by the existence of the shallow bedrock in multiple locations. Consequently five groundwater monitoring wells were dry in addition to one the wells contained a small amount of water to be tested only PFAS (30-BH104M). Also one the previously installed monitoring wells by WSP in the western property was missing due to concrete placement in the same area.

6.6 Assessment Criteria

The criteria adopted for this project are outlined in **Table 6-3**. These were selected from published guidelines that are endorsed by national and state regulatory authorities, with due consideration of the exposure scenario that is expected for various parts of the site, the likely exposure pathways and the identified potential receptors.

Table 6-3 Adopted Investigation Levels for Soil and Groundwater

Environmental Media	Adopted Guidelines	Rationale
Soil	NEPC (2013) Soil HILs, HSLs and Management Limits for TRHs	**Soil Health-based Investigation Levels (HILs)** All samples within properties 32 Waratah Street and 112 Wharf Road were assessed against the NEPC (2013) HIL-B thresholds for residential with limited access to soil land use. All samples within property 30 Waratah Street was assessed against the NEPC (2013) HIL-C thresholds for public open space land use **Soil Health-based Screening Levels (HSLs)** The NEPC (2013) Soil HSL-D thresholds for commercial and industrial sites for vapour intrusion were applied, to assess potential human health impacts from residual vapours resulting from petroleum, BTEX and naphthalene. Soils asbestos results were assessed against the NEPC (2013) Soil HSL thresholds for “all forms of asbestos”. **Management Limits for Petroleum Hydrocarbons** Where the HSLs were exceeded for petroleum hydrocarbons, soil samples were assessed against the NEPC (2013) *Management Limits* for the TRH fractions F1 – F4 to assess propensity for phase-separated hydrocarbons (PSH), fire and explosive hazards and adverse effects on buried infrastructure.
Groundwater	ANZG (2018) GILs for Marine Waters	**Groundwater Investigation Levels (GILs) for Marine Water** ANZG (2018) Trigger Values (TVs) for 95% level of protection of aquatic ecosystems for Marine Waters; however, the 95% TVs were applied for the bio-accumulative metals cadmium and mercury. Marine criteria were considered relevant as the closest receptor was Parramatta River which is located in the immediate vicinity of the site and understood to be tidally influenced. Where no marine water criteria are provided the 90% level of protection of aquatic ecosystems for Fresh Waters GILs have been adopted.
	NEPC (2013) Groundwater HSLs for Vapour Intrusion	**Health-based Screening Levels (HSLs)** The NEPC (2013) groundwater HSLs for vapour intrusion were used to assess potential human health impacts from residual vapours resulting from petroleum, BTEX and naphthalene impacts. The *HSL D* thresholds for commercial and industrial sites were applied for groundwater.
	NEPC (2013) GILs for Drinking Purposes	**Drinking Water GILs** The NEPC (2013) GILs for drinking water quality were applied for specific parameters where freshwater/marine GILs were not provided.

For the purposes of this investigation, the adopted soil assessment criteria are referred to as the Soil Investigation Levels (SILs) and the adopted groundwater assessment criteria are referred to as the Groundwater Investigation Levels (GILs). SILs and GILs are presented alongside the analytical results in the corresponding summary tables, which are discussed in **Section 8**.

6.7 Soil Investigation

The soil investigation works conducted at the site are described in **Table 6-4**. Test bore locations are illustrated in **Figure A.2a & Figure A.2b in Appendix A**.

Table 6-4 Summary of Soil Investigation Methodology

Activity/Item	Details
Fieldwork	The field work was conducted on 20, 21 and 22 April, 2021. ▪ 30 Waratah Street (12 borehole locations): ‣ (30-BH106M) targeted the former UST area; ‣ (30-BH104) targeted the generator/diesel tank; ‣ (30-BH101) targeted any potential contamination from the Nylon Manufacturing area; ‣ (30-BH102M) targeted the wash bay; and ‣ The reminder of the borehole locations was located systematically across the property. ▪ 32 Waratah Street (7 borehole locations): ‣ (32-BH102) targeted the offices area; ‣ (32-BH103) & (32-BH106) targeted workshop/warehouse; ‣ (32-BH104M) & (32-BH107M) targeted each of the incinerators; and ‣ The reminder of the borehole locations was located systematically across the property. ▪ 112 Wharf Road (13 borehole locations): ‣ (112-BH106M) targeted the water tank and the diesel power generator; ‣ (112-BH108), (112-BH109) & (112-BH110M) targeted the bitumen car park area which was previously used for manufacturing pharmaceutical products; ‣ (112-BH110M), (112-BH111) & (112-BH112M) targeted the former manufacturing area and the diesel tank for the old generator; and ‣ The reminder of the borehole locations was located systematically across the property. ▪ 82 Hughes Avenue (2 borehole locations): ‣ The main objective was to investigate the ASS/PASS material and the installation of two groundwater monitoring wells in order to furtherly assess the groundwater conditions within the property. All borehole locations were presented in **Figure A.2a & Figure A.2b in Appendix A and** discussed in **Section 8**.
Drilling Method and Investigation Depth	The test borehole locations were drilled using a mechanical (ute-mounted, solid flight auger drilling rig). Only one location (30-BH112) was drilled using a manuak (had auger) techniques (**Appendix G**).
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 Unified Soil Classification System (USCS) and Australian Standard (AS) 4482.1-2005. Bore logs are presented in **Appendix G**.

Activity/Item	Details
Field Observations (including visual and olfactory signs of potential contamination)	A summary of field observations is provided, as follows: ▪ Fibre cement sheet fragments were not observed in drilling cuttings and on the surface as well. ▪ No signs of ash or charcoal materials were detected in any of the drilled boreholes. ▪ No visual signs of oil staining were observed. ▪ No suspicious odours were detected during any stage of the field investigation programme.
Soil Sampling	Soil samples were collected using a dry grab method (unused, dedicated nitrile gloves) and placed into laboratory-supplied, acid-washed, solvent-rinsed glass jars. Blind field duplicates were separated from the primary samples and placed into glass jars. A small amount of duplicate was collected from each soil sample and placed into a zip-lock bag for Photo-ionisation Detector (PID) screening. A small amount of duplicate was separated from all fill samples and placed into a zip-lock bag for asbestos analysis. Two additional amount of duplicate was separated from 7mBGL (1 m below the hypothetical two level basements) at targeted five locations and placed into a zip-lock bag for ASS analysis.
Decontamination Procedures	The drilling rods and hand auger bucket were decontaminated between sampling locations with potable water until the augers were free of all residual materials.
Sample Preservation	Samples were stored in a refrigerated (ice-filled) chest, whilst on-site and in transit to the laboratory. All samples were submitted and analysed within the required holding period, as documented in laboratory reports discussed in a later section.
Management of Soil Cuttings	Soil cuttings were used as backfill for completed boreholes.
Quality Control and Laboratory Analysis	Soil samples were submitted for analysis of previously-identified COPC by SGS Laboratories (SGS). QA/QC testing comprised intra-laboratory duplicates ('field duplicates') tested blind by SGS and an inter-laboratory split field duplicate tested by Envirolab Services (Envirolab). All samples were transported under strict Chain-of-Custody (COC) conditions and COC certificates and laboratory sample receipt documentation were provided to EI for confirmation purposes, as discussed in **Section 7**.
Soil Vapour Screening	Screening for potential VOCs in collected soil samples was conducted using a Photo-ionisation Detector (PID), fitted with a 10.9 eV lamp, which was calibrated immediately prior to sampling. PID results were low, ranging from 0.1 to 2.3 ppm. PID readings for each sample from the test boreholes are presented in the test borehole logs (**AppendiG I**) and field notes (**Appendix H**). The PID calibration certificate is included in the field date sheets in **Appendix F**.

6.8 Groundwater Investigation

The groundwater investigation works conducted at the site are described in **Table 6-5**. Monitoring well locations are illustrated in **Figure A.2a & Figure A.2b in Appendix A**.

Table 6-5 Summary of Groundwater Investigation Methodology

Activity/Item	Details
Fieldwork	Groundwater monitoring wells were installed and developed on during the drilling

Activity/Item	Details
	works which were completed on 20, 21 and 22 April 2021. Water level gauging, well purging, field testing and sampling were conducted on 30 April 2021.
Well Construction	Test bores were converted to groundwater monitoring wells as follows: ▪ 82-BH101M, 2.0m deep, down-gradient well targeting drum store; ▪ 82-BH102M, 5.8m deep, down-gradient well targeting manufacturing area; ▪ 30-BH102M, 4.55m deep, up-gradient well; ▪ 30-BH106M, 6.4m deep, down-gradient well targeting former UST area; ▪ 30-BH110M, 7.5m deep, down-gradient well; ▪ 30-BH111M, 7.6m deep, down-gradient well; ▪ 32-BH104M, 1.6m deep, down-gradient well targeting an incinerator; ▪ 32-BH107M, 2.1m deep, down-gradient well targeting an incinerator; ▪ 112-BH106M, 2.2m deep, down-gradient well targeting the water tank and diesel power generator; ▪ 112-BH110M, 1.4m deep, down-gradient well targeting manufacturing area; ▪ 112-BH112M, 1.5m deep, down-gradient well targeting diesel tank for old generator; ▪ 112-BH113M, 4.3m deep, up-gradient well; and Drilled by HartGEO Pty Ltd using a ute mounted, solid flight auger rig. Well construction details are tabulated in **Table 9-2** and documented in the bore logs presented in **Appendix G**.
Well Construction (continued)	Well construction was in general accordance with the standards described in NUDLC (2012) and involved the following: ▪ 50mm, Class 18 uPVC, threaded, machine-slotted screen and casing, with slotted intervals set to screen to at least 500mm above the standing water level to allow sampling of phase-separated hydrocarbon product, if present; ▪ base and top of each well was sealed with a uPVC cap; ▪ annular, graded sand filter was used to approximately 500mm above top of screen interval; ▪ granular bentonite was applied above annular filter to seal the screened interval; ▪ drill cuttings were used to backfill the bore annulus to just below ground level; and ▪ surface completion comprised a steel road box cover, set in neat cement and finished flush with the concrete slab level for all installed groundwater monitoring wells.
Well Development	Well development was conducted directly following installation. This involved agitation and water removal within the full length of the water column using a dedicated, HDPE, disposable bailer. Bailing was continued until dry.
Well Survey (Elevation and Location)	Well elevations were surveyed in metres relative to Australian Height Datum (m AHD) and marked on the survey plan provided by the client .
Well Gauging and Groundwater Flow Direction	All monitoring wells were gauged for standing water level (SWL) prior to purging at the commencement of the GME on 30 April, 2021. All measured SWLs are shown in **Table 9-2**. A transparent HDPE bailer was used to visually assess for the presence PSH prior to the commencement of well purging. PSH was not detected in any well. Based on the reduced water levels (RWLs, i.e. SWLs corrected to AHD) calculated for each monitoring well (**Table 9-3**), groundwater level contours were interpreted for the site as shown in **Figure A.3a & Figure A.3b in Appendix A**. The direction of groundwater flow was inferred to be:

Activity/Item	Details
	▪ 82 Hughes Avenue: in a southeast direction; ▪ 30 Waratah Street: in a south direction; ▪ 32 Waratah Street: in a south to south west direction; and ▪ 112 Wharf Road: in a south west direction.
Well Purging & Field Testing	No volatile organic odours were detected during any stage of well purging. Measurement of water quality parameters was conducted repeatedly during well purging and were recorded onto field data sheets (**Appendix H**) once water quality parameters stabilised. In all tested wells groundwater was initially observed to be brown/grey in colour with suspended sediments (SS). Field measurements for dissolved oxygen (DO), electrical conductivity (EC), reduction-oxidation potential (redox), temperature and pH were also recorded during purging. Purged water volumes removed from each well and field test results are summarised in **Table 9-3**.
Groundwater sampling	All groundwater monitoring wells were purged and sampled using low-flow/minimal draw down sampling method with a MicroPurge kit (MP15) and a portable MicroPurge pump following well gauging. The MicroPurge system incorporated a low density poly-ethylene (LDPE) pump bladder, and a Teflon-lined LDPE sample delivery tube. The system used for this investigation employed pressurised carbon dioxide gas to regulate groundwater flow. Pump pressure and pumping cycles were adjusted accordingly to regulate extraction flow rate, and to avoid causing excessive drawdown of water level during the sampling process. Field measurement of water quality parameters was conducted continuously on purged groundwater with a water quality meter (Hanna Multi Parameter 9829) positioned within an open flow-through cell. The measured parameters were recorded onto a field data sheet (**Appendix H**), along with the purged water volume at the time of measurement. Groundwater sampling was performed when three consecutive readings of groundwater parameter indicated stabilisation; as per the specified ranges detailed below: ▪ Temperature: ± 0.2ºC ▪ Electrical Conductivity: ± 3% of the read value; ▪ Redox: ± 20 mV; ▪ DO: ± 10% of the read value; and ▪ pH: ± 0.2 pH unit. Total water volume purged and stabilised groundwater parameters at each groundwater monitoring well are summarised in **Table 9-3**.
Decontamination Procedure	Decontamination was not required as the sampling equipment was stored and transported prior to use in factory-sealed, plastic sleeves, while each bailer was dedicated to each individual well. All sample containers were supplied by the laboratory for the particular project and only opened once immediately prior to sampling. While ice was used to keep the samples cool, all melt water was continuously drained from the esky to prevent cross-contamination of samples. The water level probe and water quality kit probes were washed in a solution of potable water and Decon 90, then rinsed with potable water between measurements/wells.
Sample Preservation	Sample containers were supplied by the laboratory with the following preservatives:

Activity/Item	Details
	▪ one, 1 litre amber glass, acid-washed and solvent-rinsed bottle; ▪ one, 500mL plastic bottle for PFAS sampling; ▪ four, 40ml glass vials, pre-preserved with dilute hydrochloric acid, Teflon-sealed; and ▪ one, 125mL, HDPE bottle, pre-preserved with dilute nitric acid (1 mL). Samples for metals analysis were field-filtered using 0.45µm pore-size filters. All containers were filled with sample to the brim then capped and stored in ice-filled chests, until completion of the fieldwork and during sample transit to the laboratory.
Quality Control & Laboratory Analysis	All groundwater samples were submitted for analysis of previously-identified chemicals of concern by SGS. QA/QC testing comprised intra-laboratory duplicates ('field duplicates') tested blind by SGS and an inter-laboratory split field duplicate tested by Envirolab. All samples were transported under strict COC conditions and COC certificates and laboratory sample receipt documentation were provided to EI for confirmation purposes.
Sample Transport	After sampling, refrigerated sample chests were transported to SGS using strict Chain-of-Custody (COC) procedures. Inter-laboratory duplicate (ILD) samples were forwarded to Envirolab for QA/QC analysis. A Sample Receipt Advice (SRA) was provided by each laboratory to document sample condition upon receipt. Copies of SRA and COC certificates are presented in **Appendix I**.

7. Data Quality Assessment

The assessment of data quality is defined as the scientific and statistical evaluation of data to determine if they meet the objectives for the project (USEPA 2006). Data quality assessment included an evaluation of the compliance of the field sampling and laboratory analytical procedures, as well as an assessment of the accuracy and precision of these data from the field (blind and split) duplicates and laboratory quality control measurements. The findings of the data quality assessment in relation to the current investigation at the site are discussed in detail in **Appendix K**.

The QC measures generated from the field sampling and laboratory analytical program are summarised in **Table 7-1**:

Table 7-1 Quality Control Process

Data Quality	Control	Conformance [Yes, Part, No]	Report Sections
Preliminaries	Data Quality Objectives established	Yes	See DQO/DQI
Field work	Suitable documentation of fieldwork observations including borehole logs, sample register, field notes, calibration forms	Yes	See Appendices
Sampling Plan	Use of relevant and appropriate sampling plan (density, type, and location)	Yes	See sample rationale
	All media sampled and duplicates collected	Yes	Soil vapour not required
	Use of approved and appropriate sampling methods (soil, groundwater, air quality)	Yes	See methodology (Air quality was not required)
	Selection of soil samples according to field PID readings (where VOCs are present)	Yes	See methodology
	Preservation and storage of samples upon collection and during transport to the laboratory	Yes	See methodology
	Appropriate Rinsate, Field and Trip Blanks taken	Yes	See methodology
	Completed field and analytical laboratory sample COC procedures and documentation	Yes	See laboratory reports
Laboratory	Sample holding times within acceptable limits	Yes	See laboratory QA
	Use of appropriate analytical procedures and NATA-accredited laboratories	Yes	See laboratory report
	LOR/PQL low enough to meet adopted criteria	Yes	See laboratory appendix
	Laboratory blanks	Yes	See laboratory QA/QC
	Laboratory duplicates	Yes	See laboratory QA/QC

Data Quality	Control	Conformance [Yes, Part, No]	Report Sections
	Matrix spike/matrix spike duplicates (MS/MSDs)	Yes	See laboratory QA/QC
	Surrogates (or System Monitoring Compounds)	Yes	See laboratory QA/QC
	Analytical results for replicated samples, including field and laboratory duplicates and inter-laboratory duplicates, expressed as Relative Percentage Difference (RPD)	Yes	See QA Tables Appendices
	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
Reporting	Report reviewed by senior staff to assess project meets desired quality, EPA guidelines and project outcomes.	Yes	See document control

7.1 Quality Overview

On the basis of the field and analytical data validation procedure employed, the overall quality of the analytical data produced for the site was considered to be of an acceptable standard for interpretive use and preparation of a conceptual site model (CSM).

8. Results

8.1 Soil Investigation Results

8.1.1 Site Geology and Subsurface Conditions

The general site lithology encountered during the drilling of the boreholes and installation of monitoring wells may be described as a layer of filling overlying residual clay, with Sandstone bedrock at depth along with the mangroves followed by Parramatta river located at the southern boundary of the site. The geological information obtained during the investigation is summarised in **Table 8-1** and borehole logs from these works are presented in **Appendix G**.

Table 8-1 Generalised Subsurface Profile (m bgl)

Layer	Description	Depth to top and bottom of layer (m bgl)			
		82 Hughes Avenue, Ermington	30 Waratah Street, Melrose Park	32 Waratah Street, Melrose Park	112 Wharf Road, Ermington
Concrete slab	-	-	0.0-0.15	-	0.0-0.2
Asphalt	-	-	0.0-0.3	-	0.0-0.04
Fill	Gravelly Sand; fine to coarse grained, dark brown, with fine to coarse grained and sub-angular to angular gravels, with a trace of brick fragments, dry, no odour. Gravelly Sandy Clay; medium plasticity, brown, with fine to coarse grained sand, with fine grained gravels, no odour. Sandy Clay; medium plasticity, orange brown, with fine to coarse grains, moist, no odour. Silty Clay; medium plasticity, red/orange mottled brown, with a trace of fine to coarse grained sandstone gravel, moist, no odour. Silty Sand; fine to coarse grained, red, moist, no odour. Silty Clayey Sand; fine to coarse grained, dark brown, with fine to coarse grained sand, moist, no odour. Crushed Sandstone; extremely weathered, orange/ grey, dry, no odour.	0.0 – 4.2	0.0-6.4+	0.0 – 1.0	0.0-1.7
Natural soils	Sandy silty Clay; medium plasticity, dark brown/dark grey, with fine to coarse grained sand, wet, organic odour. Silty Clay; low plasticity; grey mottled orange, moist, stiff, no odour. Peaty Clayey Sand; fine grained, dark grey, with a trace of shell fragments, wet, no odour. Clay; high plasticity, grey mottled orange, with shell fragments, wet, sulfur odour. Gravelly Sand (weathered Sandstone); fine to coarse grained, light orange/grey, with fine to coarse grained and sub-rounded sandstone gravel, dry, no odour.	-	1.1-7.6+	0.2 – 2.1+	0.2-2.2
Bedrock	Sandstone; extremely weathered, orange, no odour. Shale; extremely weathered , grey, no odour.	1.7–5.8+	1.7/5.1+	1.6/2.0/2.1+	0.6-3.0/2.2+ 3.0-4.3+

Note 1 + Termination depth of borehole.
Note 2 For each individual borehole details, see **Appendix G**

8.1.2 Field Observations and PID Results

Soil samples were obtained from the test bores at various depths ranging between 0.1m to 7.0mBGL. 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, and charcoal) and the following observations were noted:

- No visual or olfactory evidence of hydrocarbon impacts were noted at any of the borehole locations;
- Organic and sulfur odour was observed in the deep borehole location at 30 Waratah Street
- Some minor brick fragments were noted in the fill layers;
- Asbestos cement sheeting was not observed in the examined *in situ* fill soils; and
- Low VOC readings were identified by the PID screening of the soil headspace samples, ranging from 0.1 to 2.3 parts per million (ppm). The PID results are shown in the borehole logs (**Appendix G**). The samples showing slightly higher PID values were therefore assigned for laboratory analysis.

8.2 Groundwater Investigation Results

8.2.1 Monitoring Well Construction

A total of 12 groundwater monitoring wells were installed across the site in addition to the three previously installed groundwater monitoring wells. Well construction details for the installed groundwater monitoring wells are summarised in **Table 8-2**.

Table 8-2 Monitoring Well Construction Details

Well ID	Bore Depth (m bgl)	RL (GL)	RL (TOC)	Screen Interval (m bgl)	Lithology Screened
30-BH102M	4.55	4.68	4.432	1.55-4.55	Fill
30-BH106M	6.40	4.375	4.245	2.00-5.00	Fill
30-BH110M	7.50	4.435	4.355	4.50-7.50	Clay/Peaty Clayey Sand
30-BH111M	7.60	4.572	4.472	4.60-7.60	Clay/Peaty Clayey Sand
32-BH104M	1.60	7.728	7.648	1.00-1.60	Weathered Sandstone
32-BH107M	2.10	6.741	6.641	1.00-2.10	Clay/Weathered Sandstone
112-BH106M	2.20	8.100	7.970	1.70-2.20	Weathered Sandstone
112-BH110M	1.40	7.800	7.680	0.90-1.40	Silty Sand
112-BH112M	1.50	8.835	8.715	0.60-1.50	Weathered Sandstone
112-BH113M	4.30	13.235	13.115	1.30-4.30	Weathered Sandstone/Shale
82-BH101M	2.00	5.838	5.718	1.50-2.00	Fill/Sandstone
82-BH102M	5.80	5.466	5.386	3.80-5.80	Fill/Sandstone
MW01 (GSK)	5.50	2.490	2.370	3.50-5.50	Weathered Sandstone/Sandy Clay
MW03 (GSK)	9.00	14.443	14.363	7.00-9.00	Sandy Clay

Note 1 m bgl = metres below ground level.

Note 2 RL = Reduced Level – Surveyed elevation in metres relative to Australian Height Datum (m AHD).
Note 3 TOC = top of well casing.
Note 4 RL (TOC) = Surveyed elevation at TOC in m AHD.

8.2.2 Field Observations and Water Test Results

A single GME was conducted on all wells on 30 April, 2021. Standing water levels (SWLs) were measured within each well prior to well purging, the results of which were recorded with well purge volumes and field-based water test results. A summary of the recorded field data is presented in **Table 8-3** and copies of the completed Field Data Sheets are included in **Appendix H**.

Table 8-3 Groundwater Field Data (GME date 30 April 2021)

Well ID	SWL (mBTOC)	RL (TOC)	WL (mAHD)	Purge Vol (L)	DO (mg/L)	Field pH	Field EC (µS/cm)	Temp (°C)	Redox (mV)	*Odour Turbidity*
30-BH102M	2.32	4.432	2.112	2.0	0.43	6.09	1,629	21.10	270.6	None / High
30-BH106M	3.08	4.245	1.165	2.5	0.22	6.80	3,006	19.59	199	None / High
30-BH110M	3.09	4.355	1.265	2.5	0.00	6.01	54,380	19.66	239.2	None / High
30-BH111M	3.27	4.472	1.202	2.5	0.00	7.06	23,000	20.17	111.3	None / High
32-BH104M	Dry	7.648	-	-	-	-	-	-	-	-
32-BH107M	Dry	6.641	-	-	-	-	-	-	-	-
112-BH106M	Dry	7.970	-	-	-	-	-	-	-	-
112-BH110M	Dry	7.680	-	-	-	-	-	-	-	-
112-BH112M	Dry	8.715	-	-	-	-	-	-	-	-
112-BH113M	3.20	13.115	9.915	1.5	0.59	5.91	596	20.57	319.7	None / High
82-BH101M	Dry	5.718	-	-	-	-	-	-	-	-
82-BH102M	4.07	5.386	1.316	2.5	0.48	5.49	3,077	20.06	310.5	None/ Med.
MW01 (GSK)	1.25	2.370	1.12	2.0	0.98	6.64	664	19.02	250.6	None / High
MW03 (GSK)	3.83	14.363	10.533	3.5	0.62	4.68	3,942	20.07	279.4	None / High

Notes:
SWL – Standing Water Level, as measured from TOC (top of well casing) prior to groundwater sampling.
m BTOC – metres below top of well casing.
RL (TOC) – Reduced Level, elevation at TOC in metres relative to Australian Height Datum (m AHD).
† WL = Calculated groundwater level, in m AHD (calculated as RL – SWL).
L – litres (referring to volume of water purged from the well prior to groundwater sample collection).

With reference to **Table 8-3**, the field pH data indicated that the groundwater was acidic to neutral (pH ranged from 5.49 to 7.06) with the exception of MW03 which was reported as a pH of 4.68. Electrical Conductivity (EC) measurements were in the range 1,629 to 54,380 µS/cm (with the exception of 112-BH113M (596) and MW01(GSK) (664 µS/cm)) indicating that the groundwater was brackish to saline in terms of water salinity.

8.3 Laboratory Analytical Results

8.3.1 Soil Analytical Results

A summary of laboratory results showing test sample quantities, minimum/maximum analyte concentrations and samples found to exceed the SILs, is presented in **Table 8-4**. More detailed tabulation of results showing the tested concentrations for individual samples alongside the adopted soil criteria are presented in **Table B1** at the end of this report.

Table 8-4 Summary of Soil Analytical Results

No. of primary samples	Analyte	Min. Conc. (mg/kg)	Max. Conc. (mg/kg)	Sample locations exceeding investigation levels
Hydrocarbons				
58	TRH C6-C10 minus BTEX (F1)	<25	<25	None
58	TRH >C10-C16 - Naphthalene (F2)	<25	27	None
58	TRH >C16-C34 (F3)	<90	240	None
58	TRH >C34-C40 (F4)	<120	300	None
BTEX				
58	Benzene	<0.1	<0.1	None
58	Toluene	<0.1	<0.1	None
58	Ethyl benzene	<0.1	<0.1	None
58	Total xylenes	<0.3	<0.3	None
PAH				
58	Naphthalene	<0.1	<0.1	None
58	Benzo(a)pyrene	<0.1	0.9	None
58	Carcinogenic PAHs (B(α)P TEQ)	<0.3	1.4	None
58	Total PAHs	<0.8	7.9	None
Heavy Metal				
60	Arsenic	2	2,300	30-BH101_4.4-4.5, 30-BH101_5.4-5.5 & 30-BH102M_2.0-2.1
58	Cadmium	<0.3	17	None
58	Chromium (Total)	2.4	160	None
58	Copper	3.6	1,400	30-BH101_4.4-4.5, 30-BH106M_1.1-1.2, 30-BH106M_3.4-3.5 & 32-BH106_1.4-1.5

No. of primary samples	Analyte	Min. Conc. (mg/kg)	Max. Conc. (mg/kg)	Sample locations exceeding investigation levels
60	Lead	2	1,600	30-BH101_4.4-4.5
58	Mercury	<0.05	4.7	None
58	Nickel	1	68	None
58	Zinc	9.8	2,700	30-BH101_4.4-4.5, 30-BH106M_0.3-0.4, 30-BH106M_1.1-1.2, 30-BH106M_1.9-2.0 & 30-BH107_0.3-0.4
PFAS				
13	PFOS/PFHxS	<0.0016	0.0098	None
13	PFOA	<0.0008	0.0073	None
Pesticides				
22	OCPs	<1	<1	None
22	OPPs	<1.7	<1.7	None
PCBs				
22	Total PCBs	<1	<1	None
Asbestos				
58	Asbestos	No detection	No detection	None

With reference to **Table B1**, all tested soil results were below the corresponding health based SILs for residential with minimal soil access land use and public open space land use, with the exception of the following properties no. 30 and 32 Waratah Street which showed some elevated heavy metals higher than the criteria:

30 Waratah Street:

- Sample 30-BH101_4.4-4.5:
  - arsenic (2,300 mg/kg) exceeded HIL-C and the ecological criteria;
  - copper (1,400 mg/kg) exceeded the ecological criteria;
  - lead (1,600 mg/kg) exceeded HIL-C and the ecological criteria; and
  - zinc (1,300 mg/kg) exceeded the ecological criteria.
- Sample 30-BH101_5.4-5.5
  - arsenic (310 mg/kg) exceeded HIL-C and the ecological criteria
- Sample 30-BH102M_2.0-2.1
  - arsenic (200 mg/kg) exceeded the ecological criteria
- Sample 30-BH106M_0.3-0.41

- copper (520 mg/kg) exceeded the ecological criteria

- Sample 30-BH106M_1.1-1.2
  - copper (600 mg/kg) exceeded the ecological criteria; and
  - zinc (2,700 mg/kg) exceeded the ecological criteria
- Sample 30-BH106M_1.9-2.0
  - zinc (700 mg/kg) exceeded the ecological criteria
- Sample 30-BH106M_3.4-3.5
  - copper (290 mg/kg) exceeded the ecological criteria
- Sample 30-BH107_0.3-0.4
  - zinc (820 mg/kg) exceeded the ecological criteria

32 Waratah Street:

- Sample 32-BH106_1.4-1.5
  - copper (710 mg/kg) exceeded the ecological criteria

All data are tabulated and summarised in **Appendix B**, **Table B1**.

8.3.2 Groundwater Analytical Results

Laboratory analytical results for groundwater samples are summarised in **Table B2**, which also include the adopted GILs for marine waters. More detailed discussion showing each tested individual samples showing elevated concentration alongside the exceeded criteria are presented below for each property.

<u>82 Hughes Avenue:</u>

Heavy Metals

- GW-82-BH102M-1:
  - copper (5µg/L);
  - nickel (37µg/L); and
  - zinc (850µg/L);
- GW-EI-MW01-1:
  - copper (7µg/L);
  - nickel (12µg/L); and
  - zinc (50µg/L);
- GW-EI-MW03-1:
  - copper (21µg/L);
  - nickel (79µg/L); and
  - zinc (1,400µg/L);

TPHs, BTEX, PAHs, (1,4 Dioxane), PFAS and VOCs

All concentrations for the tested samples were below the laboratory detection limit and consequently below the adopted criterion.

30 Waratah Street:

Heavy Metals

- GW-30-BH102M-1:
  - copper (15µg/L);
  - arsenic (80µg/L); and
  - zinc (83µg/L);
- GW-30-BH106M-1:
  - copper (9µg/L);
  - nickel (11µg/L); and
  - zinc (99µg/L);
- GW-30-BH110M-1:
  - copper (6µg/L); and
  - zinc (580µg/L);
- GW-30-BH111M-1:
  - zinc (45µg/L);

TPHs, BTEX, PAHs, (1,4 Dioxane) and VOCs

TRH, VOC (including VOCC and BTEX) and PAH concentrations were below the corresponding laboratory detection limit and/or GIL with the exception of sample GW-30-BH102M-1 which showed cis-1,2-dichloroethene (11µg/L), however, it is below the adopted criteria for drinking water.

PFAS

All concentrations for the tested samples were below the adopted criteria with the exception of:

- Sample GW-30_BH111M-1 was reported showing a PFOS concentration of (29µg/L) which exceeded the adopted criteria.

32 Waratah Street:

All monitoring wells were dry in this property except the groundwater monitoring well (32-BH104M) which contained a quantity of groundwater enough as PFAS sample only.

The tested sample was below the adopted criterion.

112 Wharf Road:

Heavy Metals

GW-112-BH113M-1:

copper (15µg/L);

nickel (8µg/L); and

zinc (350µg/L).

TPHs, BTEX, PAHs, (1,4 Dioxane), PFAS and VOCs

All concentrations for the tested sample were below the laboratory detection limit and consequently below the adopted criterion.

8.3.3 Acid Sulfate Soils Analytical Results

The representative soil samples collected from properties 82 Hughes Avenue and 30 Waratah Street were analysed for the parameters recommended under the ASS Assessment Guidelines (Ahern, et al., 1998), to confirm the presence or absence of ASS.

For properties at 32 Waratah Street and 112 Wharf Road, bedrock was encountered between 0.9-1.7mBGL. Therefore, ASS is a low probability.

All laboratory analyses were conducted on discrete (un-composited) samples using NATA-registered methods. Results are summarised in **Table B3** and presented in more detail in a copy of the laboratory analytical report, which is provided in **Appendix J**.

pH

The pH and EC results were both conducted on 1:5 soil/water extracts. For all samples, pH was above 4, the threshold below which actual ASS are indicated. This suggests that no previous oxidation of sulfides has taken place so as to result on potential formation of sulfuric acid conditions.

It is well known that various natural constituents other than sulfide (e.g. organic matter, iron and manganese minerals) are also able to react with the peroxide, leading to the generation of acid. Indeed, such constituents, especially organic matter, were expected to be present in the examined soils, which may have accounted for the observed reduction in pH levels following oxidation (Ahern et al., 1998; EPA, 1995). Confirmatory analysis using the sPOCAS method was thus necessary to verify the presence and extent of any potential ASS.

Non-Oxidised and Oxidised pH Testing

Non-oxidised (KCl) pH testing and oxidised (Ox) pH testing were conducted. Laboratory results showed that all samples tested for (Ox) pH were well above 3.5, while pH (KCl) was also well above 4. Hence, no actual acid sulfate soils (AASS) were considered present on site.

sPOCAS

Suspended peroxide oxidation combined acidity (sPOCAS) and sulfate testing was conducted on samples at property 82 Hughes Avenue and 30 Waratah Street from 7mBGL (below the hypothetical two level basement).

82 Hughes Avenue:

The tested sample showed peroxide oxidisable sulfur (SPOS) result (<0.005%) was found to be below the Action Criterion for coarse textured soil (0.03% w/w where less than 1,000 tonnes of soil are to be excavated). In addition, the potential acid risk from un-oxidised sulfur compounds was considered to be low as each “acid trail” detected only low levels of actual (TAA) and low potential acidities (TPA), leading to the concentration of total sulfidic acidity (TSA) being reported at less than 5 moles H+ per tonne of soil for all tested samples (the corresponding Action Criterion for fine textured soil is 18 mol H+/tonne).

Potential effects of the proposed development

Given that actual and potential ASS were not detected at 7m BGL there is a low probability that ASS conditions will be generated during the proposed development works.

30 Waratah Street:

Two out of four samples were tested showing peroxide oxidisable sulphur (SPOS) exceeding the criteria (0.03%). However, the potential acid risk from un-oxidised sulphur compounds was considered to be low as each “acid trail” detected only low levels of actual (TAA) and low potential acidities (TPA), leading to the concentration of total sulfudic acidity (TSA) being reported at less than 5 moles H+ per tonne of soil for all tested samples (the corresponding Action Criterion for fine textured soil is 18 mol H+/tonne)

Potential effects of the proposed development

Potential ASS is expected down to 7m BGL and there is a risk that ASS will be disturbed during the proposed development works. Additional ASS assessment should to be carried out post-demolition.

9. Site Characterisation

9.1 Review of Conceptual Site Model

On the basis of investigation findings, the preliminary CSM discussed in **Section 5** has been refined and is summarised in **Table 5-1**, along with a qualitative assessment of the potential risks posed by complete exposure pathways.

Table 10-1 Refined Conceptual Site Model

Site Area	Potential Sources	Potential Contaminants	Media	Sensitive Receptor	Migration & Exposure Pathways	Potential Risk of Complete Exposure Pathway
82 Hughes Avenue, Ermington	Deleterious materials from the former buildings and impacted fill soils	Asbestos	Fill soils	Site Workers during demolition and construction Future site residents	Dermal Contact Ingestion Inhalation	M
	off-site source	Heavy metals	Ground-water	Parramatta River Site Workers during demolition and construction Future site residents	Dermal Contact Ingestion Inhalation	L
30 Waratah Street	Deleterious materials from the former buildings and impacted fill soils	heavy metals	Fill soils	Site Workers during demolition and construction Future site residents	Dermal Contact Ingestion Inhalation	M
	off-site source and/or onsite source	Heavy metals and PFAS	Ground-water	Parramatta River Site Workers during demolition and construction Future site residents	Dermal Contact Ingestion Inhalation	M-H
32 Waratah Street & 112 Wharf	off-site source and/or onsite source	Heavy Metals, Petroleum Hydrocarbons (including	Groundw ater	Site Workers during demolition and	Dermal Contact Ingestion	L-M

Site Area	Potential Sources	Potential Contaminants	Media	Sensitive Receptor	Migration & Exposure Pathways	Potential Risk of Complete Exposure Pathway
Road, Melrose Park NSW		PAHs), VOCs, PFAS and 1, 4-dioxane.		construction Future site residents	Inhalation	
112 Wharf Road, Melrose Park NSW	Deleterious materials from the former activities and impacted fill soils	Heavy metals	Soils	Site Workers during demolition and construction Future site residents	Dermal Contact Ingestion Inhalation	L-M
112 Wharf Road, Melrose Park NSW	Off-site source Former site activities	Heavy Metals	Soils/ Bedrock	Parramatta River Site Workers during demolition and construction Future site residents	Seepage into the subsurface soils, bedrock and groundwater. Dermal Contact Ingestion Inhalation	M

Note 1 L = Low Risk; M = Moderate Risk; H = High Risk

9.2 Data Gaps

Based on the refined CSM derived for the site post investigation, the following data gap has been identified:

- The lateral and vertical extent of the contamination underneath the existing buildings across the eastern part of the site which includes 30-32 Waratah Street and 112 Wharf Road, Melrose Park;
- The groundwater conditions in property no. 32 Waratah Street as many of the wells where dry.

It is considered that this data gap can be adequately closed through implementation of recommendations included within **Section 11**.

10. Conclusions

The property located at 82 Hughes Avenue, Ermington and 30 & 32 Waratah Street & 112 Wharf Road, Melrose Park, NSW was the subject of a Detailed Site Investigation, which was conducted in order to assess the nature and degree of on-site contamination associated with current and former industrial uses of the land. Based on the findings of this DSI it was concluded that:

- The site had mainly been used for industrial purposes.
- The sub-surface layers of the site were comprised of fill materials, overlying residual clays and sandstone bedrock.
- 82 Hughes Avenue:
  - Multiple environmental investigations have been completed and identified localised asbestos contamination impacts in 82 Hughes Avenue Ermington which is summarised in **Section 3**.
  - Acid Sulfate Soils screening assessment showed low probability of ASS.
  - Groundwater SWLs were at depths ranging from 1.37 to 3.91 meters below.
  - Results for the groundwater samples were all below the adopted GILs, with the exception of copper, nickel and zinc which is representative of the background conditions
- 30 Waratah Street:
  - All contaminants were below the adopted criteria with the exception of heavy metals reported concentrations which were above the adopted criteria.
  - Acid Sulfate Soils screening assessment showed a risk of ASS. Additional ASS assessment should to be carried out post-demolition.
  - Groundwater SWLs were at depths ranging from 2.45 to 3.37 meters below ground level.
  - Results for the groundwater samples were all below the adopted GILs, with the exception of copper, nickel, arsenic and zinc which is representative of the background conditions
  - Sample GW-30_BH111M-1 showed an elevated concentration of PFOS (29µg/L) which exceeded the adopted the criteria (0.13µg/L)
- 32 Waratah Street:
  - All contaminants were below the adopted criteria with the exception of sample 32-BH106_1.4-1.5 which reported a zinc concentration above the adopted criteria.
  - Acid Sulfate Soils screening assessment showed low probability of ASS due to the shallow bedrock.
  - All groundwater monitoring wells were dry except monitoring well 32-BH104M which contained a SWL of 1.36 mBGL.

- Results for the groundwater sample were limited amount and tested only for PFAS. The lab results showed concentrations below the adopted criteria.

- 112 Wharf Road:
  - All contaminants were below the adopted criteria.
  - Acid Sulfate Soils screening assessment showed low probability of ASS due to the shallow bedrock.
  - All groundwater monitoring wells were dry except monitoring well 112-BH113M which contained a SWL of 3.32 mBGL.
  - Results for the groundwater sample were all below the adopted GILs, with the exception of copper, nickel and zinc which is representative of the background conditions

Based on the findings of this DSI and with consideration of the Statement of Limitations (**Section 12**), EI concluded that widespread contamination was not present at the site. The site can be made suitable for the proposed development, subject to addressing the recommendations listed in **Section.11**.

11. Recommendations

In view of the findings of this investigation and in accordance with the NEPC (2013) guidelines, it is considered that the site can be made suitable for the proposed mixed land use, medium to high density residential dwellings with green open space on completion of the following recommendations:

- Preparation and implementation of a Remediation Action Plan (RAP). The RAP should include, but not necessarily be limited to, the following:
  - Preparation and implementation of a Remediation Action Plan (RAP), to address the fill soil contamination.
  - The RAP should also address the reported groundwater exceedances to confirm the quality of the groundwater.
  - A plan for validation works to confirm the sites environmental condition following remedial works; and
  - Procedures to deal with any unexpected finds identified during construction.
- The preparation and implementation of Asbestos Management Plan (AMP), in order to outline control measures that are required to prevent exposure of site personnel to any type of asbestos.
- A Waste Management Plan should be prepared in accordance with City of Parramatta Council DCP guidelines which should include:
  - Classification of all waste material to be removed from the site in accordance with the EPA (2014) Waste Classification Guidelines, Protection of the Environment Operations Act 1997, and Work Health and Safety Regulation 2017;
  - Assessment of any soil/fill material imported onto the site. Imported soil must:
    - be classified as virgin excavated natural material (VENM); or
    - have a classification certificate indicating it is suitable for the propsed land use.
- Preparation of a final site validation report by a qualified environmental consultant, certifying site suitability for the proposed development.

12. Statement of Limitations

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 investigation 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, 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 investigations and assessment.

EI's assessment is necessarily based upon the result of the site investigation and the restricted program of surface and subsurface sampling, screening and chemical testing which was set out in the 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.

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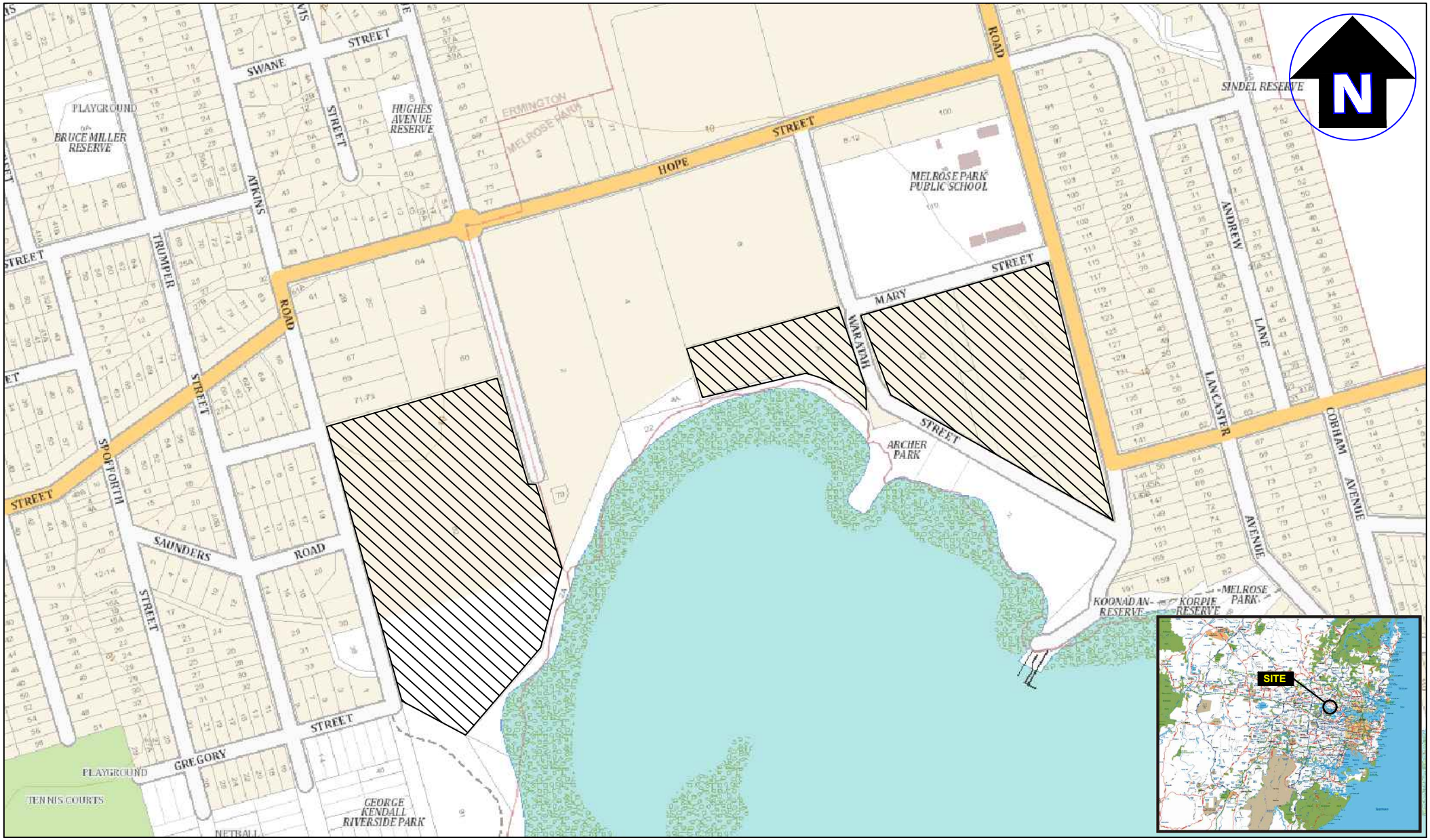
WHO (1996) *Guidelines for Drinking Water Quality*, World Health Organisation, 1996.

Abbreviations

ACM	Asbestos-containing materials
ASS	Acid sulfate soils
AST	Above-Ground Storage Tank
ANZECC	Australian and New Zealand Environment Conservation Council
ARMCANZ	Agriculture and Resource Management Council of Australia and New Zealand
B(a)P	Benzo(a)Pyrene (a PAH compound), - B(a)P TEQ Toxicity Equivalent Quotient
BH	Borehole
BTEX	Benzene, Toluene, Ethylbenzene, Xylene
COC	Chain of Custody
cVOCs	Chlorinated Volatile Organic Compounds (a sub-set of the VOC analysis suite)
DA	Development Application
DO	Dissolved Oxygen
DP	Deposited Plan
EC	Electrical Conductivity
Eh	Redox potential
EPA	Environment Protection Authority NSW
F1	TRH C_6 – C_{10} less the sum of BTEX concentrations (Ref. NEPM 2013, Schedule B1)
F2	TRH >C_{10} – C_{16} less the concentration of naphthalene (Ref. NEPM 2013, Schedule B1)
GIL	Groundwater Investigation Level
GME	Groundwater Monitoring Event
HIL	Health-based Investigation Level
HSL	Health-based Screening Level
km	Kilometres
LNAPL	Light, non-aqueous phase liquid (also referred to as PSH)
DNAPL	Dense, non-aqueous phase liquid
EIL	Ecological Investigation Level
ESL	Ecological Screening Level
m	Metres
m AHD	Metres Australian Height Datum
m BGL	Metres Below Ground Level
mg/m^3	Milligrams per cubic metre
mg/L	Milligrams per litre
µg/L	Micrograms per litre
mV	Millivolts
MW	Monitoring well
NATA	National Association of Testing Authorities, Australia
NEPC	National Environmental Protection Council
NSW	New South Wales
OEH	Office of Environment and Heritage, NSW (formerly DEC, DECC, DECCW)
PAHs	Polycyclic Aromatic Hydrocarbons
pH	Measure of the acidity or basicity of an aqueous solution
PSH	Phase-separated hydrocarbons (also referred to as LNAPL)
PQL	Practical Quantitation Limit (limit of detection for respective laboratory instruments)
QA/QC	Quality Assurance / Quality Control
RAP	Remediation Action Plan
SRA	Sample receipt advice (document confirming laboratory receipt of samples)
SWL	Standing Water Level
TDS	Total dissolved solids (a measure of water salinity)
TCLP	Toxicity Characteristics Leaching Procedure
TPH	Total Petroleum Hydrocarbons (superseded term equivalent to TRH)

TRH	Total Recoverable Hydrocarbons (non-specific analysis of organic compounds)
UCL	Upper Confidence Limit of the mean
USEPA	United States Environmental Protection Agency
UPSS	Underground Petroleum Storage System
UST	Underground Storage Tank
VOCs	Volatile Organic Compounds (specific organic compounds which are volatile)

Appendix A - Figures



eiaustralia
Practical Solutions for Built Environments
Suite 6.01, 55 Miller Street, PYRMONT 2009
Ph (02) 9516 0722 Fax (02) 9518 5088

Drawn:	T.M.
Approved:	-
Date:	-
Scale:	Not To Scale

Holdmark NSW Pty Ltd
Additional Geotechnical Investigation
82 Hughes Ave, 30 & 32 Waratah Street & 112 Wharf Road,
Melrose Park, NSW
Site Locality Plan

Figure:
A.1

Project: E25077.E02

LEGEND (Note: All locations are approximate)

- Site boundary
- Borehole/groundwater monitoring well location (EI, 2021)
- Groundwater monitoring well location (WSP, 2018)

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Practical Solutions for Built Environments
Suite 6.01, 55 Miller Street, PYRMONT 2009
Ph (02) 9516 0722 Fax (02) 9518 5088

Drawn:	T.M.
Approved:	A.I.
Date:	11-05-21

Holdmark NSW Pty Ltd
Detailed Site Investigation
82 Hughes Ave Ermington, 30 & 32 Waratah Street & 112 Wharf Road, Melrose Park NSW
Sampling Location Plan

Figure: A.2a

Project: E25077.E02

LEGEND (Note: All locations are approximate)

- Site boundary
- Borehole location
- Borehole/groundwater monitoring well location

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Practical Solutions for Built Environments
Suite 6.01, 55 Miller Street, PYRMONT 2009
Ph (02) 9516 0722 Fax (02) 9518 5088

Drawn:	T.M.
Approved:	A.I.
Date:	11-05-21

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Detailed Site Investigation
82 Hughes Ave Ermington, 30 & 32 Waratah Street & 112 Wharf Road, Melrose Park NSW
Sampling Location Plan

Figure: A.2b

Project: E25077.E02

Groundwater Exceedances		GW-Ei_MW03-1
Sampling Date		01/04/2021
Cu	µg/L	21
Ni	µg/L	79
Zn	µg/L	1400

Groundwater Exceedances		GW-82_BH102M-1
Sampling Date		01/04/2021
Cu	µg/L	5
Ni	µg/L	37
Zn	µg/L	850

Groundwater Exceedances		GW-Ei_MW01-1
Sampling Date		01/04/2021
Cu	µg/L	7
Ni	µg/L	12
Zn	µg/L	50

0 10 50 100
Approx. Scale (m)

Map Source: Near maps, Imagery Dated on: 15/04/2021

LEGEND (Note: All locations are approximate)

- Site boundary
- Groundwater monitoring well location (EI, 2021)
- Groundwater monitoring well location (WSP, 2018)
- Highlighted indicates analyte concentration value exceeding the GIL for marine water quality
- Groundwater contour
- Inferred groundwater flow

eiaustralia
Practical Solutions for Built Environments
Suite 6.01, 55 Miller Street, PYRMONT 2009
Ph (02) 9516 0722 Fax (02) 9518 5088

Drawn:	L.C.
Approved:	A.I.
Date:	28-05-21

Holdmark NSW Pty Ltd
Detailed Site Investigation
82 Hughes Ave, 30 & 32 Waratah St & 112 Wharf Rd, Melrose Park NSW

Groundwater Exceedances Plan and Groundwater Flow Direction at 82 Hughes Ave

Figure: A.3a

Project: E25077.E02

Soil Exceedances		30-BH102
Sampling Depth (m BGL)		2.0-2.1
As	mg/kg	200

Groundwater Exceedances		GW-30_BH102M-1
Sampling Date		01/04/2021
As	µg/L	80
Cu	µg/L	15
Zn	µg/L	83

Groundwater Exceedances		GW-30_BH113M-1
Sampling Date		01/04/2021
Cu	µg/L	15
Ni	µg/L	8
Zn	µg/L	350

Soil Exceedances		32-BH106
Sampling Depth (m BGL)		1.4-1.5
Cu	mg/kg	710

Groundwater Exceedances		GW-30_BH111M-1
Sampling Date		01/04/2021
Zn	µg/L	45
PFOS	µg/L	29

Groundwater Exceedances		GW-30_BH110M-1
Sampling Date		01/04/2021
Cu	µg/L	6
Zn	µg/L	580

Soil Exceedances		30-BH101
Sampling Depth (m BGL)		4.4-4.5
As	mg/kg	2300
Pb	mg/kg	1600
Cu	mg/kg	1400
Zn	mg/kg	1300
Sampling Depth (m BGL)		5.4-5.5
As	mg/kg	310

Soil Exceedances		30-BH106M
Sampling Depth (m BGL)		0.3-0.4
Zn	mg/kg	520
Sampling Depth (m BGL)		1.1-1.2
Cu	mg/kg	600
Zn	mg/kg	2700
Sampling Depth (m BGL)		1.9-2.0
Zn	mg/kg	700
Sampling Depth (m BGL)		3.4-3.5
Cu	mg/kg	290

Groundwater Exceedances		GW-30_BH106M-1
Sampling Date		01/04/2021
Cu	µg/L	9
Ni	µg/L	11
Zn	µg/L	99

Soil Exceedances		32-BH107
Sampling Depth (m BGL)		0.3-0.4
Zn	mg/kg	820

30-BH102M, 30-BH103, 30-BH108, 30-BH109, 30-BH110M, 30-BH111M, 30-BH112, 30-BH101, 30-BH105, 30-BH104, 30-BH107, 30-BH106M, 32-BH101, 32-BH102, 32-BH103, 32-BH105, 32-BH107M, 112-BH113M, 112-BH101, 112-BH102, 112-BH103, 112-BH112M, 32-BH104M, 112-BH111, 112-BH107, 112-BH108, 112-BH110M, 112-BH104, 112-BH109, 112-BH106M, 112-BH105

0 10 50 100

Approx. Scale (m)

Map Source: Near maps, Imagery Dated on: 15/04/2021

LEGEND (Note: All locations are approximate)

- Site boundary
- Inferred groundwater flow
- Groundwater monitoring well location
- Borehole location
- Highlighted indicates analyte concentration value exceeding the GIL for marine water quality
- Highlighted yellow values indicates concentration exceeds human health criteria
- Highlighted yellow values indicates concentration exceeds ecological criteria for Urban Residential and Public Open Space

eiaustralia
Practical Solutions for Built Environments
Suite 6.01, 55 Miller Street, PYRMONT 2009
Ph (02) 9516 0722 Fax (02) 9518 5088

Drawn:	L.C.
Approved:	A.I.
Date:	24-05-21

Holdmark NSW Pty Ltd
Detailed Site Investigation
82 Hughes Ave, 30 & 32 Waratah St & 112 Wharf Rd, Melrose Park NSW

Groundwater Exceedances Plan and Groundwater Flow Direction at 30 & 32 Waratah Street & 112 Wharf Rd

Figure: A.3b

Project: E25077.E02

Appendix B - Tables

Table 1: Soil Analytical Results

E25077.E02 - Melrose Park

Sample ID	Depth of Sample (mBGL)	Sampling Date	Heavy Metals								PAHs				BTEX				TRHs				OCPs	OPPs	Total PCBs	PFAS		Asbestos
			As	Cd	Cr#	Cu	Pb	Hg	Ni	Zn	Carcinogenic cPAHs (as B(a)P TEQ)	Benzo(a)pyrene	Naphthalene	Total PAHs	Benzene	Toluene	Ethylbenzene	Total Xylenes	F1 less BTEX	F2 less Naphth.	F3	F4				PFOS / PFHxS	PFOA	
82 Hughes Avenue, Ermington NSW																												
82-BH102M_0.4-0.6	0.4-0.6	20/04/2021	5	<0.3	10	24	42	0.12	5.7	55	0.6	0.4	<0.1	5	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	NA	NA	NA	NA	NA	NA
30 Waratah Street, Melrose Park NSW																												
30-BH101_0.2-0.3	0.2-0.3	20/04/2021	4	<0.3	18	8.2	11	<0.05	12	20	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	<0.0016	<0.0008	No
30-BH101_0.5-0.6	0.5-0.6	20/04/2021	5	16	22	120	740	0.14	21	360	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	NA	NA	NA	NA	NA	No
30-BH101_0.9-1.0	0.9-1.0	20/04/2021	9	0.5	17	6.4	190	<0.05	6.7	99	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	NA	NA	NA	NA	NA	No
30-BH101_2.9-3.0	2.9-3.0	20/04/2021	5	NA	NA	NA	74	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30-BH101_4.4-4.5	4.4-4.5	20/04/2021	2300	17	95	1400	1600	0.11	32	1300	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	NA	NA	NA	NA	NA	No
30-BH101_5.4-5.5	5.4-5.5	20/04/2021	310	NA	NA	NA	550	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
30-BH102M_0.2-0.3	0.2-0.3	20/04/2021	20	<0.3	4.1	18	66	<0.05	1.5	35	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	<25	150	<120	<1	<1.7	<1	<0.0016	<0.0008	No
30-BH102M_0.5-0.6	0.5-0.6	20/04/2021	14	<0.3	27	12	98	<0.05	4.8	54	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	NA	NA	NA	NA	NA	No
30-BH102M_2.0-2.1	2.0-2.1	20/04/2021	200	1.9	7.4	130	490	0.1	3.5	140	0.3	0.1	<0.1	1.8	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	NA	NA	NA	NA	NA	No
30-BH102M_4.0-4.1	4.0-4.1	20/04/2021	15	<0.3	9	52	110	<0.05	9.1	120	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	<25	240	<120	NA	NA	NA	NA	NA	No
30-BH103_0.3-0.4	0.3-0.4	20/04/2021	5	<0.3	2.4	5.7	19	<0.05	1	15	0.4	0.2	<0.1	2	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	NA	NA	No
30-BH103_0.9-1.0	0.9-1.0	20/04/2021	6	<0.3	11	16	120	<0.05	3.4	83	0.3	0.2	<0.1	2.5	<0.1	<0.1	<0.1	<0.3	<25	<25	170	150	NA	NA	NA	NA	NA	No
30-BH104_0.4-0.5	0.4-0.5	20/04/2021	2	<0.3	7.6	18	75	<0.05	4.5	110	1.4	0.9	<0.1	7.7	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	<0.0016	<0.0008	No
30-BH104_2.0-2.1	2.0-2.1	20/04/2021	6	<0.3	15	12	110	<0.05	5.7	82	<0.3	0.1	<0.1	0.9	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	NA	NA	NA	NA	NA	No
30-BH104_2.7-2.5	2.5-2.7	20/04/2021	6	<0.3	10	19	280	0.06	7.4	140	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	NA	NA	NA	NA	NA	No
30-BH105_0.4-0.5	0.4-0.5	20/04/2021	6	<0.3	9.5	23	53	<0.05	13	100	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	NA	NA	No
30-BH106M_0.3-0.4	0.3-0.4	21/04/2021	4	0.9	79	72	140	<0.05	50	520	0.5	0.3	<0.1	3	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	<0.0016	<0.0008	No
30-BH106M_1.1-1.2	1.1-1.2	21/04/2021	10	1.3	130	600	530	<0.05	58	2700	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	27	190	<120	NA	NA	NA	NA	NA	No
30-BH106M_1.9-2.0	1.9-2.0	21/04/2021	6	1.2	110	130	530	<0.05	38	700	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	NA	NA	NA	NA	NA	No
30-BH106M_3.4-3.5	3.4-3.5	21/04/2021	10	0.7	160	290	200	<0.05	40	410	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	NA	NA	NA	NA	NA	No
30-BH107_0.3-0.4	0.3-0.4	21/04/2021	12	0.9	13	19	92	0.05	8.5	820	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	NA	NA	NA	NA	NA	No
30-BH107_0.9-1.0	0.9-1.0	21/04/2021	4	<0.3	12	33	29	<0.05	28	63	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	NA	NA	NA	NA	NA	No
30-BH107_2.3-2.4	2.3-2.4	21/04/2021	6	<0.3	16	30	96	0.12	10	99	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	NA	NA	NA	NA	NA	No
30-BH108_0.2-0.3	0.2-0.3	21/04/2021	7	<0.3	14	15	21	<0.05	5.9	28	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	NA	NA	No
30-BH108_0.4-0.5	0.4-0.5	21/04/2021	7	<0.3	27	12	18	<0.05	1.4	14	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	NA	NA	NA	NA	NA	No
30-BH108_1.2-1.3	1.2-1.3	21/04/2021	5	<0.3	12	15	25	<0.05	6.6	180	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	NA	NA	NA	NA	NA	No
30-BH108_2.7-2.8	2.7-2.8	21/04/2021	8	<0.3	17	12	140	0.13	4.6	110	0.3	0.2	<0.1	1.8	<0.1	<0.1	<0.1	<0.3	<25	<25	200	260	NA	NA	NA	NA	NA	No
30-BH109_0.3-0.4	0.3-0.4	21/04/2021	18	<0.3	11	24	38	<0.05	2.7	42	1.2	0.8	<0.1	7.9	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	NA	NA	NA	NA	NA	No
30-BH110M_0.2-0.3	0.2-0.3	21/04/2021	3	<0.3	7.7	5.9	10	<0.05	3.1	15	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	NA	NA	NA	NA	NA	No
30-BH110M_1.4-1.5	1.4-1.5	21/04/2021	5	<0.3	10	9.2	20	<0.05	1.7	14	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	NA	NA	NA	NA	NA	No
30-BH110M_2.2-2.3	2.2-2.3	21/04/2021	6	<0.3	13	9.2	24	<0.05	5.5	28	0.5	0.3	<0.1	3.2	<0.1	<0.1	<0.1	<0.3	<25	<25	150	<120	NA	NA	NA	NA	NA	No
30-BH111M_0.2-0.3	0.2-0.3	21/04/2021	7	<0.3	13	10	16	<0.05	6.8	30	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	NA	NA	NA	NA	NA	No
30-BH117_0.2-0.3	0.2-0.3	21/04/2021	4	<0.3	12	7.1	16	<0.05	3.6	23	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	NA	NA	NA	NA	NA	No
32 Waratah Street, Melrose Park NSW																												
112-BH101_0.3-0.4	0.3-0.4	22/04/2021	10	<0.3	12	37	16	<0.05	26	29	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	NA	NA	NA	NA	NA	No
112-BH102_0.4-0.5	0.4-0.5	22/04/2021	3	<0.3	9.3	54	5	<0.05	68	41	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	<0.0016	<0.0008	No
112-BH103_0.2-0.3	0.2-0.3	21/04/2021	6	<0.3	18	22	20	<0.05	8.4	28	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	NA	NA	NA	NA	NA	No
112-BH104_0.2-0.3	0.2-0.3	21/04/2021	2	<0.3	12	66	2	<0.05	68	40	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	NA	NA	No
112-BH105_0.2-0.3	0.2-0.3	21/04/2021	4	<0.3	15	18	43	<0.05	10	260	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	<0.0016	<0.0008	No
112-BH106M_0.2-0.3	0.2-0.3	21/04/2021	7	<0.3	11	26	28	<0.05	7	37	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	<0.0016	<0.0008	No
112-BH106M_1.4-1.5	1.4-1.5	21/04/2021	10	<0.3	15	23	57	<0.05	5.3	46	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	NA	NA	NA	NA	NA	No
112-BH107_0.2-0.3	0.2-0.3	21/04/2021	5	<0.3	7.8	39	14	<0.05	23	33	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	NA	NA	No
112-BH108_0.2-0.3	0.2-0.3	21/04/2021	6	<0.3	15	39	25	<0.05	19	61	0.8	0.5	<0.1	7.4	<0.1	<0.1	<0.1	<0.3	<25	<25	210	300	NA	NA	NA	NA	NA	No
112-BH108_0.7-0.8	0.7-0.8	21/04/2021	5	<0.3	5.9	27	17	<0.05	6.9	68	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	NA	NA	NA	NA	NA	No
112-BH109_0.3-0.4	0.3-0.4	21/04/2021	2	<0.3	8.8	3.6	5	<0.05	1.8	9.8	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	0.039	0.0009	No
112-BH109_0.7-0.8	0.7-0.8	21/04/2021	9	<0.3	10	23	23	<0.05	4	30	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	NA	NA	NA	NA	NA	No
112-BH110M_0.2-0.3	0.2-0.3	21/04/2021	9	<0.3	16	19	32	<0.05	6.7	92	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	NA	NA	No
112-BH111_0.2-0.3	0.2-0.3	22/04/2021	7	<0.3	12	26	20	<0.05	4.4	27	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	NA	NA	NA	NA	NA	No
112-BH111_0.6-0.7	0.6-0.7	22/04/2021	3	<0.3	6	15	16	<0.05	3	17	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	NA	NA	NA	NA	NA	No
112-BH112M_0.4-0.5	0.4-0.5	22/04/2021	7	0.3	23	31	31	0.13	38	210	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	0.0098	<0.0008	No
112-BH113M_0.2-0.3	0.2-0.3	22/04/2021	11	<0.3	12	16	27	0.09	4.8	38	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	0.0029	0.0073	No
112 Wharf Road, Melrose Park NSW																												
32-BH101_0.1-0.2	0.1-0.2	22/04/2021	3	<0.3	6.8	6.5	54	0.13	2.7	36	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	<0.0016	<0.0008	No
32-BH102_0.2-0.3	0.2-0.3	22/04/2021	8	<0.3	13	23	19	<0.05	5.3	16	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	NA	NA	No
32-BH103_0.3-0.4	0.3-0.4	22/04/2021	6	<0.3	11	20	18	<0.05	4.1	14	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	NA	NA	No
32-BH103_0.9-1.0	0.9-1.0	22/04/2021	11	<0.3	18	23	30	0.07	8	39	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	NA	NA	NA	NA	NA	No
32-BH104M_0.2-0.3	0.2-0.3	22/04/2021	3	<0.3	5.4	12	14	<0.05	1.7	11	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	<0.0016	<0.0008	No
32-BH105_0.2-0.3	0.2-0.3	22/04/2021	9	<0.3	27	42	220	0.18	20	150	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	NA	NA	No
32-BH106_0.2-0.3	0.2-0.3	22/04/2021	10	<0.3	13	36	41	4.7	6.8	42	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	NA	NA	NA	NA	NA	No
32-BH106_1.4-1.5	1.4-1.5	22/04/2021	9	<0.3	22	710	86	0.38	16	130	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	NA	NA	NA	NA	NA	No
32-BH107M_0.2-0.3	0.2-0.3	22/04/2021	6	<0.3	11	8.8	17	<0.05	3.9	17	<0.3	<0.1	<0.1	<0.8	<0.1	<0.1	<0.1	<0.3	<25	<25	<90	<120	<1	<1.7	<1	<0.0016	<0.0008	No
Adopted Criteria																												
NEPM (2013) Health Investigation Levels (HILs)	Residential with Minimal Soil Access Land Use (HIL-B)		500	150	500 Cr(V1)	30,000	1,200	120	1,200	60,000	4			400									10		1			
	Public Open Space (HIL-C)		300	90	300	17,000	600	80	1,200	30,000	3			300														
NEPM (2013) Health Screening Levels (HSLs)	HSL A & B - low - high density residential Soil texture classification –CLAY [1]	(0 m to <1 m BGL)											5		0.7	480	NL	110	50	280								
		(1 m to <2 m BGL)											NL		1	NL	NL	310	90	NL								
		(2 m to <4 m BGL)											NL		2	NL	NL	NL	150	NL								
		(4 m + BGL)											NL		3	NL	NL	NL	290	NL								
	HSL C - Recreational / Open Space Soil texture classification –CLAY [1]	(0 m to <1 m BGL)											NL		NL	NL	NL	NL	NL	NL								
		(1 m to <2 m BGL)											NL		NL	NL	NL	NL	NL	NL								
		(2 m to <4 m BGL)											NL		NL	NL	NL	NL	NL	NL								
		(4 m + BGL)											NL		NL	NL	NL	NL	NL	NL								
	Asbestos Recreational (HSL-C)	Bonded (%w/w)																										0.02
		FA and AF (%w/w)																										0.001
	Asbestos Residential (HSL-B)	Bonded (%w/w)																										0.04
		FA and AF (%w/w)																										0.001
NEPM (2013) Ecological Criteria [2]	Urban Residential and Public Open Space (B&C)		100		338 [b]	168	1,240		41	419		33 [c]	170		50	85	70	105	180	120	300 [1]	2,800	180 [d]					
NEPM (2013) Management Limits	Fine grained [1] soil texture	Public Open Space (C)																	700	1,000	3,500	10,000						
		Residential (B)																										
NEMP (2020)	Human Health based guidance values for HIL C - Public open space																									1	10	
NEMP (2020)	Human Health based guidance values for HIL B - Residential with minimal soil access																									2	20	

Notes: All results are recorded in mg/kg, unless otherwise specified.

Highlighted yellow values indicates concentration exceeds human health criteria□

Residential (B)	NEPM 2013 'B' - Residential with minimal opportunities for soil access; includes dwellings with fully and permenantly paved yard space such as high-rise buildings and apartments.
Public Open Space (C)	NEPM 2013 'C' - Public open space such as parks, playgrounds, playing fields, secondary schools and footpaths.
#	Results are reported as total Chromium concentrations
NL	'Not Limiting'
ND	'Not detected' i.e. all concentrations of the compounds within the analyte group were found to be below the laboratory limits of detection.
NA	'Not Analysed' i.e. the sample was not analysed.
F1	TRH C_6-C_{10} less the sum concentration of BTEX.
F2	TRH $C_{>10}$-C_{16} less the concentration of Naphthalene.
F3	TRH $C_{>16}$-C_{34}
F4	TRH $C_{>34}$-C_{40}
1	Fine grained soil values were applied as the most conservative material type.
2	Site specific EILs/ESLs were derived using the methodology prescribed by NEPM (2013). See Table 1A for details.
a	Values are for Cr (V)
b	Values are for Cr (III)
c	Value derived from CRC Care Report No. 39, Table 11.
d	Value shown is for DDT
e	Value shown is for Chlorpyrifos

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Table B2 – Summary of Groundwater Investigation Results Melrose Park NSW

Sample Identification	GME date	Heavy Metals								BTEX					VOCs		TRHs				PAHs			PFAS				1,4 Dioxane
		As	Cd	Cr	Cu	Pb	Ni	Zn	Hg	Benzene	Toluene	Ethylbenzene	o-xylene	m/p-xylene	cis-1,2-dichloroethene	Total VOCs	F1*	F2**	F3 ($>C_{16}$-C_{34})	F4 ($>C_{34}$-C_{40})	Total PAHs	Benzo(a)pyrene	Naphthalene	PFHxS	PFOS	PFHxS + PFOS	PFOA	
82 Hughes Avenue, Ermington NSW																												
GW-82_BH102M-1	30/4/2021	<1	0.3	1	5	<1	37	850	<0.1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<10	<50	<60	<500	<500	<1	<0.1	<0.1	< 0.01	< 0.01	< 0.01	< 0.01	<0.01
GW-EI_MW01-1		4	<0.1	<1	7	<1	12	50	<0.1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<10	<50	<60	<500	<500	<1	<0.1	<0.1	< 0.01	< 0.01	< 0.01	< 0.01	<0.01
GW-EI_MW03-1		2	1.1	1	21	2	79	1400	<0.1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<10	<50	<60	<500	<500	<1	<0.1	<0.1	< 0.01	< 0.01	< 0.01	< 0.01	<0.01
30 Waratah Street, Melrose Park NSW																												
GW-30_BH102M-1	30/4/2021	80	<0.1	<1	15	<1	7	83	<0.1	<0.5	<0.5	<0.5	<0.5	<1	**11**	**22**	<50	<60	<500	<500	<1	<0.1	<0.1	0.07	0.13	0.2	< 0.01	<0.01
GW-30_BH106M-1		7	<0.1	<1	9	<1	11	99	<0.1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<10	<50	<60	<500	<500	<1	<0.1	<0.1	< 0.01	< 0.01	< 0.01	< 0.01	<0.01
GW-30_BH110M-1		1	<0.1	2	6	<1	6	580	<0.1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<10	<50	<60	<500	<500	<1	<0.1	<0.1	0.02	0.02	0.04	0.03	<0.01
GW-30_BH111M-1		9	<0.1	<1	1	4	2	45	<0.1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<10	<50	<60	<500	<500	<1	<0.1	<0.1	28	29	57	1.7	<0.01
32 Waratah Street, Melrose Park NSW																												
GW-112_BH113M-1	30/4/2021	<1	0.1	<1	15	<1	8	350	<0.1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<10	<50	<60	<500	<500	<1	<0.1	<0.1	< 0.01	< 0.01	< 0.01	< 0.01	<0.01
112 Wharf Road, Melrose Park NSW																												
GW-32-BH104M-1	30/4/2021	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.09	0.02	0.11	< 0.01	NA
GIL[4] (Marine)		NR	0.7 [3]	27(Cr III) [1]	1.3	4.4	7	15 [2]	0.1 [3]	500 [2]	NR	NR	NR	NR									50 [2]						
GIL4 [6] (Fresh Water)		24 (AsIII) 13 (AsV)	0.2	NR (Cr III)	1.4	3.4	11	8 [2]	0.06 [3]	950	NR	NR	350	200									16		0.13 [8]		220 [8]	
HSL[5]										5,000	NL	NL	NL	NL			6,000	NL					NL					
Drinking Water [7,8]		100	20	NR	20,000	100	200	NR	10	10	8,000	3,000	6,000		600						NR	0.1	NR					

Notes:

All values are µg/L unless stated otherwise.

NA	Not analysed
NR	No current published criterion.
ND	'Not detected' i.e. all concentrations of the compounds within the analyte group were found to be below the laboratory limits of detection.
*	To obtain F1 subtract the sum of BTEX concentrations from the C6-C10 fraction.
**	To obtain F2 subtract Naphthalene from the >C10-C16 fraction.
1	Values have been calculated using a calculated mean hardness of 30 mg/L CaCO3 refer to ANZECC & ARMCANZ (2000) for further guidance on recalculating for site-specific hardness.
2	Figure may not protect key species from chronic toxicity, refer to ANZECC & ARMCANZ (2000) for further guidance.
3	Chemical for which possible bioaccumulation and secondary poisoning effects should be considered, refer to ANZECC & ARMCANZ (2000) for further guidance.
4	NEPM (2013) Groundwater Investigation Levels for marine water quality, based on ANZECC & ARMCANZ (2000).
5	NEPC (2013) Table 1A(4) Groundwater HSL D for vapour intrusion at the contaminant source depth ranges in sand 2m to <4m.
6	NEPM (2013) Groundwater Investigation Levels for fresh water quality, based on ANZECC & ARMCANZ (2000), level of species protection is 90% due to being located in an urbanized area.
7	NEPM (2013) Groundwater Investigation Levels for drinking water quality, based on Australian Drinking Water Guidelines (NHMRC 2011).
8	Drinking Water value has been used multiplied by a factor of 10 to address the secondary contact recreation.
9	NEPC (2013) Table 1A(4) Groundwater HSL D for vapour intrusion at the contaminant source depth ranges in clay 2m to <4m.
	Highlighted indicates analyte concentration value exceeding the Groundwater Investigation Levels for marine water quality
	Highlighted indicates analyte concentration value exceeding the Groundwater Investigation Levels for drinking water quality

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Table B3 – Summary of sPOCAS labaratory analytical results

Analysis	30 Waratah Street				82 Hughes Avenue	ASSMAC (1998) Criteria[3]
	30-BH101_6.9-7.0	30-BH106M_6.3-6.4	30-BH110M_7.0-7.1	30-BH111M_6.9-7.0	82-BH102M_5.4-5.5	
pH f[1]	7.8	7.9	7.1	7.3	6.8	<4.0
pH fox[2]	6.3	6.5	5.1	6.7	4.9	<3.5
Titratable Actual Acidity (mol H^+/tonne) -TAA	<5	<5	<5	N.A.	<5	NR
Total Potential Acidity (mol H^+/tonne) -TPA	<5	<5	<5	N.A.	<5	18
Total Sulfidic Acidity (mol H^+/tonne) -TSA	<5	<5	<5	N.A.	<5	18
KCl extractable sulfur (% w/w) - S_{KCl}	0.096	0.033	0.051	N.A.	0.013	NR
Peroxide sulfur (% w/w) - S_P	0.260	0.057	0.180	N.A.	0.016	NR
Peroxide oxidisable sulfur (% w/w) - S_{POS}	0.160	0.024	0.120	N.A.	<0.005	0.03

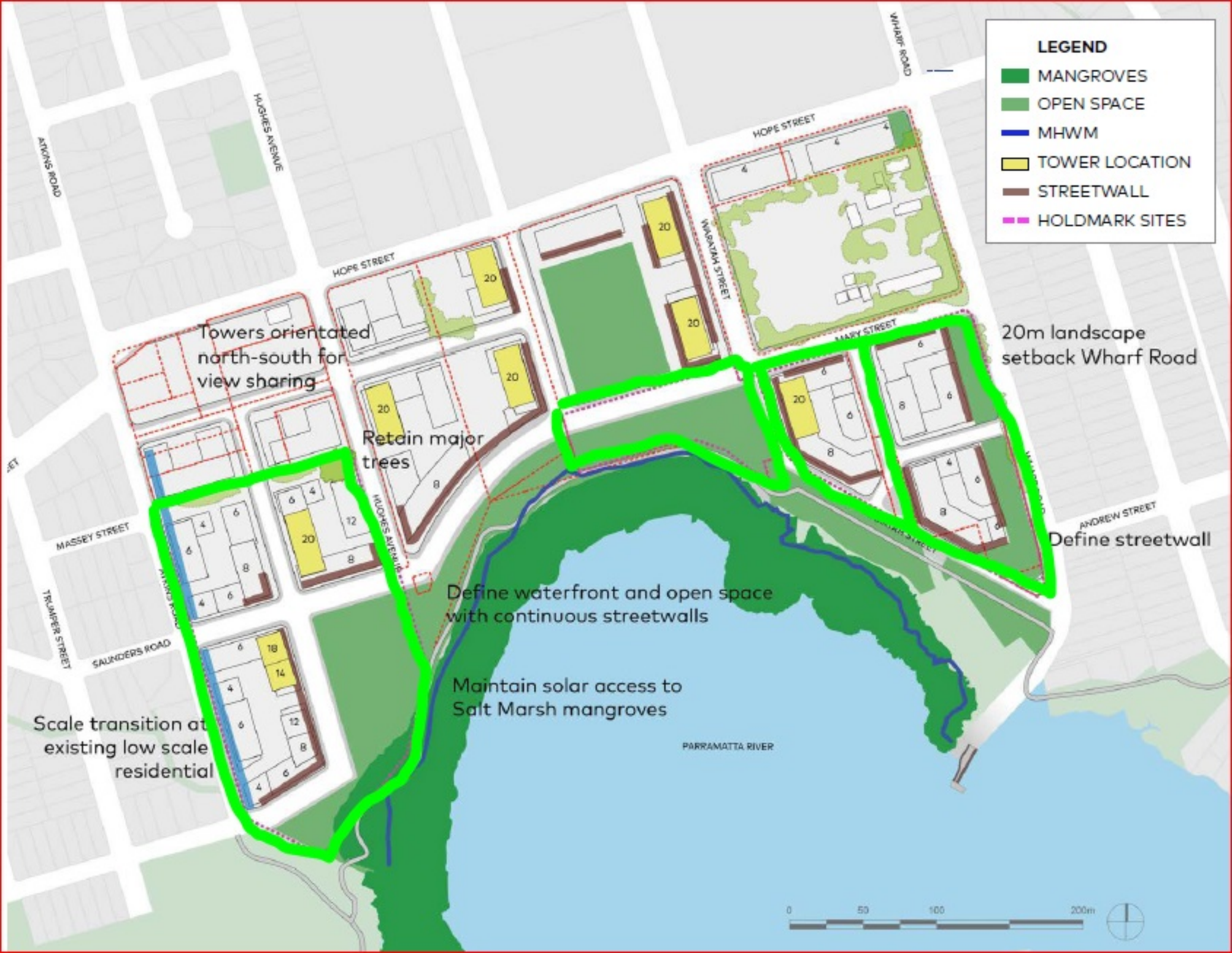
Notes:

[1]for Actual Acid Sulfate Soil

[2]Indicative value only, for Potential Acid Sulfate Soil

[3]Action Criteria that trigger need to prepare an ASS management plan, derived from Table 4.4, Section 2, ASSs Assessment Guidelines (ASSMAC, 1998);
N.R. = no current criterion
N.A. = Not Analysed
Indicates concentration exceeds adopted criteria.

Appendix C - Development Plans


LEGEND
MANGROVES
OPEN SPACE
MHWM
TOWER LOCATION
STREETWALL
HOLDMARK SITES
Towers orientated north-south for view sharing
Retain major trees
20m landscape setback Wharf Road
Define streetwall
Define waterfront and open space with continuous streetwalls
Maintain solar access to Salt Marsh mangroves
Scale transition at existing low scale residential
PARRAMATTA RIVER
HOPE STREET
MARY STREET
ANDREW STREET
MASSEY STREET
SAUNDERS ROAD
TRUMPER STREET
ATKINS ROAD
HUGHES AVENUE
WHARF ROAD
WARATAH STREET
0
50
100
200m

Appendix D - Identified Sources by Previous Assessments

senversa
Address: Level 14, 309 Kent Street, Sydney NSW 2000
Phone: (02) 9994 8016
Fax: (03) 9606 0074
Website: www.senversa.com.au

Legend

- Melrose Park Southern Precinct
- Investigation Locations
- Lot Boundary

Notes:
Aerial imagery (28/02/2020) sourced from Nearmap Pty Ltd

Designed:	H. Yellowlees	Date:	12/03/2020
Drawn:	M. Sari	Revision:	0
Checked:	M. Beasley	Scale:	1:1,500 (A3)
File:	S17894_02_F003_Melrose_Park		

0 10 20 40 60 80 100 Metres

Coordinate System: GDA 1994 MGA Zone 56

Figure No: 3

Title: Site Inspection – 30 and 32 Waratah St and 112 Wharf Rd, Melrose Park

Project: Preliminary Site Investigation

Location: Melrose Park Southern Precinct

Client: Holdmark Property Group c/o Cox Architecture

senversa
Address: Level 14, 309 Kent Street, Sydney NSW 2000
Phone: (02) 9994 8016
Fax: (03) 9606 0074
Website: www.senversa.com.au

Legend

- Melrose Park Southern Precinct
- Investigation Locations
- Lot Boundary

Notes:
Aerial imagery (28/02/2020) sourced from Nearmap Pty Ltd

Designed:	H. Yellowlees	Date:	12/03/2020
Drawn:	M. Sari	Revision:	0
Checked:	M. Beasley	Scale:	1:1,500 (A3)
File:	S17894_02_F004_Ermington		

0 10 20 40 60 80 100 Metres

Coordinate System: GDA 1994 MGA Zone 56

Figure No: 4

Title: Site Inspection – 82 Hughes Ave, Ermington

Project: Preliminary Site Investigation

Location: Melrose Park Southern Precinct

Client: Holdmark Property Group c/o Cox Architecture

Map: PS110826_GIS_004_A2 | Author: David.Naiken

Date: 12/09/2018 | Approved by: Clement.Joyner

0 10 20 m

1:2,000

Coordinate system: GDA 1994 MGA Zone 56

Scale ratio correct when printed at A4

\\corp.pbwan.net\ANZProjects\PS110826_GSK_DSI_Ermington\5_Shared\GIS\Projects\Maps\PS110826_GIS_004_A2.mxd

Detailed Site Investigation
82 Hughes Avenue, Ermington NSW
Figure 4
Asbestos Impact Plan

GlaxoSmithKline Pty Ltd

www.wsp.com

Appendix E – POEO Search

Environment Protection Licence

Licence - 1024

Licence Details	
Number:	1024
Anniversary Date:	28-February

Licensee

GLAXOSMITHKLINE CONSUMER HEALTHCARE AUSTRALIA PTY LTD

LOCKED BAG 3

ERMINGTON NSW 2115

Premises

GLAXOSMITHKLINE

82 HUGHES AVENUE

ERMINGTON NSW 2115

Scheduled Activity

Chemical Production

Fee Based Activity	Scale
Chemical production waste generation	> 100 T generated or stored
Pharmaceutical and veterinary products production	> 2000-5000 T produced

Region

Waste & Resources - Waste Management

59-61 Goulburn Street
SYDNEY NSW 2000

Phone: (02) 9995 5000

Fax: (02) 9995 5999

PO Box A290 SYDNEY SOUTH

NSW 1232

Environment Protection Licence

Licence - 1024

Environment Protection Licence

Licence - 1024

Environment Protection Licence

Information about this licence

Dictionary

A definition of terms used in the licence can be found in the dictionary at the end of this licence.

Responsibilities of licensee

Separate to the requirements of this licence, general obligations of licensees are set out in the Protection of the Environment Operations Act 1997 ("the Act") and the Regulations made under the Act. These include obligations to:

- ensure persons associated with you comply with this licence, as set out in section 64 of the Act;
- control the pollution of waters and the pollution of air (see for example sections 120 - 132 of the Act);
- report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

Variation of licence conditions

The licence holder can apply to vary the conditions of this licence. An application form for this purpose is available from the EPA.

The EPA may also vary the conditions of the licence at any time by written notice without an application being made.

Where a licence has been granted in relation to development which was assessed under the Environmental Planning and Assessment Act 1979 in accordance with the procedures applying to integrated development, the EPA may not impose conditions which are inconsistent with the development consent conditions until the licence is first reviewed under Part 3.6 of the Act.

Duration of licence

This licence will remain in force until the licence is surrendered by the licence holder or until it is suspended or revoked by the EPA or the Minister. A licence may only be surrendered with the written approval of the EPA.

Licence review

The Act requires that the EPA review your licence at least every 5 years after the issue of the licence, as set out in Part 3.6 and Schedule 5 of the Act. You will receive advance notice of the licence review.

Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

- an administrative fee; and
- a load-based fee (if applicable).

Environment Protection Licence

The EPA publication “A Guide to Licensing” contains information about how to calculate your licence fees. The licence requires that an Annual Return, comprising a Statement of Compliance and a summary of any monitoring required by the licence (including the recording of complaints), be submitted to the EPA. The Annual Return must be submitted within 60 days after the end of each reporting period. See condition R1 regarding the Annual Return reporting requirements.

Usually the licence fee period is the same as the reporting period.

Transfer of licence

The licence holder can apply to transfer the licence to another person. An application form for this purpose is available from the EPA.

Public register and access to monitoring data

Part 9.5 of the Act requires the EPA to keep a public register of details and decisions of the EPA in relation to, for example:

- licence applications;
- licence conditions and variations;
- statements of compliance;
- load based licensing information; and
- load reduction agreements.

Under s320 of the Act application can be made to the EPA for access to monitoring data which has been submitted to the EPA by licensees.

This licence is issued to:

GLAXOSMITHKLINE CONSUMER HEALTHCARE AUSTRALIA PTY LTD
LOCKED BAG 3
ERMINGTON NSW 2115

subject to the conditions which follow.

Environment Protection Licence

Licence - 1024

1 Administrative Conditions

A1 What the licence authorises and regulates

A1.1 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

Scheduled Activity	Fee Based Activity	Scale
Chemical Production	Chemical production waste generation	> 100 T generated or stored
Chemical Production	Pharmaceutical and veterinary products production	> 2000 - 5000 T produced

A2 Premises or plant to which this licence applies

A2.1 The licence applies to the following premises:

Premises Details
GLAXOSMITHKLINE
82 HUGHES AVENUE
ERMINGTON
NSW 2115
LOT 3 DP 602080

A3 Information supplied to the EPA

A3.1 Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.

In this condition the reference to "the licence application" includes a reference to:
a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and
b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.

2 Discharges to Air and Water and Applications to Land

Environment Protection Licence

Licence - 1024

P1 Location of monitoring/discharge points and areas

P1.1 The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.

3 Limit Conditions

L1 Pollution of waters

L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.

L2 Waste

L2.1 The licensee must not cause, permit or allow any waste to be received at the premises, except the wastes expressly referred to in the column titled “Waste” and meeting the definition, if any, in the column titled “Description” in the table below.
Any waste received at the premises must only be used for the activities referred to in relation to that waste in the column titled “Activity” in the table below.
Any waste received at the premises is subject to those limits or conditions, if any, referred to in relation to that waste contained in the column titled “Other Limits” in the table below.
This condition does not limit any other conditions in this licence.

Code	Waste	Description	Activity	Other Limits
NA	General or Specific exempted waste	Waste that meets all the conditions of a resource recovery exemption under Clause 51A of the Protection of the Environment Operations (Waste) Regulation 2005	As specified in each particular resource recovery exemption	NA
NA	Waste	Any waste received on site that is below licensing thresholds in Schedule 1 of the POEO Act, as in force from time to time	-	NA

4 Operating Conditions

O1 Activities must be carried out in a competent manner

O1.1 Licensed activities must be carried out in a competent manner.
This includes:

a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

O2 Maintenance of plant and equipment

O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity:
a) must be maintained in a proper and efficient condition; and
b) must be operated in a proper and efficient manner.

O3 Emergency response

O3.1 The licensee must maintain, and implement as necessary, a current Pollution Incident Response Management Plan (PIRMP) for the premises. The licensee must keep the PIRMP on the premises at all times. The PIRMP must document systems and procedures to deal with all types of incidents (e.g. spills, explosions or fire) that may occur at the premises or that may be associated with activities that occur at the premises and which are likely to cause harm to the environment. The PIRMP must be tested at least annually or following a pollution incident

O4 Processes and management

O4.1 The licensee must ensure that any liquid and/or non liquid waste generated and/or stored at the premises is assessed and classified in accordance with the DECC Waste Classification Guidelines as in force from time to time.

O4.2 The licensee must ensure that waste identified for recycling is stored separately from other waste.

O5 Waste management

O5.1 The licensee must ensure that the handling, labelling, containment, storage and disposal of clinical and sharps wastes are carried out in accordance with the “Waste Management Guidelines for Health Care Facilities”, 1998, issued by the NSW Department of Health.

O5.2 Without limiting to O5.1, the licensee must ensure that:

(a) clinical wastes are stored or contained in a weather proof secure location isolated from any other wastes, and that the storage area is maintained in a condition which presents no threat to the environment;

(b) the storage area for clinical wastes contains all necessary equipment required to clean and disinfect the area in case of spillage;

(c) no radioactive substance as defined by the Radiation Control Act, 1990 is mixe or stored with any of the clinical wastes;

(d) bagged clinical wastes are stored and transported in rigid containers which are leak proof, shatter proof, washable and have securely fitting lids to prevent spills at all times;

(e) bags and containers used for storage and transport of clinical wastes are colour coded and clearly marked with the wording 'Clinical Wastes' along with the biological hazard symbol in accordance with the requirements of the Waste Management Guidelines for Health Care Facilities, 1998, issued by the NSW Department of Health;

(f) containers used for clinical waste which are to be reused must be thoroughly cleansed and disinfected before being reuses; and

(g) where second hand containers are used, all other irrelevant markings shall be obliterated.

O5.3 In addition to O5.1, the licensee must ensure that;

(a) sharps are segregated by the use of enclosed rigid ompenetrable containers that comply with Australian Standard AS/NZS 4031-1992 (non-reusable containers) and 4261-1994 (reusable containers) before disposal in waste bags labelled 'Clinical Wastes' along with the appropriate biohazard symbol;

(b) sharps contaminated by any residual cytotoxic drug are segregated by the use of enclosed rigid impenetrable containers that comply with Australian Standard AS/NZS 4031-1992 (non-reusable containers) and 4261-1994 (reusable containers) before disposal in cytotoxic waste bags labelled 'Cytotoxic Wastes' along with the appropriate biohazard symbol; and

(c) sharps are transported in rigid impenetrable containers which are leakproof, shockproof and have securely fitting lids andthat comply with Australian Standard AS/NZS 3816-1998, Management of Clinical and Related Wastes.

5 Monitoring and Recording Conditions

M1 Monitoring records

M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.

M1.2 All records required to be kept by this licence must be:
a) in a legible form, or in a form that can readily be reduced to a legible form;
b) kept for at least 4 years after the monitoring or event to which they relate took place; and
c) produced in a legible form to any authorised officer of the EPA who asks to see them.

M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence:
a) the date(s) on which the sample was taken;
b) the time(s) at which the sample was collected;
c) the point at which the sample was taken; and
d) the name of the person who collected the sample.

M2 Recording of pollution complaints

M2.1 The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.

M2.2 The record must include details of the following:
a) the date and time of the complaint;
b) the method by which the complaint was made;
c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
d) the nature of the complaint;
e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
f) if no action was taken by the licensee, the reasons why no action was taken.

M2.3 The record of a complaint must be kept for at least 4 years after the complaint was made.

M2.4 The record must be produced to any authorised officer of the EPA who asks to see them.

M3 Telephone complaints line

M3.1 The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.

M3.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.

M3.3 The preceding two conditions do not apply until 3 months after: the date of the issue of this licence.

6 Reporting Conditions

R1 Annual return documents

R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:
a) a Statement of Compliance; and
b) a Monitoring and Complaints Summary.
At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.

R1.2 An Annual Return must be prepared in respect of each reporting period, except as provided below.

Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.

R1.3 Where this licence is transferred from the licensee to a new licensee:

a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and
b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.

Note: An application to transfer a licence must be made in the approved form for this purpose.

R1.4 Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on:
a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or
b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.

R1.5 The Annual Return for the reporting period must be supplied to the EPA by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').

R1.6 The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.

R1.7 Within the Annual Return, the Statement of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:
a) the licence holder; or
b) by a person approved in writing by the EPA to sign on behalf of the licence holder.

R2 Notification of environmental harm

Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

R2.1 Notifications must be made by telephoning the Environment Line service on 131 555.

R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.

R3 Written report

R3.1 Where an authorised officer of the EPA suspects on reasonable grounds that:
a) where this licence applies to premises, an event has occurred at the premises; or
b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence,
and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.

R3.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.

R3.3 The request may require a report which includes any or all of the following information:
a) the cause, time and duration of the event;
b) the type, volume and concentration of every pollutant discharged as a result of the event;
c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event;
d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;
e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;
f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and
g) any other relevant matters.

R3.4 The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.

7 General Conditions

G1 Copy of licence kept at the premises or plant

G1.1 A copy of this licence must be kept at the premises to which the licence applies.

G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.

G1.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.

Environment Protection Licence

Licence - 1024

Dictionary

General Dictionary

3DGM [in relation to a concentration limit]	Means the three day geometric mean, which is calculated by multiplying the results of the analysis of three samples collected on consecutive days and then taking the cubed root of that amount. Where one or more of the samples is zero or below the detection limit for the analysis, then 1 or the detection limit respectively should be used in place of those samples
Act	Means the Protection of the Environment Operations Act 1997
activity	Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment Operations Act 1997
actual load	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
AM	Together with a number, means an ambient air monitoring method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.
AMG	Australian Map Grid
anniversary date	The anniversary date is the anniversary each year of the date of issue of the licence. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
annual return	Is defined in R1.1
Approved Methods Publication	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
assessable pollutants	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
BOD	Means biochemical oxygen demand
CEM	Together with a number, means a continuous emission monitoring method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.
COD	Means chemical oxygen demand
composite sample	Unless otherwise specifically approved in writing by the EPA, a sample consisting of 24 individual samples collected at hourly intervals and each having an equivalent volume.
cond.	Means conductivity
environment	Has the same meaning as in the Protection of the Environment Operations Act 1997
environment protection legislation	Has the same meaning as in the Protection of the Environment Administration Act 1991
EPA	Means Environment Protection Authority of New South Wales.
fee-based activity classification	Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations (General) Regulation 2009.
general solid waste (non-putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997

Environment Protection Licence

Licence - 1024

flow weighted composite sample	Means a sample whose composites are sized in proportion to the flow at each composites time of collection.
general solid waste (putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environmen t Operations Act 1997
grab sample	Means a single sample taken at a point at a single time
hazardous waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
licensee	Means the licence holder describe d at the front of this licence
load calculation protocol	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
local authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
material harm	Has the same meaning as in section 147 Protection of the Environment Operations Act 1997
MBAS	Means methylene blue active substances
Minister	Means the Minister administering the Protection of the Environment Operations Act 1997
mobile plant	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
motor vehicle	Has the same meaning as in the Protection of the Environment Operations Act 1997
O&G	Means oil and grease
percentile [in relation to a concentration limit of a sample]	Means that percentage [eg.50%] of the number of samples taken that must meet the concentration limit specified in the licence for that pollutant over a specified period of time. In this licence, the specified period of time is the Reporting Period unless otherwise stated in this licence.
plant	Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles.
pollution of waters [or water pollution]	Has the same meaning as in the Protection of the Environment Operations Act 1997
premises	Means the premises described in condition A2.1
public authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
regional office	Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence
reporting period	For the purposes of this licence, the reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 mo nths. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
restricted solid waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
scheduled activity	Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997
special waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
TM	Together with a number, means a test method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.

Environment Protection Licence

Licence - 1024

TSP	Means total suspended particles
TSS	Means total suspended solids
Type 1 substance	Means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements
Type 2 substance	Means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements
utilisation area	Means any area shown as a utilisation area on a map submitted with the application for this licence
waste	Has the same meaning as in the Protection of the Environment Operations Act 1997
waste type	Means liquid, restricted solid waste, general solid waste (putrescible), general solid waste (non-putrescible), special waste or hazardous waste

Mr Tim Gilbert

Environment Protection Authority

(By Delegation)

Date of this edition: 19-June-2000

Environment Protection Licence

Licence - 1024

End Notes

1	Licence transferred through application 141325, approved on 16-Jul-2002, which came into effect on 01-Jul-2002.
2	Licence varied by notice 1021300, issued on 05-Nov-2002, which came into effect on 05-Nov-2002.
3	Licence varied by Admin corrections to archived record, issued on 02-Dec-2002, which came into effect on 02-Dec-2002.
4	Licence varied by notice 1072214, issued on 17-Oct-2007, which came into effect on 17-Oct-2007.
5	Condition A1.3 Not applicable varied by notice issued on <issue date> which came into effect on <effective date>
6	Licence varied by notice 1104803, issued on 12-Nov-2009, which came into effect on 12-Nov-2009.
7	Licence varied by correction to DECCW Region data record, issued on 13-Jul-2010, which came into effect on 13-Jul-2010.
8	Licence varied by correction to scheduled activity name, issued on 22-Dec-2010, which came into effect on 22-Dec-2010.
9	Licence varied by notice 1529464 issued on 01-Jun-2015
10	Licence transferred through application 1533537 approved on 02-Sep-2015 , which came into effect on 01-Sep-2015
11	Licence varied by notice 1534833 issued on 15-Dec-2015

Section 58(5) Protection of the Environment Operations Act 1997

Licence Variation

Licence - 1024

GLAXOSMITHKLINE AUSTRALIA PTY LTD
ABN 47 100 162 481
LOCKED BAG 3
ERMINGTON NSW 2115

Attention: Anthony Murray

Notice Number	1529464
File Number	EF13/2984
Date	01-Jun-2015

NOTICE OF VARIATION OF LICENCE NO. 1024

BACKGROUND

A. GLAXOSMITHKLINE AUSTRALIA PTY LTD ("the licensee") is the holder of Environment Protection Licence No. 1024 ("the licence") issued under the *Protection of the Environment Operations Act 1997* ("the Act"). The licence authorises the carrying out of activities at 82 HUGHES AVENUE, ERMINGTON, NSW, 2115 ("the premises").

B. Due to an upgrade in the Environment Protection Authority's (EPA) licensing system, minor format changes have occurred to the Licence.

C. A draft of this licence variation was sent to the licensee for review and comment on Tuesday 19 May 2015.

D. The licensee replied by email on Sunday 24 May 2015 that there were no comments.

E. Therefore the EPA has issued this licence variation.

F. VARIATION OF LICENCE NO. 1024

1. By this notice the EPA varies licence No. 1024. The attached licence document contains all variations that are made to the licence by this notice.
2. The following variations have been made to the licence:

- Licence conditions in the current Licence that are not relevant to the Premises or that have previously contained "not applicable" have been removed from this variation. As a result, condition numbering has changed throughout the Licence. All conditions that are in the current Licence are included in this variation notice unless detailed below.
- Licence condition **A4 Information supplied to the EPA** is now referred to as **A3 Information supplied to the EPA** in the Licence.

Licence Variation

- Licence condition **L5 Waste** is now referred to as **L2 Waste** in the Licence.
- Licence Condition **L5.1** is now referred to as **L2.1**.
- **L2.1** has been varied to include a waste table. The waste table lists the wastes that are permitted to be received at the Premises with this Licence and includes a description of the waste, the activity that waste may be used for at the Premises and any other limits.
- Licence condition **M4 Recording of pollution complaints** is now referred to as **M2 Recording of pollution complaints** in the Licence.
- Licence condition **O3.1** changed to require a **Pollution Incident Response Management Plan** (PIRMP).
- Licence condition **R1.9** has been deleted as it is no longer relevant.

.....

Jacqueline Ingham

Unit Head

Waste & Resources - Waste Management

(by Delegation)

INFORMATION ABOUT THIS NOTICE

- This notice is issued under section 58(5) of the Act.
- Details provided in this notice, along with an updated version of the licence, will be available on the EPA's Public Register (http://www.epa.nsw.gov.au/prpoeo/index.htm) in accordance with section 308 of the Act.

Appeals against this decision

- You can appeal to the Land and Environment Court against this decision. The deadline for lodging the appeal is 21 days after you were given notice of this decision.

Licence Variation

When this notice begins to operate

- The variations to the licence specified in this notice begin to operate immediately from the date of this notice, unless another date is specified in this notice.
- If an appeal is made against this decision to vary the licence and the Land and Environment Court directs that the decision is stayed the decision does not operate until the stay ceases to have effect or the Land and Environment Court confirms the decision or the appeal is withdrawn (whichever occurs first).

Environment Protection Licence

Licence - 1024

Licence Details	
Number:	1024
Anniversary Date:	28-February

Licensee

GLAXOSMITHKLINE AUSTRALIA PTY LTD

LOCKED BAG 3

ERMINGTON NSW 2115

Premises

GLAXOSMITHKLINE

82 HUGHES AVENUE

ERMINGTON NSW 2115

Scheduled Activity

Chemical Production

Fee Based Activity	Scale
Chemical production waste generation	> 5-100 T generated or stored
Pharmaceutical and veterinary products production	0-2000 T produced

Region

Waste & Resources - Waste Management

59-61 Goulburn Street
SYDNEY NSW 2000

Phone: (02) 9995 5000

Fax: (02) 9995 5999

PO Box A290 SYDNEY SOUTH

NSW 1232

Environment Protection Licence

Licence - 1024

Environment Protection Licence

Licence - 1024

Environment Protection Licence

Licence - 1024

Information about this licence

Dictionary

A definition of terms used in the licence can be found in the dictionary at the end of this licence.

Responsibilities of licensee

Separate to the requirements of this licence, general obligations of licensees are set out in the Protection of the Environment Operations Act 1997 ("the Act") and the Regulations made under the Act. These include obligations to:

- ensure persons associated with you comply with this licence, as set out in section 64 of the Act;
- control the pollution of waters and the pollution of air (see for example sections 120 - 132 of the Act);
- report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

Variation of licence conditions

The licence holder can apply to vary the conditions of this licence. An application form for this purpose is available from the EPA.

The EPA may also vary the conditions of the licence at any time by written notice without an application being made.

Where a licence has been granted in relation to development which was assessed under the Environmental Planning and Assessment Act 1979 in accordance with the procedures applying to integrated development, the EPA may not impose conditions which are inconsistent with the development consent conditions until the licence is first reviewed under Part 3.6 of the Act.

Duration of licence

This licence will remain in force until the licence is surrendered by the licence holder or until it is suspended or revoked by the EPA or the Minister. A licence may only be surrendered with the written approval of the EPA.

Licence review

The Act requires that the EPA review your licence at least every 5 years after the issue of the licence, as set out in Part 3.6 and Schedule 5 of the Act. You will receive advance notice of the licence review.

Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

- an administrative fee; and
- a load-based fee (if applicable).

Environment Protection Licence

The EPA publication “A Guide to Licensing” contains information about how to calculate your licence fees. The licence requires that an Annual Return, comprising a Statement of Compliance and a summary of any monitoring required by the licence (including the recording of complaints), be submitted to the EPA. The Annual Return must be submitted within 60 days after the end of each reporting period. See condition R1 regarding the Annual Return reporting requirements.

Usually the licence fee period is the same as the reporting period.

Transfer of licence

The licence holder can apply to transfer the licence to another person. An application form for this purpose is available from the EPA.

Public register and access to monitoring data

Part 9.5 of the Act requires the EPA to keep a public register of details and decisions of the EPA in relation to, for example:

- licence applications;
- licence conditions and variations;
- statements of compliance;
- load based licensing information; and
- load reduction agreements.

Under s320 of the Act application can be made to the EPA for access to monitoring data which has been submitted to the EPA by licensees.

This licence is issued to:

GLAXOSMITHKLINE AUSTRALIA PTY LTD
LOCKED BAG 3
ERMINGTON NSW 2115

subject to the conditions which follow.

Environment Protection Licence

Licence - 1024

1 Administrative Conditions

A1 What the licence authorises and regulates

A1.1 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

Scheduled Activity	Fee Based Activity	Scale
Chemical Production	Chemical production waste generation	> 5 - 100 T generated or stored
Chemical Production	Pharmaceutical and veterinary products production	0 - 2000 T produced

A2 Premises or plant to which this licence applies

A2.1 The licence applies to the following premises:

Premises Details
GLAXOSMITHKLINE
82 HUGHES AVENUE
ERMINGTON
NSW 2115
LOT 3 DP 602080

A3 Information supplied to the EPA

A3.1 Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.

In this condition the reference to "the licence application" includes a reference to:
a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and
b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.

2 Discharges to Air and Water and Applications to Land

Environment Protection Licence

Licence - 1024

P1 Location of monitoring/discharge points and areas

P1.1 The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.

3 Limit Conditions

L1 Pollution of waters

L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.

L2 Waste

L2.1 The licensee must not cause, permit or allow any waste to be received at the premises, except the wastes expressly referred to in the column titled “Waste” and meeting the definition, if any, in the column titled “Description” in the table below.
Any waste received at the premises must only be used for the activities referred to in relation to that waste in the column titled “Activity” in the table below.
Any waste received at the premises is subject to those limits or conditions, if any, referred to in relation to that waste contained in the column titled “Other Limits” in the table below.
This condition does not limit any other conditions in this licence.

Code	Waste	Description	Activity	Other Limits
NA	General or Specific exempted waste	Waste that meets all the conditions of a resource recovery exemption under Clause 51A of the Protection of the Environment Operations (Waste) Regulation 2005	As specified in each particular resource recovery exemption	NA
NA	Waste	Any waste received on site that is below licensing thresholds in Schedule 1 of the POEO Act, as in force from time to time	-	NA

4 Operating Conditions

O1 Activities must be carried out in a competent manner

O1.1 Licensed activities must be carried out in a competent manner.
This includes:

a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

O2 Maintenance of plant and equipment

O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity:
a) must be maintained in a proper and efficient condition; and
b) must be operated in a proper and efficient manner.

O3 Emergency response

O3.1 The licensee must maintain, and implement as necessary, a current Pollution Incident Response Management Plan (PIRMP) for the premises. The licensee must keep the PIRMP on the premises at all times. The PIRMP must document systems and procedures to deal with all types of incidents (e.g. spills, explosions or fire) that may occur at the premises or that may be associated with activities that occur at the premises and which are likely to cause harm to the environment. The PIRMP must be tested at least annually or following a pollution incident

O4 Processes and management

O4.1 The licensee must ensure that any liquid and/or non liquid waste generated and/or stored at the premises is assessed and classified in accordance with the DECC Waste Classification Guidelines as in force from time to time.

O4.2 The licensee must ensure that waste identified for recycling is stored separately from other waste.

O5 Waste management

O5.1 The licensee must ensure that the handling, labelling, containment, storage and disposal of clinical and sharps wastes are carried out in accordance with the “Waste Management Guidelines for Health Care Facilities”, 1998, issued by the NSW Department of Health.

O5.2 Without limiting to O5.1, the licensee must ensure that:

(a) clinical wastes are stored or contained in a weather proof secure location isolated from any other wastes, and that the storage area is maintained in a condition which presents no threat to the environment;

(b) the storage area for clinical wastes contains all necessary equipment required to clean and disinfect the area in case of spillage;

(c) no radioactive substance as defined by the Radiation Control Act, 1990 is mixe or stored with any of the clinical wastes;

(d) bagged clinical wastes are stored and transported in rigid containers which are leak proof, shatter proof, washable and have securely fitting lids to prevent spills at all times;

(e) bags and containers used for storage and transport of clinical wastes are colour coded and clearly marked with the wording 'Clinical Wastes' along with the biological hazard symbol in accordance with the requirements of the Waste Management Guidelines for Health Care Facilities, 1998, issued by the NSW Department of Health;

(f) containers used for clinical waste which are to be reused must be thoroughly cleansed and disinfected before being reuses; and

(g) where second hand containers are used, all other irrelevant markings shall be obliterated.

O5.3 In addition to O5.1, the licensee must ensure that;

(a) sharps are segregated by the use of enclosed rigid ompenetrable containers that comply with Australian Standard AS/NZS 4031-1992 (non-reusable containers) and 4261-1994 (reusable containers) before disposal in waste bags labelled 'Clinical Wastes' along with the appropriate biohazard symbol;

(b) sharps contaminated by any residual cytotoxic drug are segregated by the use of enclosed rigid impenetrable containers that comply with Australian Standard AS/NZS 4031-1992 (non-reusable containers) and 4261-1994 (reusable containers) before disposal in cytotoxic waste bags labelled 'Cytotoxic Wastes' along with the appropriate biohazard symbol; and

(c) sharps are transported in rigid impenetrable containers which are leakproof, shockproof and have securely fitting lids andthat comply with Australian Standard AS/NZS 3816-1998, Management of Clinical and Related Wastes.

5 Monitoring and Recording Conditions

M1 Monitoring records

M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.

M1.2 All records required to be kept by this licence must be:
a) in a legible form, or in a form that can readily be reduced to a legible form;
b) kept for at least 4 years after the monitoring or event to which they relate took place; and
c) produced in a legible form to any authorised officer of the EPA who asks to see them.

M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence:
a) the date(s) on which the sample was taken;
b) the time(s) at which the sample was collected;
c) the point at which the sample was taken; and
d) the name of the person who collected the sample.

M2 Recording of pollution complaints

M2.1 The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.

M2.2 The record must include details of the following:
a) the date and time of the complaint;
b) the method by which the complaint was made;
c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
d) the nature of the complaint;
e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
f) if no action was taken by the licensee, the reasons why no action was taken.

M2.3 The record of a complaint must be kept for at least 4 years after the complaint was made.

M2.4 The record must be produced to any authorised officer of the EPA who asks to see them.

M3 Telephone complaints line

M3.1 The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.

M3.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.

M3.3 The preceding two conditions do not apply until 3 months after: the date of the issue of this licence.

6 Reporting Conditions

R1 Annual return documents

R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:
a) a Statement of Compliance; and
b) a Monitoring and Complaints Summary.
At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.

R1.2 An Annual Return must be prepared in respect of each reporting period, except as provided below.

Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.

R1.3 Where this licence is transferred from the licensee to a new licensee:

a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and
b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.

Note: An application to transfer a licence must be made in the approved form for this purpose.

R1.4 Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on:
a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or
b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.

R1.5 The Annual Return for the reporting period must be supplied to the EPA by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').

R1.6 The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.

R1.7 Within the Annual Return, the Statement of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:
a) the licence holder; or
b) by a person approved in writing by the EPA to sign on behalf of the licence holder.

R2 Notification of environmental harm

Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

R2.1 Notifications must be made by telephoning the Environment Line service on 131 555.

R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.

R3 Written report

R3.1 Where an authorised officer of the EPA suspects on reasonable grounds that:
a) where this licence applies to premises, an event has occurred at the premises; or
b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence,
and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.

R3.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.

R3.3 The request may require a report which includes any or all of the following information:
a) the cause, time and duration of the event;
b) the type, volume and concentration of every pollutant discharged as a result of the event;
c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event;
d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;
e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;
f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and
g) any other relevant matters.

R3.4 The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.

7 General Conditions

G1 Copy of licence kept at the premises or plant

G1.1 A copy of this licence must be kept at the premises to which the licence applies.

G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.

G1.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.

Environment Protection Licence

Licence - 1024

Dictionary

General Dictionary

3DGM [in relation to a concentration limit]	Means the three day geometric mean, which is calculated by multiplying the results of the analysis of three samples collected on consecutive days and then taking the cubed root of that amount. Where one or more of the samples is zero or below the detection limit for the analysis, then 1 or the detection limit respectively should be used in place of those samples
Act	Means the Protection of the Environment Operations Act 1997
activity	Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment Operations Act 1997
actual load	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
AM	Together with a number, means an ambient air monitoring method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.
AMG	Australian Map Grid
anniversary date	The anniversary date is the anniversary each year of the date of issue of the licence. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
annual return	Is defined in R1.1
Approved Methods Publication	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
assessable pollutants	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
BOD	Means biochemical oxygen demand
CEM	Together with a number, means a continuous emission monitoring method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.
COD	Means chemical oxygen demand
composite sample	Unless otherwise specifically approved in writing by the EPA, a sample consisting of 24 individual samples collected at hourly intervals and each having an equivalent volume.
cond.	Means conductivity
environment	Has the same meaning as in the Protection of the Environment Operations Act 1997
environment protection legislation	Has the same meaning as in the Protection of the Environment Administration Act 1991
EPA	Means Environment Protection Authority of New South Wales.
fee-based activity classification	Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations (General) Regulation 2009.
general solid waste (non-putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997

Environment Protection Licence

Licence - 1024

flow weighted composite sample	Means a sample whose composites are sized in proportion to the flow at each composites time of collection.
general solid waste (putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environmen t Operations Act 1997
grab sample	Means a single sample taken at a point at a single time
hazardous waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
licensee	Means the licence holder described at the front of this licence
load calculation protocol	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
local authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
material harm	Has the same meaning as in section 147 Protection of the Environment Operations Act 1997
MBAS	Means methylene blue active substances
Minister	Means the Minister administering the Protection of the Environment Operations Act 1997
mobile plant	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
motor vehicle	Has the same meaning as in the Protection of the Environment Operations Act 1997
O&G	Means oil and grease
percentile [in relation to a concentration limit of a sample]	Means that percentage [eg.50%] of the number of samples taken that must meet the concentration limit specified in the licence for that pollutant over a specified period of time. In this licence, the specified period of time is the Reporting Period unless otherwise stated in this licence.
plant	Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles.
pollution of waters [or water pollution]	Has the same meaning as in the Protection of the Environment Operations Act 1997
premises	Means the premises described in condition A2.1
public authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
regional office	Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence
reporting period	For the purposes of this licence, the reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 mo nths. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
restricted solid waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
scheduled activity	Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997
special waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
TM	Together with a number, means a test method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.

Environment Protection Licence

Licence - 1024

TSP	Means total suspended particles
TSS	Means total suspended solids
Type 1 substance	Means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements
Type 2 substance	Means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements
utilisation area	Means any area shown as a utilisation area on a map submitted with the application for this licence
waste	Has the same meaning as in the Protection of the Environment Operations Act 1997
waste type	Means liquid, restricted solid waste, general solid waste (putrescible), general solid waste (non-putrescible), special waste or hazardous waste

Mr Tim Gilbert

Environment Protection Authority

(By Delegation)

Date of this edition: 19-June-2000

End Notes

1	Licence transferred through application 141325, approved on 16-Jul-2002, which came into effect on 01-Jul-2002.
2	Licence varied by notice 1021300, issued on 05-Nov-2002, which came into effect on 05-Nov-2002.
3	Licence varied by Admin corrections to archived record, issued on 02-Dec-2002, which came into effect on 02-Dec-2002.
4	Licence varied by notice 1072214, issued on 17-Oct-2007, which came into effect on 17-Oct-2007.
5	Condition A1.3 Not applicable varied by notice issued on <issue date> which came into effect on <effective date>
6	Licence varied by notice 1104803, issued on 12-Nov-2009, which came into effect on 12-Nov-2009.
7	Licence varied by correction to DECCW Region data record, issued on 13-Jul-2010, which came into effect on 13-Jul-2010.
8	Licence varied by correction to scheduled activity name, issued on 22-Dec-2010, which came into effect on 22-Dec-2010.

Section 58(5) Protection of the Environment Operations Act 1997

Licence Variation

Licence - 1024

GLAXOSMITHKLINE AUSTRALIA PTY LTD
ABN 47 100 162 481
LOCKED BAG 3
ERMINGTON NSW 2115

Attention: Anthony Murray

Notice Number	1529464
File Number	EF13/2984
Date	01-Jun-2015

NOTICE OF VARIATION OF LICENCE NO. 1024

BACKGROUND

A. GLAXOSMITHKLINE AUSTRALIA PTY LTD ("the licensee") is the holder of Environment Protection Licence No. 1024 ("the licence") issued under the *Protection of the Environment Operations Act 1997* ("the Act"). The licence authorises the carrying out of activities at 82 HUGHES AVENUE, ERMINGTON, NSW, 2115 ("the premises").

B. Due to an upgrade in the Environment Protection Authority's (EPA) licensing system, minor format changes have occurred to the Licence.

C. A draft of this licence variation was sent to the licensee for review and comment on Tuesday 19 May 2015.

D. The licensee replied by email on Sunday 24 May 2015 that there were no comments.

E. Therefore the EPA has issued this licence variation.

F. VARIATION OF LICENCE NO. 1024

1. By this notice the EPA varies licence No. 1024. The attached licence document contains all variations that are made to the licence by this notice.
2. The following variations have been made to the licence:

- Licence conditions in the current Licence that are not relevant to the Premises or that have previously contained "not applicable" have been removed from this variation. As a result, condition numbering has changed throughout the Licence. All conditions that are in the current Licence are included in this variation notice unless detailed below.
- Licence condition **A4 Information supplied to the EPA** is now referred to as **A3 Information supplied to the EPA** in the Licence.

Licence Variation

- Licence condition **L5 Waste** is now referred to as **L2 Waste** in the Licence.
- Licence Condition **L5.1** is now referred to as **L2.1**.
- **L2.1** has been varied to include a waste table. The waste table lists the wastes that are permitted to be received at the Premises with this Licence and includes a description of the waste, the activity that waste may be used for at the Premises and any other limits.
- Licence condition **M4 Recording of pollution complaints** is now referred to as **M2 Recording of pollution complaints** in the Licence.
- Licence condition **O3.1** changed to require a **Pollution Incident Response Management Plan** (PIRMP).
- Licence condition **R1.9** has been deleted as it is no longer relevant.

.....

Jacqueline Ingham

Unit Head

Waste & Resources - Waste Management

(by Delegation)

INFORMATION ABOUT THIS NOTICE

- This notice is issued under section 58(5) of the Act.
- Details provided in this notice, along with an updated version of the licence, will be available on the EPA's Public Register (http://www.epa.nsw.gov.au/prpoeo/index.htm) in accordance with section 308 of the Act.

Appeals against this decision

- You can appeal to the Land and Environment Court against this decision. The deadline for lodging the appeal is 21 days after you were given notice of this decision.

Licence Variation

When this notice begins to operate

- The variations to the licence specified in this notice begin to operate immediately from the date of this notice, unless another date is specified in this notice.
- If an appeal is made against this decision to vary the licence and the Land and Environment Court directs that the decision is stayed the decision does not operate until the stay ceases to have effect or the Land and Environment Court confirms the decision or the appeal is withdrawn (whichever occurs first).

Environment Protection Licence

Licence - 1024

Licence Details	
Number:	1024
Anniversary Date:	28-February

Licensee

GLAXOSMITHKLINE AUSTRALIA PTY LTD

LOCKED BAG 3

ERMINGTON NSW 2115

Premises

GLAXOSMITHKLINE

82 HUGHES AVENUE

ERMINGTON NSW 2115

Scheduled Activity

Chemical Production

Fee Based Activity	Scale
Chemical production waste generation	> 5-100 T generated or stored
Pharmaceutical and veterinary products production	0-2000 T produced

Region

Waste & Resources - Waste Management

59-61 Goulburn Street
SYDNEY NSW 2000

Phone: (02) 9995 5000

Fax: (02) 9995 5999

PO Box A290 SYDNEY SOUTH

NSW 1232

Environment Protection Licence

Licence - 1024

Environment Protection Licence

Licence - 1024

Environment Protection Licence

Licence - 1024

Information about this licence

Dictionary

A definition of terms used in the licence can be found in the dictionary at the end of this licence.

Responsibilities of licensee

Separate to the requirements of this licence, general obligations of licensees are set out in the Protection of the Environment Operations Act 1997 ("the Act") and the Regulations made under the Act. These include obligations to:

- ensure persons associated with you comply with this licence, as set out in section 64 of the Act;
- control the pollution of waters and the pollution of air (see for example sections 120 - 132 of the Act);
- report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

Variation of licence conditions

The licence holder can apply to vary the conditions of this licence. An application form for this purpose is available from the EPA.

The EPA may also vary the conditions of the licence at any time by written notice without an application being made.

Where a licence has been granted in relation to development which was assessed under the Environmental Planning and Assessment Act 1979 in accordance with the procedures applying to integrated development, the EPA may not impose conditions which are inconsistent with the development consent conditions until the licence is first reviewed under Part 3.6 of the Act.

Duration of licence

This licence will remain in force until the licence is surrendered by the licence holder or until it is suspended or revoked by the EPA or the Minister. A licence may only be surrendered with the written approval of the EPA.

Licence review

The Act requires that the EPA review your licence at least every 5 years after the issue of the licence, as set out in Part 3.6 and Schedule 5 of the Act. You will receive advance notice of the licence review.

Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

- an administrative fee; and
- a load-based fee (if applicable).

Environment Protection Licence

The EPA publication “A Guide to Licensing” contains information about how to calculate your licence fees. The licence requires that an Annual Return, comprising a Statement of Compliance and a summary of any monitoring required by the licence (including the recording of complaints), be submitted to the EPA. The Annual Return must be submitted within 60 days after the end of each reporting period. See condition R1 regarding the Annual Return reporting requirements.

Usually the licence fee period is the same as the reporting period.

Transfer of licence

The licence holder can apply to transfer the licence to another person. An application form for this purpose is available from the EPA.

Public register and access to monitoring data

Part 9.5 of the Act requires the EPA to keep a public register of details and decisions of the EPA in relation to, for example:

- licence applications;
- licence conditions and variations;
- statements of compliance;
- load based licensing information; and
- load reduction agreements.

Under s320 of the Act application can be made to the EPA for access to monitoring data which has been submitted to the EPA by licensees.

This licence is issued to:

GLAXOSMITHKLINE AUSTRALIA PTY LTD
LOCKED BAG 3
ERMINGTON NSW 2115

subject to the conditions which follow.

Environment Protection Licence

Licence - 1024

1 Administrative Conditions

A1 What the licence authorises and regulates

A1.1 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

Scheduled Activity	Fee Based Activity	Scale
Chemical Production	Chemical production waste generation	> 5 - 100 T generated or stored
Chemical Production	Pharmaceutical and veterinary products production	0 - 2000 T produced

A2 Premises or plant to which this licence applies

A2.1 The licence applies to the following premises:

Premises Details
GLAXOSMITHKLINE
82 HUGHES AVENUE
ERMINGTON
NSW 2115
LOT 3 DP 602080

A3 Information supplied to the EPA

A3.1 Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.

In this condition the reference to "the licence application" includes a reference to:
a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and
b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.

2 Discharges to Air and Water and Applications to Land

Environment Protection Licence

Licence - 1024

P1 Location of monitoring/discharge points and areas

P1.1 The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.

3 Limit Conditions

L1 Pollution of waters

L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.

L2 Waste

L2.1 The licensee must not cause, permit or allow any waste to be received at the premises, except the wastes expressly referred to in the column titled “Waste” and meeting the definition, if any, in the column titled “Description” in the table below.
Any waste received at the premises must only be used for the activities referred to in relation to that waste in the column titled “Activity” in the table below.
Any waste received at the premises is subject to those limits or conditions, if any, referred to in relation to that waste contained in the column titled “Other Limits” in the table below.
This condition does not limit any other conditions in this licence.

Code	Waste	Description	Activity	Other Limits
NA	General or Specific exempted waste	Waste that meets all the conditions of a resource recovery exemption under Clause 51A of the Protection of the Environment Operations (Waste) Regulation 2005	As specified in each particular resource recovery exemption	NA
NA	Waste	Any waste received on site that is below licensing thresholds in Schedule 1 of the POEO Act, as in force from time to time	-	NA

4 Operating Conditions

O1 Activities must be carried out in a competent manner

O1.1 Licensed activities must be carried out in a competent manner.
This includes:

a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

O2 Maintenance of plant and equipment

O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity:
a) must be maintained in a proper and efficient condition; and
b) must be operated in a proper and efficient manner.

O3 Emergency response

O3.1 The licensee must maintain, and implement as necessary, a current Pollution Incident Response Management Plan (PIRMP) for the premises. The licensee must keep the PIRMP on the premises at all times. The PIRMP must document systems and procedures to deal with all types of incidents (e.g. spills, explosions or fire) that may occur at the premises or that may be associated with activities that occur at the premises and which are likely to cause harm to the environment. The PIRMP must be tested at least annually or following a pollution incident

O4 Processes and management

O4.1 The licensee must ensure that any liquid and/or non liquid waste generated and/or stored at the premises is assessed and classified in accordance with the DECC Waste Classification Guidelines as in force from time to time.

O4.2 The licensee must ensure that waste identified for recycling is stored separately from other waste.

O5 Waste management

O5.1 The licensee must ensure that the handling, labelling, containment, storage and disposal of clinical and sharps wastes are carried out in accordance with the “Waste Management Guidelines for Health Care Facilities”, 1998, issued by the NSW Department of Health.

O5.2 Without limiting to O5.1, the licensee must ensure that:

(a) clinical wastes are stored or contained in a weather proof secure location isolated from any other wastes, and that the storage area is maintained in a condition which presents no threat to the environment;

(b) the storage area for clinical wastes contains all necessary equipment required to clean and disinfect the area in case of spillage;

(c) no radioactive substance as defined by the Radiation Control Act, 1990 is mixe or stored with any of the clinical wastes;

(d) bagged clinical wastes are stored and transported in rigid containers which are leak proof, shatter proof, washable and have securely fitting lids to prevent spills at all times;

(e) bags and containers used for storage and transport of clinical wastes are colour coded and clearly marked with the wording 'Clinical Wastes' along with the biological hazard symbol in accordance with the requirements of the Waste Management Guidelines for Health Care Facilities, 1998, issued by the NSW Department of Health;

(f) containers used for clinical waste which are to be reused must be thoroughly cleansed and disinfected before being reuses; and

(g) where second hand containers are used, all other irrelevant markings shall be obliterated.

O5.3 In addition to O5.1, the licensee must ensure that;

(a) sharps are segregated by the use of enclosed rigid ompenetrable containers that comply with Australian Standard AS/NZS 4031-1992 (non-reusable containers) and 4261-1994 (reusable containers) before disposal in waste bags labelled 'Clinical Wastes' along with the appropriate biohazard symbol;

(b) sharps contaminated by any residual cytotoxic drug are segregated by the use of enclosed rigid impenetrable containers that comply with Australian Standard AS/NZS 4031-1992 (non-reusable containers) and 4261-1994 (reusable containers) before disposal in cytotoxic waste bags labelled 'Cytotoxic Wastes' along with the appropriate biohazard symbol; and

(c) sharps are transported in rigid impenetrable containers which are leakproof, shockproof and have securely fitting lids andthat comply with Australian Standard AS/NZS 3816-1998, Management of Clinical and Related Wastes.

5 Monitoring and Recording Conditions

M1 Monitoring records

M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.

M1.2 All records required to be kept by this licence must be:
a) in a legible form, or in a form that can readily be reduced to a legible form;
b) kept for at least 4 years after the monitoring or event to which they relate took place; and
c) produced in a legible form to any authorised officer of the EPA who asks to see them.

M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence:
a) the date(s) on which the sample was taken;
b) the time(s) at which the sample was collected;
c) the point at which the sample was taken; and
d) the name of the person who collected the sample.

M2 Recording of pollution complaints

M2.1 The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.

M2.2 The record must include details of the following:
a) the date and time of the complaint;
b) the method by which the complaint was made;
c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
d) the nature of the complaint;
e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
f) if no action was taken by the licensee, the reasons why no action was taken.

M2.3 The record of a complaint must be kept for at least 4 years after the complaint was made.

M2.4 The record must be produced to any authorised officer of the EPA who asks to see them.

M3 Telephone complaints line

M3.1 The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.

M3.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.

M3.3 The preceding two conditions do not apply until 3 months after: the date of the issue of this licence.

6 Reporting Conditions

R1 Annual return documents

R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:
a) a Statement of Compliance; and
b) a Monitoring and Complaints Summary.
At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.

R1.2 An Annual Return must be prepared in respect of each reporting period, except as provided below.

Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.

R1.3 Where this licence is transferred from the licensee to a new licensee:

a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and
b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.

Note: An application to transfer a licence must be made in the approved form for this purpose.

R1.4 Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on:
a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or
b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.

R1.5 The Annual Return for the reporting period must be supplied to the EPA by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').

R1.6 The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.

R1.7 Within the Annual Return, the Statement of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:
a) the licence holder; or
b) by a person approved in writing by the EPA to sign on behalf of the licence holder.

R2 Notification of environmental harm

Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

R2.1 Notifications must be made by telephoning the Environment Line service on 131 555.

R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.

R3 Written report

R3.1 Where an authorised officer of the EPA suspects on reasonable grounds that:
a) where this licence applies to premises, an event has occurred at the premises; or
b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence,
and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.

R3.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.

R3.3 The request may require a report which includes any or all of the following information:
a) the cause, time and duration of the event;
b) the type, volume and concentration of every pollutant discharged as a result of the event;
c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event;
d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;
e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;
f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and
g) any other relevant matters.

R3.4 The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.

7 General Conditions

G1 Copy of licence kept at the premises or plant

G1.1 A copy of this licence must be kept at the premises to which the licence applies.

G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.

G1.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.

Environment Protection Licence

Licence - 1024

Dictionary

General Dictionary

3DGM [in relation to a concentration limit]	Means the three day geometric mean, which is calculated by multiplying the results of the analysis of three samples collected on consecutive days and then taking the cubed root of that amount. Where one or more of the samples is zero or below the detection limit for the analysis, then 1 or the detection limit respectively should be used in place of those samples
Act	Means the Protection of the Environment Operations Act 1997
activity	Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment Operations Act 1997
actual load	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
AM	Together with a number, means an ambient air monitoring method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.
AMG	Australian Map Grid
anniversary date	The anniversary date is the anniversary each year of the date of issue of the licence. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
annual return	Is defined in R1.1
Approved Methods Publication	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
assessable pollutants	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
BOD	Means biochemical oxygen demand
CEM	Together with a number, means a continuous emission monitoring method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.
COD	Means chemical oxygen demand
composite sample	Unless otherwise specifically approved in writing by the EPA, a sample consisting of 24 individual samples collected at hourly intervals and each having an equivalent volume.
cond.	Means conductivity
environment	Has the same meaning as in the Protection of the Environment Operations Act 1997
environment protection legislation	Has the same meaning as in the Protection of the Environment Administration Act 1991
EPA	Means Environment Protection Authority of New South Wales.
fee-based activity classification	Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations (General) Regulation 2009.
general solid waste (non-putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997

Environment Protection Licence

Licence - 1024

flow weighted composite sample	Means a sample whose composites are sized in proportion to the flow at each composites time of collection.
general solid waste (putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environmen t Operations Act 1997
grab sample	Means a single sample taken at a point at a single time
hazardous waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
licensee	Means the licence holder described at the front of this licence
load calculation protocol	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
local authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
material harm	Has the same meaning as in section 147 Protection of the Environment Operations Act 1997
MBAS	Means methylene blue active substances
Minister	Means the Minister administering the Protection of the Environment Operations Act 1997
mobile plant	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
motor vehicle	Has the same meaning as in the Protection of the Environment Operations Act 1997
O&G	Means oil and grease
percentile [in relation to a concentration limit of a sample]	Means that percentage [eg.50%] of the number of samples taken that must meet the concentration limit specified in the licence for that pollutant over a specified period of time. In this licence, the specified period of time is the Reporting Period unless otherwise stated in this licence.
plant	Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles.
pollution of waters [or water pollution]	Has the same meaning as in the Protection of the Environment Operations Act 1997
premises	Means the premises described in condition A2.1
public authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
regional office	Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence
reporting period	For the purposes of this licence, the reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 mo nths. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
restricted solid waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
scheduled activity	Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997
special waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
TM	Together with a number, means a test method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.

Environment Protection Licence

Licence - 1024

TSP	Means total suspended particles
TSS	Means total suspended solids
Type 1 substance	Means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements
Type 2 substance	Means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements
utilisation area	Means any area shown as a utilisation area on a map submitted with the application for this licence
waste	Has the same meaning as in the Protection of the Environment Operations Act 1997
waste type	Means liquid, restricted solid waste, general solid waste (putrescible), general solid waste (non-putrescible), special waste or hazardous waste

Mr Tim Gilbert

Environment Protection Authority

(By Delegation)

Date of this edition: 19-June-2000

End Notes

1	Licence transferred through application 141325, approved on 16-Jul-2002, which came into effect on 01-Jul-2002.
2	Licence varied by notice 1021300, issued on 05-Nov-2002, which came into effect on 05-Nov-2002.
3	Licence varied by Admin corrections to archived record, issued on 02-Dec-2002, which came into effect on 02-Dec-2002.
4	Licence varied by notice 1072214, issued on 17-Oct-2007, which came into effect on 17-Oct-2007.
5	Condition A1.3 Not applicable varied by notice issued on <issue date> which came into effect on <effective date>
6	Licence varied by notice 1104803, issued on 12-Nov-2009, which came into effect on 12-Nov-2009.
7	Licence varied by correction to DECCW Region data record, issued on 13-Jul-2010, which came into effect on 13-Jul-2010.
8	Licence varied by correction to scheduled activity name, issued on 22-Dec-2010, which came into effect on 22-Dec-2010.

Section 58(5) Protection of the Environment Operations Act 1997

Licence Variation

Licence - 1024

GLAXOSMITHKLINE AUSTRALIA PTY LTD
ABN 47 100 162 481
LOCKED BAG 3
ERMINGTON NSW 2115

Attention: Anthony Murray

Notice Number	1529464
File Number	EF13/2984
Date	01-Jun-2015

NOTICE OF VARIATION OF LICENCE NO. 1024

BACKGROUND

A. GLAXOSMITHKLINE AUSTRALIA PTY LTD ("the licensee") is the holder of Environment Protection Licence No. 1024 ("the licence") issued under the *Protection of the Environment Operations Act 1997* ("the Act"). The licence authorises the carrying out of activities at 82 HUGHES AVENUE, ERMINGTON, NSW, 2115 ("the premises").

B. Due to an upgrade in the Environment Protection Authority's (EPA) licensing system, minor format changes have occurred to the Licence.

C. A draft of this licence variation was sent to the licensee for review and comment on Tuesday 19 May 2015.

D. The licensee replied by email on Sunday 24 May 2015 that there were no comments.

E. Therefore the EPA has issued this licence variation.

F. VARIATION OF LICENCE NO. 1024

1. By this notice the EPA varies licence No. 1024. The attached licence document contains all variations that are made to the licence by this notice.
2. The following variations have been made to the licence:

- Licence conditions in the current Licence that are not relevant to the Premises or that have previously contained "not applicable" have been removed from this variation. As a result, condition numbering has changed throughout the Licence. All conditions that are in the current Licence are included in this variation notice unless detailed below.
- Licence condition **A4 Information supplied to the EPA** is now referred to as **A3 Information supplied to the EPA** in the Licence.

Licence Variation

- Licence condition **L5 Waste** is now referred to as **L2 Waste** in the Licence.
- Licence Condition **L5.1** is now referred to as **L2.1**.
- **L2.1** has been varied to include a waste table. The waste table lists the wastes that are permitted to be received at the Premises with this Licence and includes a description of the waste, the activity that waste may be used for at the Premises and any other limits.
- Licence condition **M4 Recording of pollution complaints** is now referred to as **M2 Recording of pollution complaints** in the Licence.
- Licence condition **O3.1** changed to require a **Pollution Incident Response Management Plan** (PIRMP).
- Licence condition **R1.9** has been deleted as it is no longer relevant.

.....

Jacqueline Ingham

Unit Head

Waste & Resources - Waste Management

(by Delegation)

INFORMATION ABOUT THIS NOTICE

- This notice is issued under section 58(5) of the Act.
- Details provided in this notice, along with an updated version of the licence, will be available on the EPA's Public Register (http://www.epa.nsw.gov.au/prpoeo/index.htm) in accordance with section 308 of the Act.

Appeals against this decision

- You can appeal to the Land and Environment Court against this decision. The deadline for lodging the appeal is 21 days after you were given notice of this decision.

Licence Variation

When this notice begins to operate

- The variations to the licence specified in this notice begin to operate immediately from the date of this notice, unless another date is specified in this notice.
- If an appeal is made against this decision to vary the licence and the Land and Environment Court directs that the decision is stayed the decision does not operate until the stay ceases to have effect or the Land and Environment Court confirms the decision or the appeal is withdrawn (whichever occurs first).

Environment Protection Licence

Licence - 1024

Licence Details	
Number:	1024
Anniversary Date:	28-February

Licensee

GLAXOSMITHKLINE AUSTRALIA PTY LTD

LOCKED BAG 3

ERMINGTON NSW 2115

Premises

GLAXOSMITHKLINE

82 HUGHES AVENUE

ERMINGTON NSW 2115

Scheduled Activity

Chemical Production

Fee Based Activity	Scale
Chemical production waste generation	> 5-100 T generated or stored
Pharmaceutical and veterinary products production	0-2000 T produced

Region

Waste & Resources - Waste Management

59-61 Goulburn Street
SYDNEY NSW 2000

Phone: (02) 9995 5000

Fax: (02) 9995 5999

PO Box A290 SYDNEY SOUTH

NSW 1232

Environment Protection Licence

Licence - 1024

Environment Protection Licence

Licence - 1024

Environment Protection Licence

Licence - 1024

Information about this licence

Dictionary

A definition of terms used in the licence can be found in the dictionary at the end of this licence.

Responsibilities of licensee

Separate to the requirements of this licence, general obligations of licensees are set out in the Protection of the Environment Operations Act 1997 ("the Act") and the Regulations made under the Act. These include obligations to:

- ensure persons associated with you comply with this licence, as set out in section 64 of the Act;
- control the pollution of waters and the pollution of air (see for example sections 120 - 132 of the Act);
- report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

Variation of licence conditions

The licence holder can apply to vary the conditions of this licence. An application form for this purpose is available from the EPA.

The EPA may also vary the conditions of the licence at any time by written notice without an application being made.

Where a licence has been granted in relation to development which was assessed under the Environmental Planning and Assessment Act 1979 in accordance with the procedures applying to integrated development, the EPA may not impose conditions which are inconsistent with the development consent conditions until the licence is first reviewed under Part 3.6 of the Act.

Duration of licence

This licence will remain in force until the licence is surrendered by the licence holder or until it is suspended or revoked by the EPA or the Minister. A licence may only be surrendered with the written approval of the EPA.

Licence review

The Act requires that the EPA review your licence at least every 5 years after the issue of the licence, as set out in Part 3.6 and Schedule 5 of the Act. You will receive advance notice of the licence review.

Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

- an administrative fee; and
- a load-based fee (if applicable).

Environment Protection Licence

The EPA publication “A Guide to Licensing” contains information about how to calculate your licence fees. The licence requires that an Annual Return, comprising a Statement of Compliance and a summary of any monitoring required by the licence (including the recording of complaints), be submitted to the EPA. The Annual Return must be submitted within 60 days after the end of each reporting period. See condition R1 regarding the Annual Return reporting requirements.

Usually the licence fee period is the same as the reporting period.

Transfer of licence

The licence holder can apply to transfer the licence to another person. An application form for this purpose is available from the EPA.

Public register and access to monitoring data

Part 9.5 of the Act requires the EPA to keep a public register of details and decisions of the EPA in relation to, for example:

- licence applications;
- licence conditions and variations;
- statements of compliance;
- load based licensing information; and
- load reduction agreements.

Under s320 of the Act application can be made to the EPA for access to monitoring data which has been submitted to the EPA by licensees.

This licence is issued to:

GLAXOSMITHKLINE AUSTRALIA PTY LTD
LOCKED BAG 3
ERMINGTON NSW 2115

subject to the conditions which follow.

Environment Protection Licence

Licence - 1024

1 Administrative Conditions

A1 What the licence authorises and regulates

A1.1 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

Scheduled Activity	Fee Based Activity	Scale
Chemical Production	Chemical production waste generation	> 5 - 100 T generated or stored
Chemical Production	Pharmaceutical and veterinary products production	0 - 2000 T produced

A2 Premises or plant to which this licence applies

A2.1 The licence applies to the following premises:

Premises Details
GLAXOSMITHKLINE
82 HUGHES AVENUE
ERMINGTON
NSW 2115
LOT 3 DP 602080

A3 Information supplied to the EPA

A3.1 Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.

In this condition the reference to "the licence application" includes a reference to:
a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and
b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.

2 Discharges to Air and Water and Applications to Land

Environment Protection Licence

Licence - 1024

P1 Location of monitoring/discharge points and areas

P1.1 The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.

3 Limit Conditions

L1 Pollution of waters

L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.

L2 Waste

L2.1 The licensee must not cause, permit or allow any waste to be received at the premises, except the wastes expressly referred to in the column titled “Waste” and meeting the definition, if any, in the column titled “Description” in the table below.
Any waste received at the premises must only be used for the activities referred to in relation to that waste in the column titled “Activity” in the table below.
Any waste received at the premises is subject to those limits or conditions, if any, referred to in relation to that waste contained in the column titled “Other Limits” in the table below.
This condition does not limit any other conditions in this licence.

Code	Waste	Description	Activity	Other Limits
NA	General or Specific exempted waste	Waste that meets all the conditions of a resource recovery exemption under Clause 51A of the Protection of the Environment Operations (Waste) Regulation 2005	As specified in each particular resource recovery exemption	NA
NA	Waste	Any waste received on site that is below licensing thresholds in Schedule 1 of the POEO Act, as in force from time to time	-	NA

4 Operating Conditions

O1 Activities must be carried out in a competent manner

O1.1 Licensed activities must be carried out in a competent manner.
This includes:

a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

O2 Maintenance of plant and equipment

O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity:
a) must be maintained in a proper and efficient condition; and
b) must be operated in a proper and efficient manner.

O3 Emergency response

O3.1 The licensee must maintain, and implement as necessary, a current Pollution Incident Response Management Plan (PIRMP) for the premises. The licensee must keep the PIRMP on the premises at all times. The PIRMP must document systems and procedures to deal with all types of incidents (e.g. spills, explosions or fire) that may occur at the premises or that may be associated with activities that occur at the premises and which are likely to cause harm to the environment. The PIRMP must be tested at least annually or following a pollution incident

O4 Processes and management

O4.1 The licensee must ensure that any liquid and/or non liquid waste generated and/or stored at the premises is assessed and classified in accordance with the DECC Waste Classification Guidelines as in force from time to time.

O4.2 The licensee must ensure that waste identified for recycling is stored separately from other waste.

O5 Waste management

O5.1 The licensee must ensure that the handling, labelling, containment, storage and disposal of clinical and sharps wastes are carried out in accordance with the “Waste Management Guidelines for Health Care Facilities”, 1998, issued by the NSW Department of Health.

O5.2 Without limiting to O5.1, the licensee must ensure that:

(a) clinical wastes are stored or contained in a weather proof secure location isolated from any other wastes, and that the storage area is maintained in a condition which presents no threat to the environment;

(b) the storage area for clinical wastes contains all necessary equipment required to clean and disinfect the area in case of spillage;

(c) no radioactive substance as defined by the Radiation Control Act, 1990 is mixe or stored with any of the clinical wastes;

(d) bagged clinical wastes are stored and transported in rigid containers which are leak proof, shatter proof, washable and have securely fitting lids to prevent spills at all times;

(e) bags and containers used for storage and transport of clinical wastes are colour coded and clearly marked with the wording 'Clinical Wastes' along with the biological hazard symbol in accordance with the requirements of the Waste Management Guidelines for Health Care Facilities, 1998, issued by the NSW Department of Health;

(f) containers used for clinical waste which are to be reused must be thoroughly cleansed and disinfected before being reuses; and

(g) where second hand containers are used, all other irrelevant markings shall be obliterated.

O5.3 In addition to O5.1, the licensee must ensure that;

(a) sharps are segregated by the use of enclosed rigid ompenetrable containers that comply with Australian Standard AS/NZS 4031-1992 (non-reusable containers) and 4261-1994 (reusable containers) before disposal in waste bags labelled 'Clinical Wastes' along with the appropriate biohazard symbol;

(b) sharps contaminated by any residual cytotoxic drug are segregated by the use of enclosed rigid impenetrable containers that comply with Australian Standard AS/NZS 4031-1992 (non-reusable containers) and 4261-1994 (reusable containers) before disposal in cytotoxic waste bags labelled 'Cytotoxic Wastes' along with the appropriate biohazard symbol; and

(c) sharps are transported in rigid impenetrable containers which are leakproof, shockproof and have securely fitting lids andthat comply with Australian Standard AS/NZS 3816-1998, Management of Clinical and Related Wastes.

5 Monitoring and Recording Conditions

M1 Monitoring records

M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.

M1.2 All records required to be kept by this licence must be:
a) in a legible form, or in a form that can readily be reduced to a legible form;
b) kept for at least 4 years after the monitoring or event to which they relate took place; and
c) produced in a legible form to any authorised officer of the EPA who asks to see them.

M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence:
a) the date(s) on which the sample was taken;
b) the time(s) at which the sample was collected;
c) the point at which the sample was taken; and
d) the name of the person who collected the sample.

M2 Recording of pollution complaints

M2.1 The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.

M2.2 The record must include details of the following:
a) the date and time of the complaint;
b) the method by which the complaint was made;
c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
d) the nature of the complaint;
e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
f) if no action was taken by the licensee, the reasons why no action was taken.

M2.3 The record of a complaint must be kept for at least 4 years after the complaint was made.

M2.4 The record must be produced to any authorised officer of the EPA who asks to see them.

M3 Telephone complaints line

M3.1 The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.

M3.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.

M3.3 The preceding two conditions do not apply until 3 months after: the date of the issue of this licence.

6 Reporting Conditions

R1 Annual return documents

R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:
a) a Statement of Compliance; and
b) a Monitoring and Complaints Summary.
At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.

R1.2 An Annual Return must be prepared in respect of each reporting period, except as provided below.

Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.

R1.3 Where this licence is transferred from the licensee to a new licensee:

a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and
b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.

Note: An application to transfer a licence must be made in the approved form for this purpose.

R1.4 Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on:
a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or
b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.

R1.5 The Annual Return for the reporting period must be supplied to the EPA by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').

R1.6 The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.

R1.7 Within the Annual Return, the Statement of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:
a) the licence holder; or
b) by a person approved in writing by the EPA to sign on behalf of the licence holder.

R2 Notification of environmental harm

Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

R2.1 Notifications must be made by telephoning the Environment Line service on 131 555.

R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.

R3 Written report

R3.1 Where an authorised officer of the EPA suspects on reasonable grounds that:
a) where this licence applies to premises, an event has occurred at the premises; or
b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence,
and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.

R3.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.

R3.3 The request may require a report which includes any or all of the following information:
a) the cause, time and duration of the event;
b) the type, volume and concentration of every pollutant discharged as a result of the event;
c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event;
d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;
e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;
f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and
g) any other relevant matters.

R3.4 The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.

7 General Conditions

G1 Copy of licence kept at the premises or plant

G1.1 A copy of this licence must be kept at the premises to which the licence applies.

G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.

G1.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.

Environment Protection Licence

Licence - 1024

Dictionary

General Dictionary

3DGM [in relation to a concentration limit]	Means the three day geometric mean, which is calculated by multiplying the results of the analysis of three samples collected on consecutive days and then taking the cubed root of that amount. Where one or more of the samples is zero or below the detection limit for the analysis, then 1 or the detection limit respectively should be used in place of those samples
Act	Means the Protection of the Environment Operations Act 1997
activity	Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment Operations Act 1997
actual load	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
AM	Together with a number, means an ambient air monitoring method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.
AMG	Australian Map Grid
anniversary date	The anniversary date is the anniversary each year of the date of issue of the licence. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
annual return	Is defined in R1.1
Approved Methods Publication	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
assessable pollutants	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
BOD	Means biochemical oxygen demand
CEM	Together with a number, means a continuous emission monitoring method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.
COD	Means chemical oxygen demand
composite sample	Unless otherwise specifically approved in writing by the EPA, a sample consisting of 24 individual samples collected at hourly intervals and each having an equivalent volume.
cond.	Means conductivity
environment	Has the same meaning as in the Protection of the Environment Operations Act 1997
environment protection legislation	Has the same meaning as in the Protection of the Environment Administration Act 1991
EPA	Means Environment Protection Authority of New South Wales.
fee-based activity classification	Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations (General) Regulation 2009.
general solid waste (non-putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997

Environment Protection Licence

Licence - 1024

flow weighted composite sample	Means a sample whose composites are sized in proportion to the flow at each composites time of collection.
general solid waste (putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environmen t Operations Act 1997
grab sample	Means a single sample taken at a point at a single time
hazardous waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
licensee	Means the licence holder described at the front of this licence
load calculation protocol	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
local authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
material harm	Has the same meaning as in section 147 Protection of the Environment Operations Act 1997
MBAS	Means methylene blue active substances
Minister	Means the Minister administering the Protection of the Environment Operations Act 1997
mobile plant	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
motor vehicle	Has the same meaning as in the Protection of the Environment Operations Act 1997
O&G	Means oil and grease
percentile [in relation to a concentration limit of a sample]	Means that percentage [eg.50%] of the number of samples taken that must meet the concentration limit specified in the licence for that pollutant over a specified period of time. In this licence, the specified period of time is the Reporting Period unless otherwise stated in this licence.
plant	Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles.
pollution of waters [or water pollution]	Has the same meaning as in the Protection of the Environment Operations Act 1997
premises	Means the premises described in condition A2.1
public authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
regional office	Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence
reporting period	For the purposes of this licence, the reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 mo nths. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
restricted solid waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
scheduled activity	Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997
special waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
TM	Together with a number, means a test method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.

Environment Protection Licence

Licence - 1024

TSP	Means total suspended particles
TSS	Means total suspended solids
Type 1 substance	Means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements
Type 2 substance	Means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements
utilisation area	Means any area shown as a utilisation area on a map submitted with the application for this licence
waste	Has the same meaning as in the Protection of the Environment Operations Act 1997
waste type	Means liquid, restricted solid waste, general solid waste (putrescible), general solid waste (non-putrescible), special waste or hazardous waste

Mr Tim Gilbert

Environment Protection Authority

(By Delegation)

Date of this edition: 19-June-2000

End Notes

1	Licence transferred through application 141325, approved on 16-Jul-2002, which came into effect on 01-Jul-2002.
2	Licence varied by notice 1021300, issued on 05-Nov-2002, which came into effect on 05-Nov-2002.
3	Licence varied by Admin corrections to archived record, issued on 02-Dec-2002, which came into effect on 02-Dec-2002.
4	Licence varied by notice 1072214, issued on 17-Oct-2007, which came into effect on 17-Oct-2007.
5	Condition A1.3 Not applicable varied by notice issued on <issue date> which came into effect on <effective date>
6	Licence varied by notice 1104803, issued on 12-Nov-2009, which came into effect on 12-Nov-2009.
7	Licence varied by correction to DECCW Region data record, issued on 13-Jul-2010, which came into effect on 13-Jul-2010.
8	Licence varied by correction to scheduled activity name, issued on 22-Dec-2010, which came into effect on 22-Dec-2010.

Section 58(5) Protection of the Environment Operations Act 1997

Licence Variation

Licence - 1024

GLAXOSMITHKLINE AUSTRALIA PTY LTD
ABN 47 100 162 481
LOCKED BAG 3
ERMINGTON NSW 2115

Attention: Anthony Murray

Notice Number	1529464
File Number	EF13/2984
Date	01-Jun-2015

NOTICE OF VARIATION OF LICENCE NO. 1024

BACKGROUND

A. GLAXOSMITHKLINE AUSTRALIA PTY LTD ("the licensee") is the holder of Environment Protection Licence No. 1024 ("the licence") issued under the *Protection of the Environment Operations Act 1997* ("the Act"). The licence authorises the carrying out of activities at 82 HUGHES AVENUE, ERMINGTON, NSW, 2115 ("the premises").

B. Due to an upgrade in the Environment Protection Authority's (EPA) licensing system, minor format changes have occurred to the Licence.

C. A draft of this licence variation was sent to the licensee for review and comment on Tuesday 19 May 2015.

D. The licensee replied by email on Sunday 24 May 2015 that there were no comments.

E. Therefore the EPA has issued this licence variation.

F. VARIATION OF LICENCE NO. 1024

1. By this notice the EPA varies licence No. 1024. The attached licence document contains all variations that are made to the licence by this notice.
2. The following variations have been made to the licence:

- Licence conditions in the current Licence that are not relevant to the Premises or that have previously contained "not applicable" have been removed from this variation. As a result, condition numbering has changed throughout the Licence. All conditions that are in the current Licence are included in this variation notice unless detailed below.
- Licence condition **A4 Information supplied to the EPA** is now referred to as **A3 Information supplied to the EPA** in the Licence.

Licence Variation

- Licence condition **L5 Waste** is now referred to as **L2 Waste** in the Licence.
- Licence Condition **L5.1** is now referred to as **L2.1**.
- **L2.1** has been varied to include a waste table. The waste table lists the wastes that are permitted to be received at the Premises with this Licence and includes a description of the waste, the activity that waste may be used for at the Premises and any other limits.
- Licence condition **M4 Recording of pollution complaints** is now referred to as **M2 Recording of pollution complaints** in the Licence.
- Licence condition **O3.1** changed to require a **Pollution Incident Response Management Plan** (PIRMP).
- Licence condition **R1.9** has been deleted as it is no longer relevant.

.....

Jacqueline Ingham

Unit Head

Waste & Resources - Waste Management

(by Delegation)

INFORMATION ABOUT THIS NOTICE

- This notice is issued under section 58(5) of the Act.
- Details provided in this notice, along with an updated version of the licence, will be available on the EPA's Public Register (http://www.epa.nsw.gov.au/prpoeo/index.htm) in accordance with section 308 of the Act.

Appeals against this decision

- You can appeal to the Land and Environment Court against this decision. The deadline for lodging the appeal is 21 days after you were given notice of this decision.

Licence Variation

When this notice begins to operate

- The variations to the licence specified in this notice begin to operate immediately from the date of this notice, unless another date is specified in this notice.
- If an appeal is made against this decision to vary the licence and the Land and Environment Court directs that the decision is stayed the decision does not operate until the stay ceases to have effect or the Land and Environment Court confirms the decision or the appeal is withdrawn (whichever occurs first).

Environment Protection Licence

Licence - 1024

Licence Details	
Number:	1024
Anniversary Date:	28-February

Licensee

GLAXOSMITHKLINE AUSTRALIA PTY LTD

LOCKED BAG 3

ERMINGTON NSW 2115

Premises

GLAXOSMITHKLINE

82 HUGHES AVENUE

ERMINGTON NSW 2115

Scheduled Activity

Chemical Production

Fee Based Activity	Scale
Chemical production waste generation	> 5-100 T generated or stored
Pharmaceutical and veterinary products production	0-2000 T produced

Region

Waste & Resources - Waste Management

59-61 Goulburn Street
SYDNEY NSW 2000

Phone: (02) 9995 5000

Fax: (02) 9995 5999

PO Box A290 SYDNEY SOUTH

NSW 1232

Environment Protection Licence

Licence - 1024

Environment Protection Licence

Licence - 1024

Environment Protection Licence

Licence - 1024

Information about this licence

Dictionary

A definition of terms used in the licence can be found in the dictionary at the end of this licence.

Responsibilities of licensee

Separate to the requirements of this licence, general obligations of licensees are set out in the Protection of the Environment Operations Act 1997 ("the Act") and the Regulations made under the Act. These include obligations to:

- ensure persons associated with you comply with this licence, as set out in section 64 of the Act;
- control the pollution of waters and the pollution of air (see for example sections 120 - 132 of the Act);
- report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

Variation of licence conditions

The licence holder can apply to vary the conditions of this licence. An application form for this purpose is available from the EPA.

The EPA may also vary the conditions of the licence at any time by written notice without an application being made.

Where a licence has been granted in relation to development which was assessed under the Environmental Planning and Assessment Act 1979 in accordance with the procedures applying to integrated development, the EPA may not impose conditions which are inconsistent with the development consent conditions until the licence is first reviewed under Part 3.6 of the Act.

Duration of licence

This licence will remain in force until the licence is surrendered by the licence holder or until it is suspended or revoked by the EPA or the Minister. A licence may only be surrendered with the written approval of the EPA.

Licence review

The Act requires that the EPA review your licence at least every 5 years after the issue of the licence, as set out in Part 3.6 and Schedule 5 of the Act. You will receive advance notice of the licence review.

Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

- an administrative fee; and
- a load-based fee (if applicable).

Environment Protection Licence

The EPA publication “A Guide to Licensing” contains information about how to calculate your licence fees. The licence requires that an Annual Return, comprising a Statement of Compliance and a summary of any monitoring required by the licence (including the recording of complaints), be submitted to the EPA. The Annual Return must be submitted within 60 days after the end of each reporting period. See condition R1 regarding the Annual Return reporting requirements.

Usually the licence fee period is the same as the reporting period.

Transfer of licence

The licence holder can apply to transfer the licence to another person. An application form for this purpose is available from the EPA.

Public register and access to monitoring data

Part 9.5 of the Act requires the EPA to keep a public register of details and decisions of the EPA in relation to, for example:

- licence applications;
- licence conditions and variations;
- statements of compliance;
- load based licensing information; and
- load reduction agreements.

Under s320 of the Act application can be made to the EPA for access to monitoring data which has been submitted to the EPA by licensees.

This licence is issued to:

GLAXOSMITHKLINE AUSTRALIA PTY LTD
LOCKED BAG 3
ERMINGTON NSW 2115

subject to the conditions which follow.

Environment Protection Licence

Licence - 1024

1 Administrative Conditions

A1 What the licence authorises and regulates

A1.1 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

Scheduled Activity	Fee Based Activity	Scale
Chemical Production	Chemical production waste generation	> 5 - 100 T generated or stored
Chemical Production	Pharmaceutical and veterinary products production	0 - 2000 T produced

A2 Premises or plant to which this licence applies

A2.1 The licence applies to the following premises:

Premises Details
GLAXOSMITHKLINE
82 HUGHES AVENUE
ERMINGTON
NSW 2115
LOT 3 DP 602080

A3 Information supplied to the EPA

A3.1 Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.

In this condition the reference to "the licence application" includes a reference to:
a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and
b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.

2 Discharges to Air and Water and Applications to Land

Environment Protection Licence

Licence - 1024

P1 Location of monitoring/discharge points and areas

P1.1 The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.

3 Limit Conditions

L1 Pollution of waters

L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.

L2 Waste

L2.1 The licensee must not cause, permit or allow any waste to be received at the premises, except the wastes expressly referred to in the column titled “Waste” and meeting the definition, if any, in the column titled “Description” in the table below.
Any waste received at the premises must only be used for the activities referred to in relation to that waste in the column titled “Activity” in the table below.
Any waste received at the premises is subject to those limits or conditions, if any, referred to in relation to that waste contained in the column titled “Other Limits” in the table below.
This condition does not limit any other conditions in this licence.

Code	Waste	Description	Activity	Other Limits
NA	General or Specific exempted waste	Waste that meets all the conditions of a resource recovery exemption under Clause 51A of the Protection of the Environment Operations (Waste) Regulation 2005	As specified in each particular resource recovery exemption	NA
NA	Waste	Any waste received on site that is below licensing thresholds in Schedule 1 of the POEO Act, as in force from time to time	-	NA

4 Operating Conditions

O1 Activities must be carried out in a competent manner

O1.1 Licensed activities must be carried out in a competent manner.
This includes:

a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

O2 Maintenance of plant and equipment

O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity:
a) must be maintained in a proper and efficient condition; and
b) must be operated in a proper and efficient manner.

O3 Emergency response

O3.1 The licensee must maintain, and implement as necessary, a current Pollution Incident Response Management Plan (PIRMP) for the premises. The licensee must keep the PIRMP on the premises at all times. The PIRMP must document systems and procedures to deal with all types of incidents (e.g. spills, explosions or fire) that may occur at the premises or that may be associated with activities that occur at the premises and which are likely to cause harm to the environment. The PIRMP must be tested at least annually or following a pollution incident

O4 Processes and management

O4.1 The licensee must ensure that any liquid and/or non liquid waste generated and/or stored at the premises is assessed and classified in accordance with the DECC Waste Classification Guidelines as in force from time to time.

O4.2 The licensee must ensure that waste identified for recycling is stored separately from other waste.

O5 Waste management

O5.1 The licensee must ensure that the handling, labelling, containment, storage and disposal of clinical and sharps wastes are carried out in accordance with the “Waste Management Guidelines for Health Care Facilities”, 1998, issued by the NSW Department of Health.

O5.2 Without limiting to O5.1, the licensee must ensure that:

(a) clinical wastes are stored or contained in a weather proof secure location isolated from any other wastes, and that the storage area is maintained in a condition which presents no threat to the environment;

(b) the storage area for clinical wastes contains all necessary equipment required to clean and disinfect the area in case of spillage;

(c) no radioactive substance as defined by the Radiation Control Act, 1990 is mixe or stored with any of the clinical wastes;

(d) bagged clinical wastes are stored and transported in rigid containers which are leak proof, shatter proof, washable and have securely fitting lids to prevent spills at all times;

(e) bags and containers used for storage and transport of clinical wastes are colour coded and clearly marked with the wording 'Clinical Wastes' along with the biological hazard symbol in accordance with the requirements of the Waste Management Guidelines for Health Care Facilities, 1998, issued by the NSW Department of Health;

(f) containers used for clinical waste which are to be reused must be thoroughly cleansed and disinfected before being reuses; and

(g) where second hand containers are used, all other irrelevant markings shall be obliterated.

O5.3 In addition to O5.1, the licensee must ensure that;

(a) sharps are segregated by the use of enclosed rigid ompenetrable containers that comply with Australian Standard AS/NZS 4031-1992 (non-reusable containers) and 4261-1994 (reusable containers) before disposal in waste bags labelled 'Clinical Wastes' along with the appropriate biohazard symbol;

(b) sharps contaminated by any residual cytotoxic drug are segregated by the use of enclosed rigid impenetrable containers that comply with Australian Standard AS/NZS 4031-1992 (non-reusable containers) and 4261-1994 (reusable containers) before disposal in cytotoxic waste bags labelled 'Cytotoxic Wastes' along with the appropriate biohazard symbol; and

(c) sharps are transported in rigid impenetrable containers which are leakproof, shockproof and have securely fitting lids andthat comply with Australian Standard AS/NZS 3816-1998, Management of Clinical and Related Wastes.

5 Monitoring and Recording Conditions

M1 Monitoring records

M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.

M1.2 All records required to be kept by this licence must be:
a) in a legible form, or in a form that can readily be reduced to a legible form;
b) kept for at least 4 years after the monitoring or event to which they relate took place; and
c) produced in a legible form to any authorised officer of the EPA who asks to see them.

M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence:
a) the date(s) on which the sample was taken;
b) the time(s) at which the sample was collected;
c) the point at which the sample was taken; and
d) the name of the person who collected the sample.

M2 Recording of pollution complaints

M2.1 The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.

M2.2 The record must include details of the following:
a) the date and time of the complaint;
b) the method by which the complaint was made;
c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
d) the nature of the complaint;
e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
f) if no action was taken by the licensee, the reasons why no action was taken.

M2.3 The record of a complaint must be kept for at least 4 years after the complaint was made.

M2.4 The record must be produced to any authorised officer of the EPA who asks to see them.

M3 Telephone complaints line

M3.1 The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.

M3.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.

M3.3 The preceding two conditions do not apply until 3 months after: the date of the issue of this licence.

6 Reporting Conditions

R1 Annual return documents

R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:
a) a Statement of Compliance; and
b) a Monitoring and Complaints Summary.
At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.

R1.2 An Annual Return must be prepared in respect of each reporting period, except as provided below.

Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.

R1.3 Where this licence is transferred from the licensee to a new licensee:

a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and
b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.

Note: An application to transfer a licence must be made in the approved form for this purpose.

R1.4 Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on:
a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or
b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.

R1.5 The Annual Return for the reporting period must be supplied to the EPA by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').

R1.6 The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.

R1.7 Within the Annual Return, the Statement of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:
a) the licence holder; or
b) by a person approved in writing by the EPA to sign on behalf of the licence holder.

R2 Notification of environmental harm

Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

R2.1 Notifications must be made by telephoning the Environment Line service on 131 555.

R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.

R3 Written report

R3.1 Where an authorised officer of the EPA suspects on reasonable grounds that:
a) where this licence applies to premises, an event has occurred at the premises; or
b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence,
and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.

R3.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.

R3.3 The request may require a report which includes any or all of the following information:
a) the cause, time and duration of the event;
b) the type, volume and concentration of every pollutant discharged as a result of the event;
c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event;
d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;
e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;
f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and
g) any other relevant matters.

R3.4 The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.

7 General Conditions

G1 Copy of licence kept at the premises or plant

G1.1 A copy of this licence must be kept at the premises to which the licence applies.

G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.

G1.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.

Environment Protection Licence

Licence - 1024

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Environment Protection Licence

Licence - 1024

flow weighted composite sample	Means a sample whose composites are sized in proportion to the flow at each composites time of collection.
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grab sample	Means a single sample taken at a point at a single time
hazardous waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
licensee	Means the licence holder described at the front of this licence
load calculation protocol	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
local authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
material harm	Has the same meaning as in section 147 Protection of the Environment Operations Act 1997
MBAS	Means methylene blue active substances
Minister	Means the Minister administering the Protection of the Environment Operations Act 1997
mobile plant	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
motor vehicle	Has the same meaning as in the Protection of the Environment Operations Act 1997
O&G	Means oil and grease
percentile [in relation to a concentration limit of a sample]	Means that percentage [eg.50%] of the number of samples taken that must meet the concentration limit specified in the licence for that pollutant over a specified period of time. In this licence, the specified period of time is the Reporting Period unless otherwise stated in this licence.
plant	Includes all plant within the meaning of the Protection of the Environment Operations Act 1997 as well as motor vehicles.
pollution of waters [or water pollution]	Has the same meaning as in the Protection of the Environment Operations Act 1997
premises	Means the premises described in condition A2.1
public authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
regional office	Means the relevant EPA office referred to in the Contacting the EPA document accompanying this licence
reporting period	For the purposes of this licence, the reporting period means the period of 12 months after the issue of the licence, and each subsequent period of 12 mo nths. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
restricted solid waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
scheduled activity	Means an activity listed in Schedule 1 of the Protection of the Environment Operations Act 1997
special waste	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997
TM	Together with a number, means a test method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.

Environment Protection Licence

Licence - 1024

TSP	Means total suspended particles
TSS	Means total suspended solids
Type 1 substance	Means the elements antimony, arsenic, cadmium, lead or mercury or any compound containing one or more of those elements
Type 2 substance	Means the elements beryllium, chromium, cobalt, manganese, nickel, selenium, tin or vanadium or any compound containing one or more of those elements
utilisation area	Means any area shown as a utilisation area on a map submitted with the application for this licence
waste	Has the same meaning as in the Protection of the Environment Operations Act 1997
waste type	Means liquid, restricted solid waste, general solid waste (putrescible), general solid waste (non-putrescible), special waste or hazardous waste

Mr Tim Gilbert

Environment Protection Authority

(By Delegation)

Date of this edition: 19-June-2000

End Notes

1	Licence transferred through application 141325, approved on 16-Jul-2002, which came into effect on 01-Jul-2002.
2	Licence varied by notice 1021300, issued on 05-Nov-2002, which came into effect on 05-Nov-2002.
3	Licence varied by Admin corrections to archived record, issued on 02-Dec-2002, which came into effect on 02-Dec-2002.
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5	Condition A1.3 Not applicable varied by notice issued on <issue date> which came into effect on <effective date>
6	Licence varied by notice 1104803, issued on 12-Nov-2009, which came into effect on 12-Nov-2009.
7	Licence varied by correction to DECCW Region data record, issued on 13-Jul-2010, which came into effect on 13-Jul-2010.
8	Licence varied by correction to scheduled activity name, issued on 22-Dec-2010, which came into effect on 22-Dec-2010.

Section 58(5) Protection of the Environment Operations Act 1997

Licence Variation

Licence - 1024

GLAXOSMITHKLINE CONSUMER HEALTHCARE AUSTRALIA PTY LTD
ABN 68 603 310 292 ACN 603 310 292
LOCKED BAG 3
ERMINGTON NSW 2115

Attention: Amapola Maher

Notice Number	1534833
File Number	EF15/16571
Date	15-Dec-2015

NOTICE OF VARIATION OF LICENCE NO. 1024

BACKGROUND

A. GLAXOSMITHKLINE CONSUMER HEALTHCARE AUSTRALIA PTY LTD ("the licensee") is the holder of Environment Protection Licence No. 1024 ("the licence") issued under the *Protection of the Environment Operations Act 1997* ("the Act"). The licence authorises the carrying out of activities at 82 HUGHES AVENUE, ERMINGTON, NSW, 2115 ("the premises").

B. On 06-Oct-2015 the Environment Protection Authority (EPA) received an application for the variation of the licence.

C. GlaxoSmithKline Consumer Healthcare Australia Pty Ltd applied to vary the licence Fee – based activity and scale, to include;

- Pharmaceutical or veterinary products production, at a scale of "more than 2,000 but not more than 5,000 tonnes", and;
- Chemical production waste generation, at a scale of "more than 100 tonnes".

D. On 4 & 9 November 2015 the EPA requested for the Development Consent issued to the Licensee in order to ascertain the environmental impacts that would be associated with the increase in the scale of the licensed activity.

E. On 7 December 2015 the Licensee notified the EPA that a development consent did not exist, because the activity had been undertaken at the Premises since 1956. GlaxoSmithKline submitted an environment impact statement which addressed the risks associated with an increase in production level.

D. On 14 December 2015, a draft Licence Variation Notice No. 1534833 was sent to the Licensee for review and comment.

E. On 15 December 2015, the EPA received correspondence from the Licensee stating they have no objections to any of the changes proposed in the variation notice.

Licence Variation

F. The EPA has considered the information provided and has now issued the Licence Variation.

VARIATION OF LICENCE NO. 1024

1. By this notice the EPA varies licence No. 1024. The attached licence document contains all variations that are made to the licence by this notice.
2. The following variations have been made to the licence:
   - The activity scale and classification for Fee - based activities in Condition A1.1 has been amended as in C above.

.....

Jacqueline Ingham

Unit Head

Waste & Resources - Waste Management

(by Delegation)

INFORMATION ABOUT THIS NOTICE

- This notice is issued under section 58(5) of the Act.
- Details provided in this notice, along with an updated version of the licence, will be available on the EPA's Public Register (http://www.epa.nsw.gov.au/prpoeo/index.htm) in accordance with section 308 of the Act.

Appeals against this decision

- You can appeal to the Land and Environment Court against this decision. The deadline for lodging the appeal is 21 days after you were given notice of this decision.

When this notice begins to operate

- The variations to the licence specified in this notice begin to operate immediately from the date of this notice, unless another date is specified in this notice.
- If an appeal is made against this decision to vary the licence and the Land and Environment Court directs that the decision is stayed the decision does not operate until the stay ceases to have effect or the Land and Environment Court confirms the decision or the appeal is withdrawn (whichever occurs first).

Environment Protection Licence

Licence - 1024

Licence Details	
Number:	1024
Anniversary Date:	28-February

Licensee

GLAXOSMITHKLINE CONSUMER HEALTHCARE AUSTRALIA PTY LTD

LOCKED BAG 3

ERMINGTON NSW 2115

Premises

GLAXOSMITHKLINE

82 HUGHES AVENUE

ERMINGTON NSW 2115

Scheduled Activity

Chemical Production

Fee Based Activity	Scale
Chemical production waste generation	> 100 T generated or stored
Pharmaceutical and veterinary products production	> 2000-5000 T produced

Region

Waste & Resources - Waste Management

59-61 Goulburn Street
SYDNEY NSW 2000

Phone: (02) 9995 5000

Fax: (02) 9995 5999

PO Box A290 SYDNEY SOUTH

NSW 1232

Environment Protection Licence

Licence - 1024

Environment Protection Licence

Licence - 1024

Environment Protection Licence

Information about this licence

Dictionary

A definition of terms used in the licence can be found in the dictionary at the end of this licence.

Responsibilities of licensee

Separate to the requirements of this licence, general obligations of licensees are set out in the Protection of the Environment Operations Act 1997 ("the Act") and the Regulations made under the Act. These include obligations to:

- ensure persons associated with you comply with this licence, as set out in section 64 of the Act;
- control the pollution of waters and the pollution of air (see for example sections 120 - 132 of the Act);
- report incidents causing or threatening material environmental harm to the environment, as set out in Part 5.7 of the Act.

Variation of licence conditions

The licence holder can apply to vary the conditions of this licence. An application form for this purpose is available from the EPA.

The EPA may also vary the conditions of the licence at any time by written notice without an application being made.

Where a licence has been granted in relation to development which was assessed under the Environmental Planning and Assessment Act 1979 in accordance with the procedures applying to integrated development, the EPA may not impose conditions which are inconsistent with the development consent conditions until the licence is first reviewed under Part 3.6 of the Act.

Duration of licence

This licence will remain in force until the licence is surrendered by the licence holder or until it is suspended or revoked by the EPA or the Minister. A licence may only be surrendered with the written approval of the EPA.

Licence review

The Act requires that the EPA review your licence at least every 5 years after the issue of the licence, as set out in Part 3.6 and Schedule 5 of the Act. You will receive advance notice of the licence review.

Fees and annual return to be sent to the EPA

For each licence fee period you must pay:

- an administrative fee; and
- a load-based fee (if applicable).

Environment Protection Licence

The EPA publication “A Guide to Licensing” contains information about how to calculate your licence fees. The licence requires that an Annual Return, comprising a Statement of Compliance and a summary of any monitoring required by the licence (including the recording of complaints), be submitted to the EPA. The Annual Return must be submitted within 60 days after the end of each reporting period. See condition R1 regarding the Annual Return reporting requirements.

Usually the licence fee period is the same as the reporting period.

Transfer of licence

The licence holder can apply to transfer the licence to another person. An application form for this purpose is available from the EPA.

Public register and access to monitoring data

Part 9.5 of the Act requires the EPA to keep a public register of details and decisions of the EPA in relation to, for example:

- licence applications;
- licence conditions and variations;
- statements of compliance;
- load based licensing information; and
- load reduction agreements.

Under s320 of the Act application can be made to the EPA for access to monitoring data which has been submitted to the EPA by licensees.

This licence is issued to:

GLAXOSMITHKLINE CONSUMER HEALTHCARE AUSTRALIA PTY LTD
LOCKED BAG 3
ERMINGTON NSW 2115

subject to the conditions which follow.

Environment Protection Licence

Licence - 1024

1 Administrative Conditions

A1 What the licence authorises and regulates

A1.1 This licence authorises the carrying out of the scheduled activities listed below at the premises specified in A2. The activities are listed according to their scheduled activity classification, fee-based activity classification and the scale of the operation.

Unless otherwise further restricted by a condition of this licence, the scale at which the activity is carried out must not exceed the maximum scale specified in this condition.

Scheduled Activity	Fee Based Activity	Scale
Chemical Production	Chemical production waste generation	> 100 T generated or stored
Chemical Production	Pharmaceutical and veterinary products production	> 2000 - 5000 T produced

A2 Premises or plant to which this licence applies

A2.1 The licence applies to the following premises:

Premises Details
GLAXOSMITHKLINE
82 HUGHES AVENUE
ERMINGTON
NSW 2115
LOT 3 DP 602080

A3 Information supplied to the EPA

A3.1 Works and activities must be carried out in accordance with the proposal contained in the licence application, except as expressly provided by a condition of this licence.

In this condition the reference to "the licence application" includes a reference to:
a) the applications for any licences (including former pollution control approvals) which this licence replaces under the Protection of the Environment Operations (Savings and Transitional) Regulation 1998; and
b) the licence information form provided by the licensee to the EPA to assist the EPA in connection with the issuing of this licence.

2 Discharges to Air and Water and Applications to Land

Environment Protection Licence

Licence - 1024

P1 Location of monitoring/discharge points and areas

P1.1 The following utilisation areas referred to in the table below are identified in this licence for the purposes of the monitoring and/or the setting of limits for any application of solids or liquids to the utilisation area.

3 Limit Conditions

L1 Pollution of waters

L1.1 Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.

L2 Waste

L2.1 The licensee must not cause, permit or allow any waste to be received at the premises, except the wastes expressly referred to in the column titled “Waste” and meeting the definition, if any, in the column titled “Description” in the table below.
Any waste received at the premises must only be used for the activities referred to in relation to that waste in the column titled “Activity” in the table below.
Any waste received at the premises is subject to those limits or conditions, if any, referred to in relation to that waste contained in the column titled “Other Limits” in the table below.
This condition does not limit any other conditions in this licence.

Code	Waste	Description	Activity	Other Limits
NA	General or Specific exempted waste	Waste that meets all the conditions of a resource recovery exemption under Clause 51A of the Protection of the Environment Operations (Waste) Regulation 2005	As specified in each particular resource recovery exemption	NA
NA	Waste	Any waste received on site that is below licensing thresholds in Schedule 1 of the POEO Act, as in force from time to time	-	NA

4 Operating Conditions

O1 Activities must be carried out in a competent manner

O1.1 Licensed activities must be carried out in a competent manner.
This includes:

a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and
b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.

O2 Maintenance of plant and equipment

O2.1 All plant and equipment installed at the premises or used in connection with the licensed activity:
a) must be maintained in a proper and efficient condition; and
b) must be operated in a proper and efficient manner.

O3 Emergency response

O3.1 The licensee must maintain, and implement as necessary, a current Pollution Incident Response Management Plan (PIRMP) for the premises. The licensee must keep the PIRMP on the premises at all times. The PIRMP must document systems and procedures to deal with all types of incidents (e.g. spills, explosions or fire) that may occur at the premises or that may be associated with activities that occur at the premises and which are likely to cause harm to the environment. The PIRMP must be tested at least annually or following a pollution incident

O4 Processes and management

O4.1 The licensee must ensure that any liquid and/or non liquid waste generated and/or stored at the premises is assessed and classified in accordance with the DECC Waste Classification Guidelines as in force from time to time.

O4.2 The licensee must ensure that waste identified for recycling is stored separately from other waste.

O5 Waste management

O5.1 The licensee must ensure that the handling, labelling, containment, storage and disposal of clinical and sharps wastes are carried out in accordance with the “Waste Management Guidelines for Health Care Facilities”, 1998, issued by the NSW Department of Health.

O5.2 Without limiting to O5.1, the licensee must ensure that:

(a) clinical wastes are stored or contained in a weather proof secure location isolated from any other wastes, and that the storage area is maintained in a condition which presents no threat to the environment;

(b) the storage area for clinical wastes contains all necessary equipment required to clean and disinfect the area in case of spillage;

(c) no radioactive substance as defined by the Radiation Control Act, 1990 is mixe or stored with any of the clinical wastes;

(d) bagged clinical wastes are stored and transported in rigid containers which are leak proof, shatter proof, washable and have securely fitting lids to prevent spills at all times;

(e) bags and containers used for storage and transport of clinical wastes are colour coded and clearly marked with the wording 'Clinical Wastes' along with the biological hazard symbol in accordance with the requirements of the Waste Management Guidelines for Health Care Facilities, 1998, issued by the NSW Department of Health;

(f) containers used for clinical waste which are to be reused must be thoroughly cleansed and disinfected before being reuses; and

(g) where second hand containers are used, all other irrelevant markings shall be obliterated.

O5.3 In addition to O5.1, the licensee must ensure that;

(a) sharps are segregated by the use of enclosed rigid ompenetrable containers that comply with Australian Standard AS/NZS 4031-1992 (non-reusable containers) and 4261-1994 (reusable containers) before disposal in waste bags labelled 'Clinical Wastes' along with the appropriate biohazard symbol;

(b) sharps contaminated by any residual cytotoxic drug are segregated by the use of enclosed rigid impenetrable containers that comply with Australian Standard AS/NZS 4031-1992 (non-reusable containers) and 4261-1994 (reusable containers) before disposal in cytotoxic waste bags labelled 'Cytotoxic Wastes' along with the appropriate biohazard symbol; and

(c) sharps are transported in rigid impenetrable containers which are leakproof, shockproof and have securely fitting lids andthat comply with Australian Standard AS/NZS 3816-1998, Management of Clinical and Related Wastes.

5 Monitoring and Recording Conditions

M1 Monitoring records

M1.1 The results of any monitoring required to be conducted by this licence or a load calculation protocol must be recorded and retained as set out in this condition.

M1.2 All records required to be kept by this licence must be:
a) in a legible form, or in a form that can readily be reduced to a legible form;
b) kept for at least 4 years after the monitoring or event to which they relate took place; and
c) produced in a legible form to any authorised officer of the EPA who asks to see them.

M1.3 The following records must be kept in respect of any samples required to be collected for the purposes of this licence:
a) the date(s) on which the sample was taken;
b) the time(s) at which the sample was collected;
c) the point at which the sample was taken; and
d) the name of the person who collected the sample.

M2 Recording of pollution complaints

M2.1 The licensee must keep a legible record of all complaints made to the licensee or any employee or agent of the licensee in relation to pollution arising from any activity to which this licence applies.

M2.2 The record must include details of the following:
a) the date and time of the complaint;
b) the method by which the complaint was made;
c) any personal details of the complainant which were provided by the complainant or, if no such details were provided, a note to that effect;
d) the nature of the complaint;
e) the action taken by the licensee in relation to the complaint, including any follow-up contact with the complainant; and
f) if no action was taken by the licensee, the reasons why no action was taken.

M2.3 The record of a complaint must be kept for at least 4 years after the complaint was made.

M2.4 The record must be produced to any authorised officer of the EPA who asks to see them.

M3 Telephone complaints line

M3.1 The licensee must operate during its operating hours a telephone complaints line for the purpose of receiving any complaints from members of the public in relation to activities conducted at the premises or by the vehicle or mobile plant, unless otherwise specified in the licence.

M3.2 The licensee must notify the public of the complaints line telephone number and the fact that it is a complaints line so that the impacted community knows how to make a complaint.

M3.3 The preceding two conditions do not apply until 3 months after: the date of the issue of this licence.

6 Reporting Conditions

R1 Annual return documents

R1.1 The licensee must complete and supply to the EPA an Annual Return in the approved form comprising:
a) a Statement of Compliance; and
b) a Monitoring and Complaints Summary.
At the end of each reporting period, the EPA will provide to the licensee a copy of the form that must be completed and returned to the EPA.

R1.2 An Annual Return must be prepared in respect of each reporting period, except as provided below.

Note: The term "reporting period" is defined in the dictionary at the end of this licence. Do not complete the Annual Return until after the end of the reporting period.

R1.3 Where this licence is transferred from the licensee to a new licensee:

a) the transferring licensee must prepare an Annual Return for the period commencing on the first day of the reporting period and ending on the date the application for the transfer of the licence to the new licensee is granted; and
b) the new licensee must prepare an Annual Return for the period commencing on the date the application for the transfer of the licence is granted and ending on the last day of the reporting period.

Note: An application to transfer a licence must be made in the approved form for this purpose.

R1.4 Where this licence is surrendered by the licensee or revoked by the EPA or Minister, the licensee must prepare an Annual Return in respect of the period commencing on the first day of the reporting period and ending on:
a) in relation to the surrender of a licence - the date when notice in writing of approval of the surrender is given; or
b) in relation to the revocation of the licence - the date from which notice revoking the licence operates.

R1.5 The Annual Return for the reporting period must be supplied to the EPA by registered post not later than 60 days after the end of each reporting period or in the case of a transferring licence not later than 60 days after the date the transfer was granted (the 'due date').

R1.6 The licensee must retain a copy of the Annual Return supplied to the EPA for a period of at least 4 years after the Annual Return was due to be supplied to the EPA.

R1.7 Within the Annual Return, the Statement of Compliance must be certified and the Monitoring and Complaints Summary must be signed by:
a) the licence holder; or
b) by a person approved in writing by the EPA to sign on behalf of the licence holder.

R2 Notification of environmental harm

Note: The licensee or its employees must notify all relevant authorities of incidents causing or threatening material harm to the environment immediately after the person becomes aware of the incident in accordance with the requirements of Part 5.7 of the Act.

R2.1 Notifications must be made by telephoning the Environment Line service on 131 555.

R2.2 The licensee must provide written details of the notification to the EPA within 7 days of the date on which the incident occurred.

R3 Written report

R3.1 Where an authorised officer of the EPA suspects on reasonable grounds that:
a) where this licence applies to premises, an event has occurred at the premises; or
b) where this licence applies to vehicles or mobile plant, an event has occurred in connection with the carrying out of the activities authorised by this licence,
and the event has caused, is causing or is likely to cause material harm to the environment (whether the harm occurs on or off premises to which the licence applies), the authorised officer may request a written report of the event.

R3.2 The licensee must make all reasonable inquiries in relation to the event and supply the report to the EPA within such time as may be specified in the request.

R3.3 The request may require a report which includes any or all of the following information:
a) the cause, time and duration of the event;
b) the type, volume and concentration of every pollutant discharged as a result of the event;
c) the name, address and business hours telephone number of employees or agents of the licensee, or a specified class of them, who witnessed the event;
d) the name, address and business hours telephone number of every other person (of whom the licensee is aware) who witnessed the event, unless the licensee has been unable to obtain that information after making reasonable effort;
e) action taken by the licensee in relation to the event, including any follow-up contact with any complainants;
f) details of any measure taken or proposed to be taken to prevent or mitigate against a recurrence of such an event; and
g) any other relevant matters.

R3.4 The EPA may make a written request for further details in relation to any of the above matters if it is not satisfied with the report provided by the licensee. The licensee must provide such further details to the EPA within the time specified in the request.

7 General Conditions

G1 Copy of licence kept at the premises or plant

G1.1 A copy of this licence must be kept at the premises to which the licence applies.

G1.2 The licence must be produced to any authorised officer of the EPA who asks to see it.

G1.3 The licence must be available for inspection by any employee or agent of the licensee working at the premises.

Environment Protection Licence

Licence - 1024

Dictionary

General Dictionary

3DGM [in relation to a concentration limit]	Means the three day geometric mean, which is calculated by multiplying the results of the analysis of three samples collected on consecutive days and then taking the cubed root of that amount. Where one or more of the samples is zero or below the detection limit for the analysis, then 1 or the detection limit respectively should be used in place of those samples
Act	Means the Protection of the Environment Operations Act 1997
activity	Means a scheduled or non-scheduled activity within the meaning of the Protection of the Environment Operations Act 1997
actual load	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
AM	Together with a number, means an ambient air monitoring method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.
AMG	Australian Map Grid
anniversary date	The anniversary date is the anniversary each year of the date of issue of the licence. In the case of a licence continued in force by the Protection of the Environment Operations Act 1997, the date of issue of the licence is the first anniversary of the date of issue or last renewal of the licence following the commencement of the Act.
annual return	Is defined in R1.1
Approved Methods Publication	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
assessable pollutants	Has the same meaning as in the Protection of the Environment Operations (General) Regulation 2009
BOD	Means biochemical oxygen demand
CEM	Together with a number, means a continuous emission monitoring method of that number prescribed by the *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales*.
COD	Means chemical oxygen demand
composite sample	Unless otherwise specifically approved in writing by the EPA, a sample consisting of 24 individual samples collected at hourly intervals and each having an equivalent volume.
cond.	Means conductivity
environment	Has the same meaning as in the Protection of the Environment Operations Act 1997
environment protection legislation	Has the same meaning as in the Protection of the Environment Administration Act 1991
EPA	Means Environment Protection Authority of New South Wales.
fee-based activity classification	Means the numbered short descriptions in Schedule 1 of the Protection of the Environment Operations (General) Regulation 2009.
general solid waste (non-putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environment Operations Act 1997

Environment Protection Licence

Licence - 1024

flow weighted composite sample	Means a sample whose composites are sized in proportion to the flow at each composites time of collection.
general solid waste (putrescible)	Has the same meaning as in Part 3 of Schedule 1 of the Protection of the Environmen t Operations Act 1997
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public authority	Has the same meaning as in the Protection of the Environment Operations Act 1997
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Environment Protection Licence

Licence - 1024

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utilisation area	Means any area shown as a utilisation area on a map submitted with the application for this licence
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waste type	Means liquid, restricted solid waste, general solid waste (putrescible), general solid waste (non-putrescible), special waste or hazardous waste

Mr Tim Gilbert

Environment Protection Authority

(By Delegation)

Date of this edition: 19-June-2000

Environment Protection Licence

Licence - 1024

End Notes

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7	Licence varied by correction to DECCW Region data record, issued on 13-Jul-2010, which came into effect on 13-Jul-2010.
8	Licence varied by correction to scheduled activity name, issued on 22-Dec-2010, which came into effect on 22-Dec-2010.
9	Licence varied by notice 1529464 issued on 01-Jun-2015
10	Licence transferred through application 1533537 approved on 02-Sep-2015 , which came into effect on 01-Sep-2015

Number	Name	Location	Type	Status	Date
1607905	GLAXOSMITHKLINE AUSTRALIA PTY LTD	82 Hughes Avenue, Ermington NSW 2115	s.80 Surrender of a Licence	Pending	1-Apr-21
1021300	GLAXOSMITHKLINE AUSTRALIA PTY LTD	82 Hughes Avenue, Ermington NSW 2115	s.58 Licence Variation	Issued	4-Nov-02
1072214	GLAXOSMITHKLINE AUSTRALIA PTY LTD	82 Hughes Avenue, Ermington NSW 2115	s.58 Licence Variation	Issued	17-Oct-07
1104803	GLAXOSMITHKLINE AUSTRALIA PTY LTD	82 Hughes Avenue, Ermington NSW 2115	s.58 Licence Variation	Issued	10-Nov-09
1529464	GLAXOSMITHKLINE AUSTRALIA PTY LTD	82 Hughes Avenue, Ermington NSW 2115	s.58 Licence Variation	Issued	1-Jun-15
1024	GLAXOSMITHKLINE AUSTRALIA PTY LTD	82 Hughes Avenue, Ermington NSW 2115	POEO Licence	Issued	19-Jun-00
1534833	GLAXOSMITHKLINE AUSTRALIA PTY LTD	82 Hughes Avenue, Ermington NSW 2115	s.58 Licence Variation	Issued	15-Dec-15

Appendix F – Calibration Certificates

EI Australia
Suite 6.01, 55 Miller Street
PYRMONT, NSW, 2009

ABN 42 909 129 957
E service@eiaustralia.com.au
W www.eiaustralia.com.au
T 02 9516 0722

CALIBRATION CERTIFICATE FOR PHOTO IONISATION DETECTOR

Instrument: Mini RAE 3000

Serial Number: 592-906667 - EI **PID02** ☒ **OR** 592-901345 - EI **PID03** ☐

Instrument Conditions: Good

Calibration gas species: Isobutylene.

Calibration gas concentration: 100 ppm

Gas bottle number: Lot:985570 Cyl:93

This PID has been calibrated to Isobutylene gas with the span concentration displayed as 1000 ppm at 100 ppm span setting (allowable range +/-10ppm from span setting).

The PID is initially zero calibrated in fresh air.

Remaining gas in bottle: 10 psi (if reading is <250 psi, notify Equipment Manager to arrange new gas bottle order)

The above detector was calibrated in accordance with manufacturer's specifications.

Signed: [signature]

Date: 2024/21

Time: 10:30 am

EI Australia
Suite 6.01, 55 Miller Street
PYRMONT, NSW, 2009

ABN 42 909 129 957
E service@eiaustralia.com.au
W www.eiaustralia.com.au
T 02 9516 0722

CALIBRATION CERTIFICATE FOR PHOTO IONISATION DETECTOR

Instrument: Mini RAE 3000

Serial Number: 592-906667 - EI **PID02** ☒ **OR** 592-901345 - EI **PID03** ☐

Instrument Conditions: Good

Calibration gas species: Isobutylene.

Calibration gas concentration: 100 ppm

Gas bottle number: lot: 935570 cyl: 93

This PID has been calibrated to Isobutylene gas with the span concentration displayed as 100.0 ppm at 100 ppm span setting (allowable range +/-10ppm from span setting).

The PID is initially zero calibrated in fresh air.

Remaining gas in bottle: 60 psi (if reading is <250 psi, notify Equipment Manager to arrange new gas bottle order)

The above detector was calibrated in accordance with manufacturer's specifications.

Signed: [signature]

Date: 21/4/21

Time: 7:30.

EI Australia
Suite 6.01, 55 Miller Street
PYRMONT, NSW, 2009

ABN 42 909 129 957
E service@eiaustralia.com.au
W www.eiaustralia.com.au
T 02 9516 0722

CALIBRATION CERTIFICATE FOR PHOTO IONISATION DETECTOR

Instrument: Mini RAE 3000

Serial Number: 592-906667 - EI **PID02** ☐ **OR** 592-901345 - EI **PID03** ☐

Instrument Conditions: Cleaned

Calibration gas species: Isobutylene.

Calibration gas concentration: 100 ppm

Gas bottle number: Lot: 935570 Cyl: 93

This PID has been calibrated to Isobutylene gas with the span concentration displayed as 100.1 ppm at 100 ppm span setting (allowable range +/-10ppm from span setting).

The PID is initially zero calibrated in fresh air.

Remaining gas in bottle: 10 psi (if reading is <250 psi, notify Equipment Manager to arrange new gas bottle order)

The above detector was calibrated in accordance with manufacturer's specifications.

Signed: [signature]

Date: 22/4/21

Time: 8:15

Appendix G - Borehole Logs

BOREHOLE: 82-BH101M

Project	Detailed Site Investigation			Sheet	1 OF 1
Location	82 Hughes Avenue, Ermington and 30 & 32 Waratah Street & 112 Wharf Road, Melrose Park			Date Started	20/4/21
Position	Refer to Figure A.2a			Date Completed	20/4/21
Job No.	E25077.E02	Contractor	HartGeo Pty Ltd	Logged	AS
Client	Holdmark NSW Pty Ltd	Drill Rig	Ute mounted drill rig	Checked	AI
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	PIEZOMETER DETAILS
AD/T	-	GWNE	0		82-BH101M_0.4-0.5 PID=0.4ppm			-	FILL: Sandy CLAY; medium plasticity, orange brown, with fine to coarse grained sand, no odour.	D - M	-	Gatic Cover; Cuttings; uPVC 50 mm Casing
			1	1.00	82-BH101M_0.9-1.0 PID = 0.3 ppm			-	FILL: Silty Clayey SAND; fine to coarse grained, dark brown, no odour.	M		Bentonite
					82-BH101M_1.4-1.5 PID = 0.2 ppm							
				1.70				-	SANDSTONE; extremely weathered, orange, no odour.	D		uPVC 50 mm Screen; Sand
			2	2.00					Hole Terminated at 2.00 mBGL; Refusal on sandstone bedrock			
			3									
			4									
			5									
			6									
			7									
			8									
			9									
			10									

PIEZOMETER DETAILS: ID 82-BH101M; Static Water Level

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

BOREHOLE: 82-BH102M

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	82 Hughes Avenue, Ermington and 30 & 32 Waratah Street & 112 Wharf Road, Melrose Park			Date Started	20/4/21
Position	Refer to Figure A.2a			Date Completed	20/4/21
Job No.	E25077.E02	Contractor	HartGeo Pty Ltd	Logged	AS
Client	Holdmark NSW Pty Ltd	Drill Rig	Ute mounted drill rig	Checked	AI
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	PIEZOMETER DETAILS
AD/T	-	▽	0					-	FILL: Gravelly SAND; fine to coarse grained, dark brown, with fine to coarse grained and sub-angular to angular gravels, with a trace of brick pieces ,no odour.			ID: 82-BH102M; Static Water Level
				0.60	82-BH102M_0.4-0.5 QD1/QT1 PID = 0.3 ppm			-	FILL: Gravelly SAND; fine to coarse grained, with fine to coarse grained and sub-angular to angular gravels, no odour.			
			1		82-BH102M_0.9-1.0 PID = 0.7 ppm					D		
				1.30					From 1.3m, dark brown.			
					82-BH102M_1.4-1.5 PID = 1.4 ppm							
			2		82-BH102M_1.9-2.0 PID = 0.6 ppm							
				2.30				-	FILL: Gravelly Sandy CLAY; medium plasticity, dark brown / brown, with fine to coarse grained sand, with fine to coarse grained and sub-angular to angular gravels, no odour		-	
					82-BH102M_2.4-2.5 PID = 0.4 ppm							
			3		82-BH102M_2.9-3.0 PID = 0.4 ppm					D - M		
				3.60	82-BH102M_3.5-3.6 PID = 0.6 ppm			-	FILL: Silty CLAY; medium plasticity, red / orange mottled brown, with a trace of fine to coarse grained sandstone gravels, no odour.			
			4		82-BH102M_3.9-4.0 PID = 0.6 ppm							
				4.20				-	SANDSTONE; extremely weathered, orange, no odour.			
					82-BH102M_4.4-4.5 PID = 1.1 ppm							
			5		82-BH102M_4.9-5.0 PID = 2.3 ppm					D		
					82-BH102M_5.4-5.5 PID = 1 ppm							
				5.80					Hole Terminated at 5.80 mBGL; Refusal on sandstone bedrock			
			6									
			7									
			8									
			9									
			10									

PIEZOMETER DETAILS: Gatic Cover; Cuttings; uPVC 50 mm Casing; Bentonite; uPVC 50 mm Screen; Sand

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

BOREHOLE: 30-BH101

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	82 Hughes Avenue, Ermington and 30 & 32 Waratah Street & 112 Wharf Road, Melrose Park			Date Started	20/4/21
Position	Refer to Figure A.2b			Date Completed	20/4/21
Job No.	E25077.E02	Contractor	HartGeo Pty Ltd	Logged	AS
Client	Holdmark NSW Pty Ltd	Drill Rig	Ute mounted drill rig	Checked	AI
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0	0.15				-	CONCRETE: 150mm thickness.	-		CONCRETE HARDSTAND
				0.40	30-BH101_0.2-0.3 PID = 0.6 ppm			-	FILL: Silty SAND; fine to coarse grained, red, no odour.	D - M		FILL
				0.80	30-BH101_0.5-0.6 PID = 0.4 ppm			-	FILL: Gravelly SAND; fine to coarse grained, light orange, with fine to coarse grained and sub-angular to angular gravels, no odour.			
			1	1.10	30-BH101_0.9-1.0 PID = 0.3 ppm			-	FILL: Crushed SANDSTONE; white / grey, with white / grey sandy silt, no odour.			
				1.30				-	VOID: 200mm thickness.			-
					30-BH101_1.4-1.5 PID = 0.7 ppm			-	FILL; SANDSTONE; extremely weathered, orange, no odour.			FILL
			2	2.30						D		
								-	FILL: Gravelly SAND; fine to coarse grained, light orange, with fine to coarse grained and sub-angular to angular gravels, no odour.			
			3		30-BH101_2.9-3.0 PID = 0.4 ppm						-	
			4	4.00				-	FILL: Sandy Silty Gravelly CLAY; medium plasticity, dark brown / black mottled orange, with fine to coarse grained sand, with fine to coarse grained and sub-rounded gravels, with organic odour.			
				4.50	30-BH101_4.4-4.5 PID = 1 ppm			CI	Sandy Silty CLAY: medium plasticity, dark brown, with fine to coarse grained sand, with organic odour.	W		RESIDUAL SOIL
			5	5.00				CL	Silty CLAY; low plasticity, stiff, grey mottled orange, no odour.			
					30-BH101_5.4-5.5 PID = 0.8 ppm					D - M		
			6									
			7	7.00					Hole Terminated at 7.00 mBGL; Target depth reached.			
			8									
			9									
			10									

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

BOREHOLE: 30-BH102M

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	82 Hughes Avenue, Ermington and 30 & 32 Waratah Street & 112 Wharf Road, Melrose Park			Date Started	20/4/21
Position	Refer to Figure A.2b			Date Completed	20/4/21
Job No.	E25077.E02	Contractor	HartGeo Pty Ltd	Logged	AS
Client	Holdmark NSW Pty Ltd	Drill Rig	Ute mounted drill rig	Checked	AI
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	PIEZOMETER DETAILS
AD/T	-	GWNE	0	0.10				-	CONCRETE: 100mm thickness.	-	-	ID: 30-BH102M; Static Water Level
				0.40	30-BH102M_0.2-0.3 PID = 0.2 ppm			-	FILL: SAND; fine to coarse grained, yellow, no odour.	D		Gatic Cover; Cuttings
			1		30-BH102M_0.5-0.6 PID = 0.1 ppm 30-BH102M_1.2-1.3 PID = 0.2 ppm			-	FILL: Gravelly CLAY; medium plasticity, red / brown, with fine grained and sub-angular to angular gravels, no odour.	D - M		Bentonite; uPVC 50 mm Casing
				1.60				-	FILL: Gravelly SAND; fine to coarse grained, brown, with fine grained gravels, with a trace of brick fragments, no odour.	D	-	
			2		30-BH102M_2.0-2.1 PID = 1 ppm 30-BH102M_2.4-2.5 PID = 0.4 ppm					W		
			3		30-BH102M_3.5-3.6 PID = 1.1 ppm					M - W		uPVC 50 mm Screen; Sand
				3.80				-	FILL: Crushed SANDSTONE; orange, with fine to coarse grained sand, with fine to coarse and sub-rounded gravels, no odour.			
			4		30-BH102M_4.0-4.1 PID = 0.5 ppm					D - M		
				4.55					Hole Terminated at 4.55 mBGL; Refusal on sandstone.			
			5									
			6									
			7									
			8									
			9									
			10									

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

BOREHOLE: 30-BH103

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	82 Hughes Avenue, Ermington and 30 & 32 Waratah Street & 112 Wharf Road, Melrose Park			Date Started	20/4/21
Position	Refer to Figure A.2b			Date Completed	20/4/21
Job No.	E25077.E02	Contractor	HartGeo Pty Ltd	Logged	AS
Client	Holdmark NSW Pty Ltd	Drill Rig	Ute mounted drill rig	Checked	AI
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
			0	0.15				-	CONCRETE: 150mm thickness.	-		CONCRETE HARDSTAND
				0.40				-	FILL: SAND; fine to coarse grained, yellow, no odour.	D		FILL
AD/T	-	GWNE			30-BH103_0.3-0.4 PID = 0.2 ppm			-	FILL: Gravelly CLAY; medium plasticity, black mottled brown, with fine grained and sub-angular to angular gravels, no odour.	D - M	-	
			1		30-BH103_0.9-1.0 PID = 0.2 ppm							
				1.10				CI	Silty CLAY; medium plasticity, light orange mottled red, stiff, no odour.			RESIDUAL SOIL
				1.50	30-BH103_1.3-1.4 PID = 0.1 ppm				Hole Terminated at 1.50 mBGL; Target depth reached.			
			2									
			3									
			4									
			5									
			6									
			7									
			8									
			9									
			10									

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

BOREHOLE: 30-BH104

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	82 Hughes Avenue, Ermington and 30 & 32 Waratah Street & 112 Wharf Road, Melrose Park			Date Started	20/4/21
Position	Refer to Figure A.2b			Date Completed	20/4/21
Job No.	E25077.E02	Contractor	HartGeo Pty Ltd	Logged	AS
Client	Holdmark NSW Pty Ltd	Drill Rig	Ute mounted drill rig	Checked	AI
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0					-	FILL: Gravelly SAND; fine to coarse grained, dark grey / brown and grey white, no odour.		-	FILL
				0.60	30-BH104_0.4-0.5 PID = 0.3 ppm			-	FILL: Gravelly SAND; fine to coarse grained, brown, with fine grained gravels, with a trace of brick fragments, no odour.	D		
			1		30-BH104_0.9-1.0 PID = 0.2 ppm							
				1.70				-	FILL: Gravelly Sandy CLAY; medium plasticity, brown, with fine to coarse grained sand, with fine grained gravels, no odour.	D - M		
			2		30-BH104_2.0-2.1 PID = 0.3 ppm							
				2.60	30-BH104_2.7-2.8 PID = 0.2 ppm			-	FILL: Gravelly SAND; fine to coarse grained, brown, with fine grained gravels, with a trace of brick fragments, no odour.	D		
			3	3.30				-	FILL: Silty SAND; fine to coarse grained, orange red, with a trace of siltstone, no odour.	D - M		
			4		30-BH104_4.2-4.3 PID = 0.3 ppm							
				4.40					From 4.4m, brown.	D		
			5	5.10	30-BH104_4.9-5.0 PID = 0.6 ppm				Hole Terminated at 5.10 mBGL; Refusal on bedrock.			
			6									
			7									
			8									
			9									
			10									

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

BOREHOLE: 30-BH105

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	82 Hughes Avenue, Ermington and 30 & 32 Waratah Street & 112 Wharf Road, Melrose Park			Date Started	20/4/21
Position	Refer to Figure A.2b			Date Completed	20/4/21
Job No.	E25077.E02	Contractor	HartGeo Pty Ltd	Logged	AS
Client	Holdmark NSW Pty Ltd	Drill Rig	Ute mounted drill rig	Checked	AI
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0						FILL: Gravelly SAND; fine to medium grained, dark grey / brown and grey white, with fine grained gravels, no odour.	D	-	FILL
			1		30-BH105_0.4-0.5 PID = 0.3 ppm							
				1.30	30-BH105_1.2-1.3 PID = 0.2 ppm			-	FILL: Crushed SANDSTONE; orange, with fine to coarse grained sand, with fine to coarse and sub-rounded gravels, no odour.			
				1.70	30-BH105_1.4-1.5 PID = 0.1 ppm				Hole Terminated at 1.70 mBGL; Refusal too hard, possible bedrock			
			2									
			3									
			4									
			5									
			6									
			7									
			8									
			9									
			10									

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

BOREHOLE: 30-BH106M

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	82 Hughes Avenue, Ermington and 30 & 32 Waratah Street & 112 Wharf Road, Melrose Park			Date Started	21/4/21
Position	Refer to Figure A.2b			Date Completed	21/4/21
Job No.	E25077.E02	Contractor	HartGeo Pty Ltd	Logged	AS
Client	Holdmark NSW Pty Ltd	Drill Rig	Ute mounted drill rig	Checked	AI
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	PIEZOMETER DETAILS
AD/T	-	▽	0					-	FILL: Gravelly SAND; fine to medium grained, dark grey / brown and grey white, with fine grained gravels, with a trace of metal pieces, no odour.			ID: 30-BH106M; Static Water Level: 30-BH106M; Gatic Cover; Cuttings
					30-BH106M_0.3-0.4 PID = 0.4 ppm							
			1	1.10								Bentonite
					30-BH106M_1.1-1.2 PID = 1 ppm				From 1.1m, with a trace of crushed sandstone.			
				1.30				-	FILL: Crushed SANDSTONE; orange, with fine to coarse grained sand, with fine to coarse and sub-rounded gravels, no odour.			uPVC 50 mm Casing
				1.60				-	FILL: Gravelly SAND; fine to medium grained, dark grey / brown and grey white, with fine grained gravels, with a trace of metal fragments, no odour.	D		
			2		30-BH106M_1.9-2.0 PID = 0.3 ppm							
					30-BH106M_2.7-2.8 PID = 0.2 ppm							uPVC 50 mm Screen
			3	3.40								Sand
					30-BH106M_3.4-3.5 PID = 0.5 ppm			-	FILL: Sandy Gravelly CLAY; medium plasticity, dark grey, with fine to coarse grained and sub-angular gravels, no odour.	W		
			4		30-BH106M_4.4-4.5 PID = 0.1 ppm							
			5							W		
					30-BH106M_5.4-5.5 PID = 0.1 ppm							Cuttings
			6	6.40	30-BH106M_6.3-6.4 PID = 0.2 ppm				Hole Terminated at 6.40 mBGL; Refusal on sandy gravelly clay.			
			7									
			8									
			9									
			10									

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

BOREHOLE: 30-BH107

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	82 Hughes Avenue, Ermington and 30 & 32 Waratah Street & 112 Wharf Road, Melrose Park			Date Started	21/4/21
Position	Refer to Figure A.2b			Date Completed	21/4/21
Job No.	E25077.E02	Contractor	HartGeo Pty Ltd	Logged	AS
Client	Holdmark NSW Pty Ltd	Drill Rig	Ute mounted drill rig	Checked	AI
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0	0.40	30-BH107_0.3-0.4 PID = 0.4 ppm			-	FILL: Gravelly SAND; fine to coarse grained, dark grey and white mottled orange, with fine to coarse grained and sub-angular to angular gravels, no odour.	D	-	FILL
								-	FILL: Sandy Gravelly CLAY; medium plasticity, brown, with fine to coarse grained sand, with fine to coarse grained and sub-angular gravels, no odour.			
			1	1.10	30-BH107_0.9-1.0 PID = 0.3 ppm			-	FILL: Gravelly CLAY; medium plasticity, grey, with fine to medium grained and sub-rounded gravels, no odour.	D - M		
					30-BH107_1.3-1.4 PID = 0.4 ppm							
			2	2.20				-	FILL: Sandy Gravelly CLAY; medium plasticity, brown, with fine to coarse grained sand, with fine to coarse grained and sub-angular gravels, with sandstone boulders, no odour.		-	
					30-BH107_2.3-2.4 PID = 0.2 ppm							
				2.60				-	FILL: Sandy Gravelly CLAY; medium plasticity, brown, with fine to coarse grained sand, with fine to coarse grained and sub-angular gravels, no odour.			
			3	3.20	30-BH107_2.9-3.0 PID = 0.2 ppm			-	FILL: Silty SAND; fine to coarse grained, orange red, with a trace of siltstone, no odour.			
					30-BH107_3.8-3.9 PID = 0.2 ppm					D		
			4	4.50					Hole Terminated at 4.50 mBGL; Refusal on bedrock.			
			5									
			6									
			7									
			8									
			9									
			10									

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

BOREHOLE: 30-BH108

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	82 Hughes Avenue, Ermington and 30 & 32 Waratah Street & 112 Wharf Road, Melrose Park			Date Started	21/4/21
Position	Refer to Figure A.2b			Date Completed	21/4/21
Job No.	E25077.E02	Contractor	HartGeo Pty Ltd	Logged	AS
Client	Holdmark NSW Pty Ltd	Drill Rig	Ute mounted drill rig	Checked	AI
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		30-BH108_0.2-0.3 PID = 0.3 ppm 30-BH108_0.4-0.5 PID = 0.2 ppm			-	FILL: Gravelly SAND; fine to coarse grained, red/brown, with fine grained gravels, with a trace of brown clay, no odour.	D D - M	-	FILL
			1	*1.10*	30-BH108_1.2-1.3 PID = 0.1 ppm			-	FILL: Gravelly CLAY; medium plasticity, grey, with fine to medium grained and sub-rounded gravels, no odour.	M		
			2		30-BH108_1.8-1.9 PID = 0.4 ppm					D - M M	-	
			3	*3.20*	30-BH108_2.7-2.8 PID = 0.2 ppm							
		▽			30-BH108_3.4-3.5 PID = 0.2 ppm			-	SANDSTONE; extremely weathered, orange, no odour.	D		WEATHERED BEDROCK
				3.70					Hole Terminated at 3.70 mBGL; Target depth reached.			
			4									
			5									
			6									
			7									
			8									
			9									
			10									

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

BOREHOLE: 30-BH109

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	82 Hughes Avenue, Ermington and 30 & 32 Waratah Street & 112 Wharf Road, Melrose Park			Date Started	21/4/21
Position	Refer to Figure A.2b			Date Completed	21/4/21
Job No.	E25077.E02	Contractor	HartGeo Pty Ltd	Logged	AS
Client	Holdmark NSW Pty Ltd	Drill Rig	Ute mounted drill rig	Checked	AI
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		30-BH109_0.3-0.4 PID = 0.4 ppm 30-BH109_0.5-0.6 PID = 0.2 ppm			-	FILL: Gravelly SAND; fine to coarse grained, red/brown, with fine grained gravels, with a trace of brown clay, no odour.	D - M	-	FILL
			1		30-BH109_1.5-1.6 PID = 0.1 ppm							
			2							M		
			3		30-BH109_2.6-2.7 PID = 0.1 ppm							
					30-BH109_3.5-3.6 PID = 0.2 ppm							
				3.80								
			4	4.10	30-BH109_4.0-4.1 PID = 0.1 ppm			CI	Sandy Silty CLAY: medium plasticity, dark brown, with fine to coarse grained sand, with organic odour.	W		RESIDUAL SOIL
									Hole Terminated at 4.10 mBGL; Target depth reached.			
			5									
			6									
			7									
			8									
			9									
			10									

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

BOREHOLE: 30-BH110M

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	82 Hughes Avenue, Ermington and 30 & 32 Waratah Street & 112 Wharf Road, Melrose Park			Date Started	21/4/21
Position	Refer to Figure A.2b			Date Completed	21/4/21
Job No.	E25077.E02	Contractor	HartGeo Pty Ltd	Logged	AS
Client	Holdmark NSW Pty Ltd	Drill Rig	Ute mounted drill rig	Checked	AI
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	PIEZOMETER DETAILS
AD/T	-	▽	0	0.30	30-BH110M_0.2-0.3			-	FILL: Gravelly SAND; fine to coarse grained, red, with fine grained and rounded gravels, no odour.	D	-	ID: 30-BH110M; Static Water Level: 30-BH110M; Gatic Cover
					PID = 0.4 ppm			-	FILL: Gravelly SAND; fine to coarse grained, red/brown, with fine grained gravels, with a trace of brown clay, no odour.			
					30-BH110M_0.7-0.8 PID = 0.4 ppm					D - M		
			1	1.00				-	FILL: CLAY; medium plasticity, orange mottled grey, no odour.			
				1.50	30-BH110M_1.4-1.5 PID = 0.2 ppm			-	FILL: Gravelly SAND; fine to coarse grained, red/brown mottled grey, with fine grained gravels, with a trace of brown clay, no odour.			Cuttings; uPVC 50 mm Casing
			2		30-BH110M_2.2-2.3 PID = 0.1 ppm					M		
			3	3.00	30-BH110M_2.9-3.0 PID = 0.3 ppm				From 3.0m, with a trace of brick fragments.			
					30-BH110M_3.4-3.5 PID = 4 ppm					M - W		Bentonite
			4	4.00	30-BH110M_4.1-4.2 PID = 0.5 ppm			S	Peaty Clayey SAND; fine grained, dark grey, with sulfur odour.			
			5	5.30					From 5.3m, with a trace of shell fragments.	W		
			6	6.80								Sand; uPVC 50 mm Screen
			7		30-BH110M_7.0-7.1 PID = 0.2 ppm			CH	CLAY; high plasticity, grey mottled orange, with shell fragments, with sulfur odour.	M		
				7.50					Hole Terminated at 7.50 mBGL; Target depth reached.			
			8									
			9									
			10									

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

BOREHOLE: 30-BH111M

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	82 Hughes Avenue, Ermington and 30 & 32 Waratah Street & 112 Wharf Road, Melrose Park			Date Started	21/4/21
Position	Refer to Figure A.2b			Date Completed	21/4/21
Job No.	E25077.E02	Contractor	HartGeo Pty Ltd	Logged	AS
Client	Holdmark NSW Pty Ltd	Drill Rig	Ute mounted drill rig	Checked	AI
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	PIEZOMETER DETAILS
AD/T	-	▽	0	0.30	30-BH111M_0.2-0.3 PID = 0.2 ppm			-	FILL: Gravelly SAND; fine to coarse grained, red, with fine grained gravels, with a trace of brown clay, no odour.	D	-	ID: 30-BH111M; Static Water Level: 30-BH111M; Gatic Cover
					30-BH111M_0.5-0.6 PID = 0.4 ppm				From 0.3m, brown.			
			1		30-BH111M_1.4-1.5 PID = 0.5 ppm							Cuttings
			2		30-BH111M_2.2-2.3 PID = 0.4 ppm					D - M		
				2.70					From 2.7m, with brick fragments.			
			3		30-BH111M_2.9-3.0 PID = 0.2 ppm							uPVC 50 mm Casing
					30-BH111M_3.5-3.6 PID = 0.4 ppm							Bentonite
			4	4.20				S	Peaty Clayey SAND; fine grained, black, with sulfur odour.			
			5		30-BH111M_4.8-4.9 PID = 0.2 ppm					W		
			6									uPVC 50 mm Screen Sand
				6.80				CH	CLAY; high plasticity, grey mottled orange, with shell fragments, with sulfur odour.			
			7		30-BH111M_6.9-7.0 PID = 0.2 ppm					M - W		
				7.60					Hole Terminated at 7.60 mBGL; Target depth reached.			
			8									
			9									
			10									

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

BOREHOLE: 30-BH112

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	82 Hughes Avenue, Ermington and 30 & 32 Waratah Street & 112 Wharf Road, Melrose Park			Date Started	21/4/21
Position	Refer to Figure A.2b			Date Completed	21/4/21
Job No.	E25077.E02	Contractor	HartGeo Pty Ltd	Logged	AS
Client	Holdmark NSW Pty Ltd	Drill Rig	Hand Auger	Checked	AI
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
HA	-	GWNE	0	0.30	30-BH112_0.2-0.3 PID = 0.5 ppm			-	FILL: Gravelly SAND; fine to coarse grained, light orange, with sub-angular to angular gravels, no odour.	D	-	FILL
									Hole Terminated at 0.30 mBGL; Refusal on coarse sandstone gravels.			
			1									
			2									
			3									
			4									
			5									
			6									
			7									
			8									
			9									
			10									

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

BOREHOLE: 32-BH101

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	82 Hughes Avenue, Ermington and 30 & 32 Waratah Street & 112 Wharf Road, Melrose Park			Date Started	21/4/21
Position	Refer to Figure A.2b			Date Completed	21/4/21
Job No.	E25077.E02	Contractor	HartGeo Pty Ltd	Logged	AS
Client	Holdmark NSW Pty Ltd	Drill Rig	Ute mounted drill rig	Checked	AI
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0	0.20	32-BH101_0.1-0.2 PID = 0.6 ppm			-	FILL: SAND; fine to coarse grained, brown, with a trace of red clay, no odour.	D		FILL
				0.60	32-BH101_0.5-0.6 PID = 0.7 ppm			CI	Sandy Silty CLAY; medium plasticity, grey mottled orange, with fine grained sand, no odour.	D - M	-	RESIDUAL SOIL
			1						Hole Terminated at 0.60 mBGL; Target depth reached.			
			2									
			3									
			4									
			5									
			6									
			7									
			8									
			9									
			10									

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

BOREHOLE: 32-BH102

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	82 Hughes Avenue, Ermington and 30 & 32 Waratah Street & 112 Wharf Road, Melrose Park			Date Started	22/4/21
Position	Refer to Figure A.2b			Date Completed	22/4/21
Job No.	E25077.E02	Contractor	HartGeo Pty Ltd	Logged	AS
Client	Holdmark NSW Pty Ltd	Drill Rig	Ute mounted drill rig	Checked	AI
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		32-BH102_0.2-0.3 PID = 0.6 ppm			-	FILL: Sandy Gravelly CLAY; low to medium plasticity, orange brown, with fine to coarse grained sand, with fine to coarse and sub-angular to angular gravels, no odour.	D - M	-	FILL
			1	0.90	32-BH102_0.9-1.0 PID = 0.6 ppm			S	Gravelly SAND (weathered sandstone); fine to coarse grained, light orange / grey, with sandstone fragments, with fine to coarse grained and sub-rounded gravels, no odour.	D		WEATHERED BEDROCK
				1.40					Hole Terminated at 1.40 mBGL; Target depth reached.			
			2									
			3									
			4									
			5									
			6									
			7									
			8									
			9									
			10									

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

BOREHOLE: 32-BH103

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	82 Hughes Avenue, Ermington and 30 & 32 Waratah Street & 112 Wharf Road, Melrose Park			Date Started	22/4/21
Position	Refer to Figure A.2b			Date Completed	22/4/21
Job No.	E25077.E02	Contractor	HartGeo Pty Ltd	Logged	AS
Client	Holdmark NSW Pty Ltd	Drill Rig	Ute mounted drill rig	Checked	AI
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0	0.40	32-BH103_0.3-0.4 PID = 0.9 ppm			-	FILL: Gravelly SAND; fine to coarse grained, brown, with fine grained and sub-angular gravels, with a trace of medium plasticity clay, no odour.	D	-	FILL
								-	FILL: Sandy Gravelly CLAY; low to medium plasticity, orange brown, with fine to coarse grained sand, with fine to coarse and sub-angular to angular gravels, no odour.	D - M		
			1	1.00	32-BH103_0.9-1.0 PID = 1.2 ppm			CI-CH	Sandy CLAY; medium to high plasticity, dark grey, with fine grained sand, no odour.	M		RESIDUAL SOIL
				1.50	32-BH103_1.4-1.5 PID = 0.6 ppm				Hole Terminated at 1.50 mBGL; Target depth reached.			
			2									
			3									
			4									
			5									
			6									
			7									
			8									
			9									
			10									

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

BOREHOLE: 32-BH104M

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	82 Hughes Avenue, Ermington and 30 & 32 Waratah Street & 112 Wharf Road, Melrose Park			Date Started	22/4/21
Position	Refer to Figure A.2b			Date Completed	22/4/21
Job No.	E25077.E02	Contractor	HartGeo Pty Ltd	Logged	AS
Client	Holdmark NSW Pty Ltd	Drill Rig	Ute mounted drill rig	Checked	AI
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	PIEZOMETER DETAILS
AD/T	-	GWNE	0		32-BH104M_0.2-0.3 PID = 0.8 ppm			-	FILL: Silty Sandy CLAY; low to medium plasticity, brown, with fine to medium grained sand, no odour.	D - M		ID Static Water Level 32-BH104M Gatic Cover Cuttings
				0.70				S	Gravelly SAND (weathered sandstone); fine to coarse grained, light orange / grey, with fine to coarse grained and sub-rounded gravels, no odour.	D	-	uPVC 50 mm Casing Bentonite Sand uPVC 50 mm Screen
			1	1.60	32-BH104M_1.0-1.1 PID = 0.2 ppm							
									Hole Terminated at 1.60 mBGL; Refusal on sandstone bedrock.			
			2									
			3									
			4									
			5									
			6									
			7									
			8									
			9									
			10									

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

BOREHOLE: 32-BH105

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	82 Hughes Avenue, Ermington and 30 & 32 Waratah Street & 112 Wharf Road, Melrose Park			Date Started	22/4/21
Position	Refer to Figure A.2b			Date Completed	22/4/21
Job No.	E25077.E02	Contractor	HartGeo Pty Ltd	Logged	AS
Client	Holdmark NSW Pty Ltd	Drill Rig	Ute mounted drill rig	Checked	AI
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0	0.30	32-BH105_0.2-0.3 QD2/QT2 PID = 0.3 ppm			-	FILL: Gravelly SAND; fine to coarse grained, brown, with fine grained and sub-angular gravels, with a trace of medium plasticity clay, no odour.	D		FILL
					32-BH105_0.5-0.6 PID = 0.3 ppm			CL-CI	Silty CLAY; low to medium plasticity, grey mottled orange, no odour.	D - M		RESIDUAL SOIL
			1	1.00	32-BH105_1.2-1.3 PID = 0.1 ppm			S	Gravelly SAND (weathered sandstone); fine to coarse grained, light orange / grey, with fine to coarse grained and sub-rounded gravels, no odour.	D	-	WEATHERED BEDROCK
			2	2.00					Hole Terminated at 2.00 mBGL; Refusal on bedrock sandstone.			
			3									
			4									
			5									
			6									
			7									
			8									
			9									
			10									

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

BOREHOLE: 32-BH106

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	82 Hughes Avenue, Ermington and 30 & 32 Waratah Street & 112 Wharf Road, Melrose Park			Date Started	22/4/21
Position	Refer to Figure A.2b			Date Completed	22/4/21
Job No.	E25077.E02	Contractor	HartGeo Pty Ltd	Logged	AS
Client	Holdmark NSW Pty Ltd	Drill Rig	Ute mounted drill rig	Checked	AI
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		32-BH106_0.2-0.3 PID = 0.4 ppm			-	FILL: Sandy Gravelly CLAY; low to medium plasticity, orange brown, with fine to coarse grained sand, with fine to coarse and sub-angular to angular gravels, no odour.	D - M	-	FILL
			1		32-BH106_0.9-1.0 PID = 1 ppm							
				1.20				-	FILL: Sandy CLAY; high plasticity, brown, with fine to medium grained sand, with a trace of fine to coarse grained gravels, no odour.			
					32-BH106_1.4-1.5 PID = 0.7 ppm					M		
				1.70				CI-CH	Sandy CLAY; medium to high plasticity, dark grey, with fine grained sand, no odour.			RESIDUAL SOIL
			2	*2.00*	32-BH106_1.9-2.0 PID = 0.4 ppm				Hole Terminated at 2.00 mBGL; Target depth reached.			
			3									
			4									
			5									
			6									
			7									
			8									
			9									
			10									

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

BOREHOLE: 32-BH107M

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	82 Hughes Avenue, Ermington and 30 & 32 Waratah Street & 112 Wharf Road, Melrose Park			Date Started	22/4/21
Position	Refer to Figure A.2b			Date Completed	22/4/21
Job No.	E25077.E02	Contractor	HartGeo Pty Ltd	Logged	AS Date:
Client	Holdmark NSW Pty Ltd	Drill Rig	Ute mounted drill rig	Checked	AI Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	PIEZOMETER DETAILS ID / Static Water Level
AD/T	-	GWNE	0		32-BH107M_0.2-0.3 PID = 0.5 ppm			-	FILL: Gravelly SAND; fine to coarse grained, brown, with fine grained and sub-angular gravels, with a trace of medium plasticity clay, no odour.	D		32-BH107M
				0.80								Gatic Cover Cuttings
			1		32-BH107M_1.0-1.1 PID = 0.4 ppm			CL-CI	Silty CLAY; low to medium plasticity, grey mottled orange, no odour.	D - M	-	Bentonite uPVC 50 mm Casing
				1.70								uPVC 50 mm Screen Sand
			2	*2.10*	32-BH107M_2.0-2.1 PID = 0.6 ppm			S	Gravelly SAND (crushed sandstone); fine to coarse grained, light orange / grey, with sandstone fragments, with fine to coarse grained and sub-rounded gravels, no odour.	D		
									Hole Terminated at 2.10 mBGL; Refusal on sandstone bedrock.			
			3									
			4									
			5									
			6									
			7									
			8									
			9									
			10									

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

BOREHOLE: 112-BH101

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	82 Hughes Avenue Ermington, 30 & 32 Waratah Street & 112 Wharf Road, Melrose Park			Date Started	22/4/21
Position	Refer to Figure A.2b			Date Completed	22/4/21
Job No.	E25077.E02	Contractor	HartGeo Pty Ltd	Logged	AS Date:22/4/21
Client	Holdmark NSW Pty Ltd	Drill Rig	Ute mounted drill rig	Checked	AI Date:14/5/21
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0	0.20				-	ASPHALT: 40mm thickness.	-		ASPHALT
				0.40				-	CONCRETE: 160mm thickness.	D		CONCRETE HARDSTAND
					112-BH101_0.3-0.4 PID = 0.2 ppm			CIS	FILL: Sandy GRAVEL; fine to coarse grained, dark brown, with fine to coarse grained sand, with ballast gravels, no odour.		-	FILL
				0.70					Sandy Silty CLAY: medium plasticity, fine grained sand, red grey mottled orange, no odour.	D - M		RESIDUAL
					PID = 0.3 ppm 112-BH101_0.6-0.7				Borehole Terminated at 0.70 mBGL; Target depth reached.			
			1									
			2									
			3									
			4									
			5									
			6									
			7									
			8									
			9									
			10									

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

BOREHOLE: 112-BH102

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Contamination | Remediation | Geotechnical

Project	Detailed Site Investigation			Sheet	1 OF 1
Location	82 Hughes Avenue Ermington, 30 & 32 Waratah Street & 112 Wharf Road, Melrose Park			Date Started	22/4/21
Position	Refer to Figure A.2b			Date Completed	22/4/21
Job No.	E25077.E02	Contractor	HartGeo Pty Ltd	Logged	AS Date:22/4/21
Client	Holdmark NSW Pty Ltd	Drill Rig	Ute mounted drill rig	Checked	AI Date:14/5/21
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0	0.20				-	ASPHALT: 40mm thickness.	-		ASPHALT
								-	CONCRETE: 160mm thickness.			CONCRETE HARDSTAND
				0.50	112-BH102_0.4-0.5 PID = 0.4 ppm			-	FILL: Silty SAND; fine to medium grained, grey, with a trace of low to medium plasticity clay, no odour.	D	-	FILL
								CIS	Sandy Silty CLAY: medium plasticity, red grey mottled orange, fine grained sand, no odour.	D - M		RESIDUAL
				0.90								
			1		PID = 0.2 ppm 112-BH102_0.7-0.8				Borehole Terminated at 0.90 mBGL; Target depth reached.			
			2									
			3									
			4									
			5									
			6									
			7									
			8									
			9									
			10									

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

BOREHOLE: 112-BH103

eiaustralia
Contamination | Remediation | Geotechnical

Project	Detailed Site Investigation			Sheet	1 OF 1
Location	82 Hughes Avenue Ermington, 30 & 32 Waratah Street & 112 Wharf Road, Melrose Park			Date Started	21/4/21
Position	Refer to Figure A.2b			Date Completed	21/4/21
Job No.	E25077.E02	Contractor	HartGeo Pty Ltd	Logged AS	Date:22/4/21
Client	Holdmark NSW Pty Ltd	Drill Rig	Ute mounted drill rig	Checked AI	Date:14/5/21
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	*DEPTH* RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0					-	ASPHALT: 40mm thickness.	-		ASPHALT
				0.40	112-BH103_0.2-0.3 PID = 0.8 ppm			-	FILL: Gravelly SAND; fine to coarse grained, brown, with fine to coarse grained, and sub-angular gravels, no odour.	D	-	FILL
				0.60				CI	Sandy Silty CLAY: medium plasticity, red grey mottled orange, with fine grained sand, no odour.	D - M		RESIDUAL
			1		PID = 0.8 ppm 112-BH103_0.5-0.6				Borehole Terminated at 0.60 mBGL; Target depth reached.			
			2									
			3									
			4									
			5									
			6									
			7									
			8									
			9									
			10									

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

BOREHOLE: 112-BH104

eiaustralia
Contamination | Remediation | Geotechnical

Project	Detailed Site Investigation			Sheet	1 OF 1
Location	82 Hughes Avenue Ermington, 30 & 32 Waratah Street & 112 Wharf Road, Melrose Park			Date Started	21/4/21
Position	Refer to Figure A.2b			Date Completed	21/4/21
Job No.	E25077.E02	Contractor	HartGeo Pty Ltd	Logged	AS Date:22/4/21
Client	Holdmark NSW Pty Ltd	Drill Rig	Ute mounted drill rig	Checked	AI Date:14/5/21
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0					-	ASPHALT: 40mm thickness.	-		ASPHALT
					112-BH104_0.2-0.3			-	FILL: Gravelly SAND; fine to coarse grained, brown, with fine to coarse grained, sub-angular gravels, no odour.	D	-	FILL
				0.50	PID = 1.2 ppm							
				0.80				CI	Sandy Silty CLAY: medium plasticity, red grey mottled orange, fine grained sand, no odour.	D - M		RESIDUAL
			1		PID = 0.7 ppm 112-BH104_0.7-0.8				Borehole Terminated at 0.80 mBGL; Target depth reached.			
			2									
			3									
			4									
			5									
			6									
			7									
			8									
			9									
			10									

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

BOREHOLE: 112-BH105

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Project	Detailed Site Investigation			Sheet	1 OF 1
Location	82 Hughes Avenue Ermington, 30 & 32 Waratah Street & 112 Wharf Road, Melrose Park			Date Started	21/4/21
Position	Refer to Figure A.2b			Date Completed	21/4/21
Job No.	E25077.E02	Contractor	HartGeo Pty Ltd	Logged AS	Date:22/4/21
Client	Holdmark NSW Pty Ltd	Drill Rig	Ute mounted drill rig	Checked AI	Date:14/5/21
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0					-	ASPHALT: 40mm thickness.	-		CONCRETE HARDSTAND
					112-BH105_0.2-0.3 PID = 0.9 ppm			-	FILL: Gravelly SAND; fine to coarse grained, brown, with fine to coarse grained, sub-angular gravels, no odour.	D	-	FILL
				0.40				CIS	Sandy Silty CLAY; medium plasticity, red grey mottled orange, fine grained sand, no odour.	D - M		RESIDUAL
				0.70	PID = 0.6 ppm 112-BH105_0.6-0.7				Borehole Terminated at 0.70 mBGL; Target depth reached.			
			1									
			2									
			3									
			4									
			5									
			6									
			7									
			8									
			9									
			10									

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

BOREHOLE: 112-BH106M

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Contamination | Remediation | Geotechnical

Project	Detailed Site Investigation			Sheet	1 OF 1
Location	82 Hughes Avenue Ermington, 30 & 32 Waratah Street & 112 Wharf Road, Melrose Park			Date Started	21/4/21
Position	Refer to Figure A.2b			Date Completed	21/4/21
Job No.	E25077.E02	Contractor	HartGeo Pty Ltd	Logged	AS Date:22/4/21
Client	Holdmark NSW Pty Ltd	Drill Rig	Ute mounted drill rig	Checked	AI Date:14/5/21
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	PIEZOMETER DETAILS ID / Static Water Level
AD/T	-	GWNE	0		112-BH106M_0.2-0.3			-	FILL: Gravelly SAND; fine to coarse grained, brown, with fine to coarse grained, sub-angular gravels, no odour.	D	-	112-BH106M
			1		PID = 1.1 ppm							Gatic Cover
					PID = 1 ppm 112-BH106M_0.9-1.0							Cuttings
												uPVC 50 mm Casing
												Bentonite
				1.30				-	FILL: Gravelly SAND; fine to coarse grained, dark brown, with fine to coarse grained, sub-angular gravels, with a trace of clay, no odour.	D - M		
				1.70	PID = 1.1 ppm 112-BH106M_1.4-1.5			-	SANDSTONE; extremely weathered, yellow/orange, no odour.	D		
			2		PID = 0.7 ppm 112-BH106M_1.9-2.0							Sand
				2.20					Borehole Terminated at 2.20 mBGL; Refusal on sandstone bedrock.			uPVC 50 mm Screen
			3									
			4									
			5									
			6									
			7									
			8									
			9									
			10									

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

BOREHOLE: 112-BH107

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Contamination | Remediation | Geotechnical

Project	Detailed Site Investigation			Sheet	1 OF 1
Location	82 Hughes Avenue Ermington, 30 & 32 Waratah Street & 112 Wharf Road, Melrose Park			Date Started	21/4/21
Position	Refer to Figure A.2b			Date Completed	21/4/21
Job No.	E25077.E02	Contractor	HartGeo Pty Ltd	Logged	AS Date:21/4/21
Client	Holdmark NSW Pty Ltd	Drill Rig	Ute mounted drill rig	Checked	AI Date:15/4/21
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		112-BH107_0.2-0.3 PID = 0.9 ppm			C	ASPHALT: 40mm thickness.	-		ASPHALT
				0.70				-	FILL: Gravelly SAND; fine to coarse grained, brown, with fine to coarse grained and sub-angular gravels, no odour.	D - M	-	FILL
				1.00				CIS	Sandy Silty CLAY; medium plasticity, orange mottled grey, with fine grained sand, no odour.			RESIDUAL
			1		PID = 0.6 ppm 112-BH107_0.9-1.0				Borehole Terminated at 1.00 mBGL; Target depth reached.			
			2									
			3									
			4									
			5									
			6									
			7									
			8									
			9									
			10									

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

BOREHOLE: 112-BH108

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Contamination | Remediation | Geotechnical

Project	Detailed Site Investigation			Sheet	1 OF 1
Location	82 Hughes Avenue Ermington, 30 & 32 Waratah Street & 112 Wharf Road, Melrose Park			Date Started	21/4/21
Position	Refer to Figure A.2b			Date Completed	21/4/21
Job No.	E25077.E02	Contractor	HartGeo Pty Ltd	Logged AS	Date:22/4/21
Client	Holdmark NSW Pty Ltd	Drill Rig	Ute mounted drill rig	Checked AI	Date:14/5/21
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0					-	ASPHALT: 40mm thickness.	-		ASPHALT
				0.30	112-BH108_0.2-0.3			-	FILL: Sandy GRAVEL; fine to coarse grained, light grey, with fine to coarse grained sand, no odour.	D		FILL
					PID = 0.8 ppm			-	FILL: Gravelly CLAY; medium to low plasticity, brown mottled grey, with fine to coarse grained and sub-angular to angular gravels, no odour.	D - M	-	
				0.90	PID = 0.7 ppm 112-BH108_0.7-0.8			CI	Sandy Silty CLAY; medium plasticity, brown mottled orange, with fine grained sand, no odour.			RESIDUAL
			1	1.20	PID = 0.4 ppm 112-BH108_1.1-1.2				Borehole Terminated at 1.20 mBGL; Target depth reached.			
			2									
			3									
			4									
			5									
			6									
			7									
			8									
			9									
			10									

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

BOREHOLE: 112-BH109

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Contamination | Remediation | Geotechnical

Project	Detailed Site Investigation			Sheet	1 OF 1
Location	82 Hughes Avenue Ermington, 30 & 32 Waratah Street & 112 Wharf Road, Melrose Park			Date Started	21/4/21
Position	Refer to Figure A.2b			Date Completed	21/4/21
Job No.	E25077.E02	Contractor	HartGeo Pty Ltd	Logged AS	Date:22/4/21
Client	Holdmark NSW Pty Ltd	Drill Rig	Ute mounted drill rig	Checked AI	Date:14/5/21
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0					-	ASPHALT: 40mm thickness.	-		ASPHALT
								-	FILL: Sandy GRAVEL; fine to coarse grained, light grey, with fine to coarse grained sand, no odour.	D		FILL
				0.40	112-BH109_0.3-0.4 PID = 0.8 ppm			-	FILL: Gravelly CLAY; medium to low plasticity, brown mottled grey, with fine to coarse grained and sub-angular to angular gravels, no odour.			
			1		PID = 0.7 ppm 112-BH109_0.7-0.8					D - M	-	
				1.70	PID = 1 ppm 112-BH109_1.4-1.5			CI	Sandy Silty CLAY: medium plasticity, grey mottled orange, fine grained sand, no odour.			RESIDUAL
			2		PID = 0.4 ppm 112-BH109_1.9-2.0				Borehole Terminated at 2.00 mBGL; Target depth reached.			
			3									
			4									
			5									
			6									
			7									
			8									
			9									
			10									

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

BOREHOLE: 112-BH110M

eiaustralia
Contamination | Remediation | Geotechnical

Project	Detailed Site Investigation			Sheet	1 OF 1
Location	82 Hughes Avenue Ermington, 30 & 32 Waratah Street & 112 Wharf Road, Melrose Park			Date Started	21/4/21
Position	Refer to Figure A.2b			Date Completed	21/4/21
Job No.	E25077.E02	Contractor	HartGeo Pty Ltd	Logged	AS Date:22/4/21
Client	Holdmark NSW Pty Ltd	Drill Rig	Ute mounted drill rig	Checked	AI Date:14/5/21
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	PIEZOMETER DETAILS ID / Static Water Level
AD/T	-	GWNE	0	0.20				-	CONCRETE: 200mm thickness.	-		112-BH110M
					112-BH110M_0.2-0.3 PID = 0.7 ppm			-	FILL: Gravelly SAND; fine to coarse grained, brown, with fine to coarse grained, sub-angular gravels, no odour.	W		
				0.50				CI	Sandy Silty CLAY; medium plasticity, grey mottled orange, with fine grained sand, no odour.	D - M	-	
				0.90	112-BH110M_0.7-0.8 PID = 0.6 ppm			SM	Silty SAND; fine to coarse, with a trace of ironstone, no odour.	D		
			1	1.40	112-BH110M_1.3-1.4 PID = 0.7 ppm				Borehole Terminated at 1.40 mBGL; Refusal on sandstone bedrock.			

Gatic Cover
Cuttings
uPVC 50 mm Casing
Bentonite
Sand
uPVC 50 mm Screen

2 3 4 5 6 7 8 9 10

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

BOREHOLE: 112-BH111

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Contamination | Remediation | Geotechnical

Project	Detailed Site Investigation			Sheet	1 OF 1
Location	82 Hughes Avenue Ermington, 30 & 32 Waratah Street & 112 Wharf Road, Melrose Park			Date Started	21/4/21
Position	Refer to Figure A.2b			Date Completed	21/4/21
Job No.	E25077.E02	Contractor	HartGeo Pty Ltd	Logged	AS Date:22/4/21
Client	Holdmark NSW Pty Ltd	Drill Rig	Ute mounted drill rig	Checked	AI Date:14/5/21
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0	0.30	112-BH111_0.2-0.3 PID = 0.3 ppm			-	FILL: Gravelly SAND; fine to coarse grained, brown, with fine to coarse grained, and sub-angular gravels, no odour.	D		FILL
								-	FILL: Gravelly CLAY; medium to low plasticity, brown mottled grey, with fine to coarse grained and sub-angular to angular gravels, no odour.	D - M	-	
			1	0.90 1.20	PID = 0.4 ppm 112-BH111_0.6-0.7 PID = 0.3 ppm 112-BH111_1.1.0-1.2			-	SANDSTONE: extremely weathered, yellow/orange, no odour. Borehole Terminated at 1.20 mBGL; Target depth reached.	D		WEATHERED BEDROCK
			2									
			3									
			4									
			5									
			6									
			7									
			8									
			9									
			10									

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

BOREHOLE: 112-BH112M

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Contamination | Remediation | Geotechnical

Project	Detailed Site Investigation			Sheet	1 OF 1
Location	82 Hughes Avenue Ermington, 30 & 32 Waratah Street & 112 Wharf Road, Melrose Park			Date Started	22/4/21
Position	Refer to Figure A.2b			Date Completed	22/4/21
Job No.	E25077.E02	Contractor	HartGeo Pty Ltd	Logged	AS Date:22/4/21
Client	Holdmark NSW Pty Ltd	Drill Rig	Ute mounted drill rig	Checked	AI Date:14/5/21
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	PIEZOMETER DETAILS ID Static Water Level
AD/T	-	GWNE	0					-	TOPSOIL; Gravelly SAND; fine to coarse, dark brown, fine sub-rounded to angular gravels, with some silt, no odour.			112-BH112M
				0.60	112-BH112M_0.4-0.5 PID = 0.4 ppm			-	SANDSTONE: extremely weathered, yellow/orange, no odour.	D	-	
			1		PID = 0.2 ppm 112-BH112M_0.9-1.0							
				1.50					Borehole Terminated at 1.50 mBGL; Refusal on sandstone bedrock.			
			2									
			3									
			4									
			5									
			6									
			7									
			8									
			9									
			10									

Gatic Cover
Cuttings
uPVC 50 mm Casing
Bentonite
Sand
uPVC 50 mm Screen

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

BOREHOLE: 112-BH113M

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Contamination | Remediation | Geotechnical

Project	Detailed Site Investigation			Sheet	1 OF 1
Location	82 Hughes Avenue Ermington, 30 & 32 Waratah Street & 112 Wharf Road, Melrose Park			Date Started	22/4/21
Position	Refer to Figure A.2b			Date Completed	22/4/21
Job No.	E25077.E02	Contractor	HartGeo Pty Ltd	Logged AS	Date:22/4/21
Client	Holdmark NSW Pty Ltd	Drill Rig	Ute mounted drill rig	Checked AI	Date:14/5/21
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	PIEZOMETER DETAILS ID Static Water Level
AD/T	-		0		112-BH113M_0.2-0.3 PID = 0.2 ppm			-	TOPSOIL; Gravelly SAND; fine to coarse, darkbrown, fine sub-rounded to angular gravels, with some silt, no odour.			112-BH113M
				0.60				-	SANDSTONE: extremely weathered, yellow/orange, no odour.			
			1		112-BH113M_0.8-0.9 PID = 0.3 ppm							
			2							D	-	
			3	3.00				-	SHALE: extremely weathered, grey, no odour.			
					112-BH113M_3.1-3.2 PID = 0.4 ppm							
			4	4.30					Borehole Terminated at 4.30 mBGL; Refusal on bedrock shale.			
			5									
			6									
			7									
			8									
			9									
			10									

Gatic Cover
Cuttings
uPVC 50 mm Casing
Bentonite
Sand
uPVC 50 mm Screen

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

Appendix H - Field Data Sheets

Daily Inspection Card - Remediation & Validation

Form OP 005a (Rev 1)

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Contamination | Remediation | Geotechnical
Suite 6.01, 55 Miller Street, Pyrmont NSW
Ph: (02) 9516 0722 Fax: (02) 9518 5088, service@eiaustralia.com.au

Project Number:	E25077	Engineer Name:	AS	Page:	1 of 1
Date:	20/4/21	Time ON Site:	7:00		
Travel Time:	30 mins	Time OFF Site:	5:45		

Site Address/Location: Melrose Park

Climatic Conditions: Sunny

Completed Works:
82-BH101M - no water only drilled to 2.0m - refusal
82-BH102M - developed

30-BH101M - unable to install well see below
30-BH102M - developed
30-BH103
30-BH104
30-BH105

Comments / Issues / Conclusions / Further Testing Required / Actions to be Undertaken / Timing of Actions:

30-BH101M: samples taken but well unable to be installed (hole keeps collapsing)

Jason 7:30 - 1:20pm back for 1hr 3:00-4:00

ASS samples @: 82-BH102M_5.4-5.5
30-BH101M_6.9-7.0

Signed by: A.Sc

Daily Inspection Card - Remediation & Validation

Form OP 005a (Rev 1)

eiaustralia
Contamination | Remediation | Geotechnical
Suite 6.01, 55 Miller Street, Pyrmont NSW
Ph: (02) 9516 0722 Fax: (02) 9518 5088, service@eiaustralia.com.au

Project Number:	E26077	Engineer Name:	AS	Page:	1 of 1
Date:	21/6/21	Time ON Site:	7:01		
Travel Time:	30 mins	Time OFF Site:	5:45		

Site Address/Location: Melrose Park

Climatic Conditions: Sunny

Completed Works:

30-BH107

30-BH106M, 8, 9, 10M, 11M

32-BH101

112-BH103, 4, 5, 7, 8, 9, 6M, 10M

All wells 30-BH6M, 11M & 30-BH6M, 10M developed full dry

Comments / Issues / Conclusions / Further Testing Required / Actions to be Undertaken / Timing of Actions:

- 112-BH101, 102 need concrete coring
- Libby has had a fire ~~alarm~~ suppression system alarm going off since yesterday... suspect concrete coring with Jason & Andrew I could see the problem – will investigate and let us know

- 112-BH6M & 10M installed at 2.2m & 1.4m

ASS: 30-BH106M_6.3-6.4
30-BH110M_7.0-7.1
30-BH111M_6.9-7.0

Signed by:

Daily Inspection Card - Remediation & Validation

Form OP 005a (Rev 1)

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Contamination | Remediation | Geotechnical
Suite 6.01, 55 Miller Street, Pyrmont NSW
Ph: (02) 9516 0722 Fax: (02) 9518 5088, service@eiaustralia.com.au

Project Number:	E25077	Engineer Name:	AS	Page:	1 of 1
Date:	22/2/21	Time ON Site:	7:00		
Travel Time:	30 mins	Time OFF Site:	3:30		

Site Address/Location: Melrose Park

Climatic Conditions: Sunny

Completed Works: Boreholes:

112-BH111, 112M, 113M, 101, 102

32-BH102, 103, 104M, 105, 106, 107M

QD2/QT2 @ 32-BH105_0.2-0.3

QD3/QT3 @ 32-BH107M_2.0-2.1

QD4/QT4 @ 112-BH102_0.7-0.8 – taken in natural due to not enough material in fill to sample

QR1/~~QR2~~ - prepared by running rinsate over Auger after 112-BH101.

Comments / Issues / Conclusions / Further Testing Required / Actions to be Undertaken / Timing of Actions:

- Jason Vere called to core at 112-BH101 & 102.
- All wells dry when developing
- Unable to get ASS sample at wells close to mangroves due to shallow refusal.

Signed by: [signature]

LEGEND (Note: All locations are approximate)

- Site boundary
- Proposed monitoring well location

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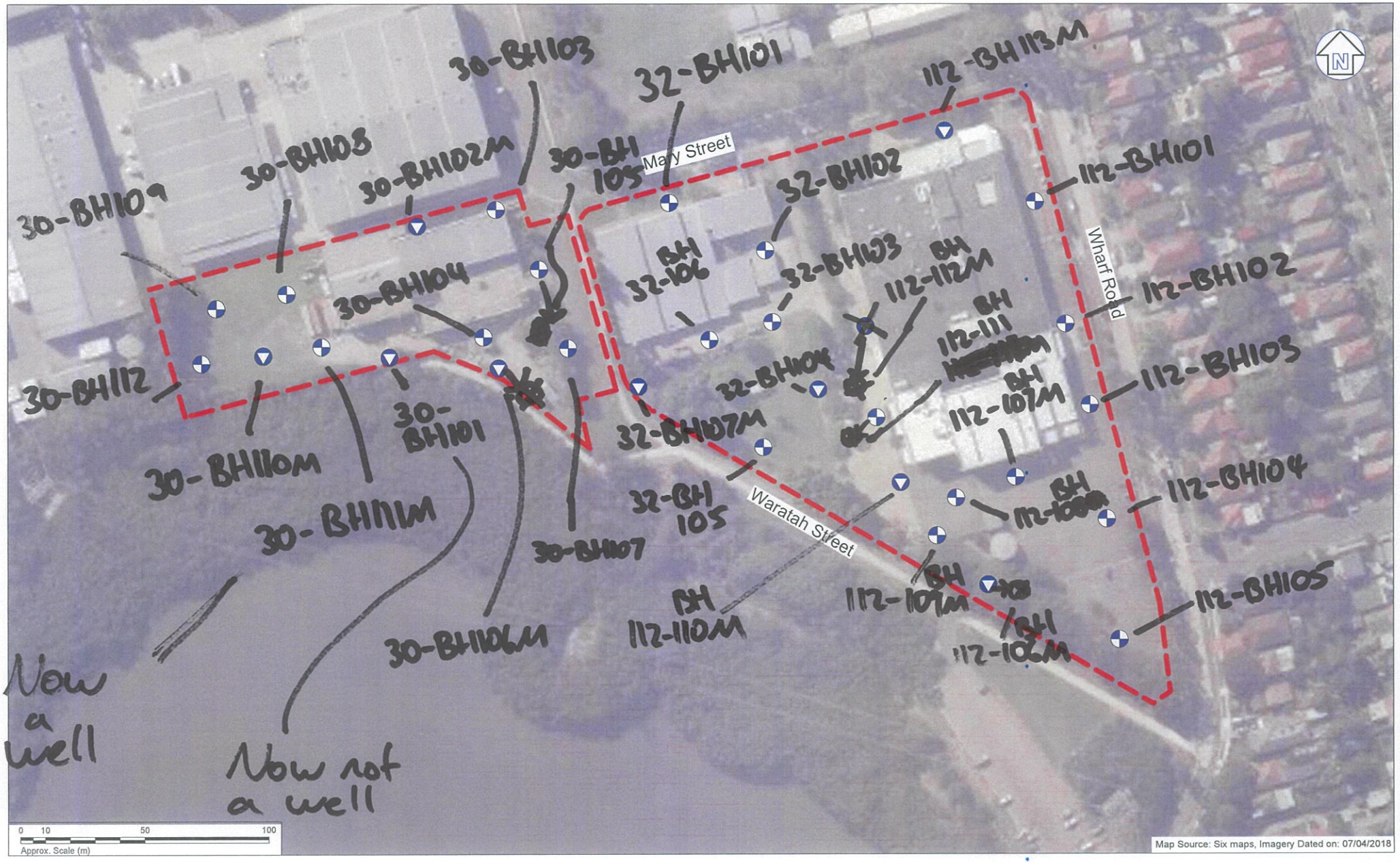
Suite 6.01, 55 Miller Street, PYRMONT 2009
Ph (02) 9516 0722 Fax (02) 9518 5088

Drawn:	T.M.
Approved:	-
Date:	-

Holdmark NSW Pty Ltd
Detailed Site Investigation
82 Hughes Ave, 30 & 32 Waratah Street & 112 Wharf Road, Melrose Park NSW
Proposed Sampling Location Plan

Figure: X.1

Project: E25077.E02



LEGEND (Note: All locations are approximate)

- Site boundary
- Proposed borehole location
- Proposed borehole/monitoring well location

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Practical Solutions for Built Environments
Suite 6.01, 55 Miller Street, PYRMONT 2009
Ph (02) 9516 0722 Fax (02) 9518 5088

Drawn:	T.M./ AM.H.	**Holdmark NSW Pty Ltd** Detailed Site Investigation 82 Hughes Ave, 30 & 32 Waratah Street & 112 Wharf Road, Melrose Park NSW Proposed Sampling Location Plan
Approved:	-	
Date:	-	

Figure: X.2

Project: E25077.E02

EI Australia
Suite 6.01, 55 Miller Street
PYRMONT, NSW, 2009

ABN 42 909 129 957
E service@eiaustralia.com.au
W www.eiaustralia.com.au
T 02 9516 0722

CALIBRATION CERTIFICATE FOR PHOTO IONISATION DETECTOR

Instrument: Mini RAE 3000

Serial Number: 592-906667 - EI **PID02** ☒ **OR** 592-901345 - EI **PID03** ☐

Instrument Conditions: Good

Calibration gas species: Isobutylene.

Calibration gas concentration: 100 ppm

Gas bottle number: Lot:985570 Cyl:93

This PID has been calibrated to Isobutylene gas with the span concentration displayed as 1000 ppm at 100 ppm span setting (allowable range +/-10ppm from span setting).

The PID is initially zero calibrated in fresh air.

Remaining gas in bottle: 10 psi (if reading is <250 psi, notify Equipment Manager to arrange new gas bottle order)

The above detector was calibrated in accordance with manufacturer's specifications.

Signed: [signature]

Date: 2024/21

Time: 10:30 am

EI Australia
Suite 6.01, 55 Miller Street
PYRMONT, NSW, 2009

ABN 42 909 129 957
E service@eiaustralia.com.au
W www.eiaustralia.com.au
T 02 9516 0722

CALIBRATION CERTIFICATE FOR PHOTO IONISATION DETECTOR

Instrument: Mini RAE 3000

Serial Number: 592-906667 - EI **PID02** ☒ **OR** 592-901345 - EI **PID03** ☐

Instrument Conditions: Good

Calibration gas species: Isobutylene.

Calibration gas concentration: 100 ppm

Gas bottle number: lot: 935570 cyl: 93

This PID has been calibrated to Isobutylene gas with the span concentration displayed as 100.0 ppm at 100 ppm span setting (allowable range +/-10ppm from span setting).

The PID is initially zero calibrated in fresh air.

Remaining gas in bottle: 60 psi (if reading is <250 psi, notify Equipment Manager to arrange new gas bottle order)

The above detector was calibrated in accordance with manufacturer's specifications.

Signed: [signature]

Date: 21/4/21

Time: 7:30.

EI Australia
Suite 6.01, 55 Miller Street
PYRMONT, NSW, 2009

ABN 42 909 129 957
E service@eiaustralia.com.au
W www.eiaustralia.com.au
T 02 9516 0722

CALIBRATION CERTIFICATE FOR PHOTO IONISATION DETECTOR

Instrument: Mini RAE 3000

Serial Number: 592-906667 - EI **PID02** ☐ **OR** 592-901345 - EI **PID03** ☐

Instrument Conditions: Cleaned

Calibration gas species: Isobutylene.

Calibration gas concentration: 100 ppm

Gas bottle number: Lot: 935570 Cyl: 93

This PID has been calibrated to Isobutylene gas with the span concentration displayed as 100.1 ppm at 100 ppm span setting (allowable range +/-10ppm from span setting).

The PID is initially zero calibrated in fresh air.

Remaining gas in bottle: 10 psi (if reading is <250 psi, notify Equipment Manager to arrange new gas bottle order)

The above detector was calibrated in accordance with manufacturer's specifications.

Signed: [signature]

Date: 22/4/21

Time: 8:15

Report Card

eiaustralia
PYRMONT, NSW, 2009
ABN 42 909 129 957
E service@eiaustralia.com.au
W www.eiaustralia.com.au
T 02 9516 0722

Fresh air calibration completed?			
Span gas calibration completed?			
Primary Samples:	Max PID Reading (ppm):	QA/QC Samples:	Sample Description, etc. (Type of strata, colour, consistency, particle size, particle shape, grading, secondary materials, moisture, odour)
82-101M ✓			
82-102M ✓			
30-101M ✓			
102M ✓			
103 ✓			
104 ✓			
105 ✓			
106M ✓			
107 ✓			
108 ✓			
109 ✓			
110M ✓			
111M ✓			
112 ✓			
32-101 ✓		13 wells	
-102 ✓			
-103 ✓			
-104M ✓			
-105 ✓			
-106 ✓			
-107M ✓			
112-101 ✓			
-102 ✓			
-103 ✓			
-104 ✓			
-105 ✓			
-106M ✓			
-107 ✓			
-108 ✓			
-109 ✓			
-110M ✓			
-111 ✓			
-112M ✓			
-113M ✓			

Signed by:

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Suite 6.01, 55 Miller Street,
Pyrmont, NSW 2009
Ph: (02) 9516 0722
Fax: (02) 9516 0744
service@eiaustralia.com.au

Borehole Log

BH No: 82-BH101M
Sheet:
Job No: E25077.E02

Client: Holdmarks
Principal:
Project:
Location: 82 Hughes Ave
Equipment: Ute drill rig -- Hart Geo
Diameter:

Started: 20/4/21
Finished: 20/4/21
Logged: A-S
Checked:
Slope: -90°
Bearing: --
RL Surface:
Datum:

drilling information					material information					
method	water	samples	sample method / QC	depth (m)	PID reading	material code	material description soil type, particle characteristics or fines plasticity, colour, secondary and minor components	moisture + density/consistency	Odour (Y/N)	well construction
				0.4 0.5	0.4	F1	~~Soil~~ Fill Sandy CLAY: F-C sand, med Pl clay, light brown orange brown	D St	N	Gatic
				0.9 1.0	0.3	F2	Fill: Silty Clayey SAND, F-C sand. Med pl clay, dark brown	M	N	0.95 bento
				1.4 1.5	0.2					1.45 1.5
				1.7		N1	~~Rock~~ Sandstone Rock (crushed by augers)	D		Sand
	Dry			2.0			Sandy Gravel: F-C sand, F-C SR gravels orange			2.0
							Refusal @ 2.0 m - rock sandstone			screen 1.5-2.0
							(possibly Fill)			

method

AS	auger screw*
AD	auger drill*
RR	roller/tricone
W	washbore
CB	claw or blade bit
HA	hand auger
D	diatube
V	V-bit
T	TC-bit
NMLC	NMLC core
NQ, HQ, PQ	wireline core

*bit shown by suffix e.g. ADV

odour index

HC	hydrocarbon
S	solvent
Su	sulfur

odour strength index

w	weak
m	moderate
s	strong
vs	very strong

weathering

XW	extremely weatherd
HW	highly weathered
MW	moderately weathered
SW	slightly weathered
FR	fresh

water

level at date / time
inflow
complete outflow
partial outflow

Classification symbols and soil description based on unified classification system. Refer accompanying description sheets for further information.

moisture

D	dry
M	moist
W	wet
Wp	plastic limit
Wl	liquid limit

grain size

vf	very fine
f	fine
m	medium
c	coarse

consistency

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable

density index

VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

material boundaries

known boundary
probable boundary
possible boundary

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Borehole Log

Suite 6.01, 55 Miller Street,
Pyrmont, NSW 2009
Ph: (02) 9516 0722
Fax: (02) 9516 0744
service@eiaustralia.com.au

BH No: 82-BH102M
Sheet:
Job No: E25077.E02

Client: Holdmark
Principal:
Project:
Location: 82 Hughes Ave
Equipment: Ute drill rig
Diameter:

Started: 20/4/21
Finished: 20/4/21
Logged:
Checked:
Slope: -90°
Bearing: --
RL Surface:
Datum:

drilling information					material information					
method	water	samples	sample method / QC	depth (m)	PID reading	material code	material description soil type, particle characteristics or fines plasticity, colour, secondary and minor components	moisture + density/consistency	Odour (Y/N)	well construction
				0.4		F3	Fill: Gravelly SAND: F-C sand, F-C gravels A-SA with trace brick pieces, dark brown	D	N	Gatic
				0.5	0.3					
				0.6						
				0.9		F4	Fill: Gravelly SAND: F-C sand, F-C gravels A-SA orange brown	D	N	
				1.0	0.1					
				1.3						
				1.4		F4	colour change: dark brown	D	N	
				1.5	1.4					
				1.9	0.6					
				2.0						
				2.3						
				2.4		F5	Fill:			
				2.5	0.4		Gravelly sandy CLAY: F-C sand, F-C gravels A-SA, med Pl clay dark brown/brown	D/M	N	2.7
				2.9						bento
				3.0	0.4					
				BHSA						
				3.5	0.6					
				3.6						3.9
				3.9		F6	Fill: Silty Clay, med Pl, red/orange mottled brown with trace sandstone fines F-C	D/M	N	3.8
				4.0	0.6					
				4.2						Sand
						F7	Fill:	D		
				4.4		M1	~~Sandy Silty Clay, F-C sand, med Pl clay dark brown with trace sandstone gravels F-M~~	~~M~~	N	
				4.5	1.1		Natural: sandstone (crushed by Auger)			
				4.9			Sandy GRAVEL: F-C Sand, with F-C subrounded Gravels. Orange			
				5.0	2.3					
				5.4						
				5.5	1.0					
				5.8						5.8
							Refusal @ 5.8m - Sandstone bedrock			Screen 3.8-5.8

QD1
QT1

slight seepage observed at bottom of BH

unable to get clean sample (mixed in with F6)

Extra ZLB for ABS

100mm water, boiled until dry

Slight chemical odour observed when installing well

method		odour index		weathering		Classification symbols and soil description based on unified classification system. Refer accompanying description sheets for further information.	consistency		density index	
AS	auger screw*	HC	hydrocarbon	XW	extremely weatherd		VS	very soft	VL	very loose
AD	auger drill*	S	solvent	HW	highly weathered		S	soft	L	loose
RR	roller/tricone	Su	sulfur	MW	moderately weathered		F	firm	MD	medium dense
W	washbore			SW	slightly weathered		St	stiff	D	dense
CB	claw or blade bit			FR	fresh		VSt	very stiff	VD	very dense
HA	hand auger	odour strength index		water		moisture	H	hard		
D	diatube	w	weak		level at date / time	D dry	Fb	friable		
V	V-bit	m	moderate		inflow	M moist	material boundaries			
T	TC-bit	s	strong		complete outflow	W wet		known boundary		
NMLC	NMLC core	vs	very strong		partial outflow	Wp plastic limit		probable boundary		
NQ, HQ, PQ	wireline core					Wl liquid limit		possible boundary		
*bit shown by suffix e.g. ADV						grain size: vf very fine; f fine; m medium; c coarse				

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Borehole Log

Suite 6.01, 55 Miller Street,
Pyrmont, NSW 2009
Ph: (02) 9516 0722
Fax: (02) 9516 0744
service@eiaustralia.com.au

BH No: 30-BH101M
Sheet:
Job No: E25077.E02

Client: ~~Hatch~~ Holdmark
Principal:
Project:
Location:
Equipment: Excavator
Diameter:

Started: 20/4/21
Finished:
Logged: AS
Checked:
Slope: -90°
Bearing: --
RL Surface:
Datum:

drilling information					material information					
method	water	samples	sample method / QC*	depth (m)	PID reading	material code	material description soil type, particle characteristics or fines plasticity, colour, secondary and minor components	moisture + density/consistency	Odour (Y/N)	well construction
				0.15			Concrete			
				0.2			Fill:			
				0.3	0.6	F7	Silty Sand: F-C sand, trace gravel	D M	N	
				0.4						
				0.5	0.4	F10	Gravelly SAND: F-C sand, A-SA gravels, light orange	D	N	
				0.6						
				0.8			Trace			
				0.9	0.3	~~NA~~ F8	Sandstone - white/grey	D	N	
				1.0						
				1.1			Crushed by Auger →			
				1.3			~~Silty~~ Sandy SILT: F sand,			
				1.4			white/grey			
				1.5	0.7		Void			
						~~NA~~ N1	Same as N1	D	N	
				2.3						
						~~NA~~ F10	~~Gravelly SAND~~:	D	N	
				2.9			Sandy GRAVEL: F-C sand with			
				3.0	0.4		F-C sub rounded sandstone gravels (Not crushed by Auger)			
	∇ water									
				4.0						
				4.4	1.0	F8	~~Sandy Gravel sandstone~~ Mixed with Wet sandy silty CLAY. brown	W	M Y	
				4.5		F11				
				5.0		~~NA~~ N2	Sandy Silty gravelly CLAY.			swamp
				5.4	0.8	N2	F-C gravel SA, F-C sand, med pl clay dark brown/black with			~~sample~~
				5.5			orange throughout		Y	odour
							Sandy silty clay - Med Pl, F-C sand - dark brown - Mangrove soil with trace organics	W	M	
						N3	Silty CLAY: Med Low Pl - Stiff, grey mottled orange. (sample covered with Wet N2 auger to get clean sample)	D M	N	
				6.9	0.7					
				7.0						

method
AS auger screw*
AD auger drill*
RR roller/tricone
W washbore
CB claw or blade bit
HA hand auger
D diatube
V V-bit
T TC-bit
NMLC NMLC core
NQ, HQ, PQ wireline core
*bit shown by suffix e.g. ADV

odour index
HC hydrocarbon
S solvent
Su sulfur

odour strength index
w weak
m moderate
s strong
vs very strong

weathering
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh

water
level at date / time
inflow
complete outflow
partial outflow

Classification symbols and soil description based on unified classification system. Refer accompanying description sheets for further information.

moisture
D dry
M moist
W wet
Wp plastic limit
Wl liquid limit

grain size
vf very fine
f fine
m medium
c coarse

consistency
VS very soft
S soft
F firm
St stiff
VSt very stiff
H hard
Fb friable

density index
VL very loose
L loose
MD medium dense
D dense
VD very dense

material boundaries
known boundary
probable boundary
possible boundary

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Borehole Log

Suite 6.01, 55 Miller Street,
Pyrmont, NSW 2009
Ph: (02) 9516 0722
Fax: (02) 9516 0744
service@eiaustralia.com.au

BH No: 20-BH02M
Sheet:
Job No: E25077.E02

Client:
Principal:
Project:
Location:
Started: 20/4/21
Finished:
Logged: AS
Checked:

Equipment: ute
Diameter:
Slope: -90°
Bearing: - -
RL Surface:
Datum:

method	water	samples	sample method / QC	depth (m)	PID reading	material code	material description (soil type, particle characteristics or fines plasticity, colour, secondary and minor components)	moisture + density/consistency	Odour (Y/N)	well construction
				0.1			F. Gone			gatic
		☒		0.2 / 0.3	0.2	F12	SAND: F-C sand, yellow	D	N	
				0.4						
		☒		0.5 / 0.6	0.1	F13	Fill: Gravelly Clay, ~~[illegible]~~ med PI, F sand gravels, red brown	D-m	N	0.5m bento
		☒		1.2 / 1.3	0.2					
				1.6						sand 1.55
		☒		2.0 / 2.1	1.0	F14	Fill: Gravelly SAND, F-C ~~gravel~~ sand with fine gravels, with trace brick fragments, brown	D	N	
				2.3						
		☒		2.4 / 2.5	0.4	F14		W	N	
				2.7						
		☒		3.5 / 3.6	1.1	F14		M / W	N	
				3.8						
		☒		4.0 / 4.1	0.5	F1	Fill: Sandstone (crushed by Auger) Sandy Silts Gravel F-C sand with F-C subrounded gravels orange	D-M	N	
				4.55						4.55
							Refusal @ 4.55m Sandstone			

method		odour index		weathering	
AS	auger screw*	HC	hydrocarbon	XW	extremely weatherd
AD	auger drill*	S	solvent	HW	highly weathered
RR	roller/tricone	Su	sulfur	MW	moderately weathered
W	washbore			SW	slightly weathered
CB	claw or blade bit			FR	fresh
HA	hand auger				
D	diatube				
V	V-bit				
T	TC-bit				
NMLC	NMLC core				
NQ, HQ, PQ	wireline core				

*bit shown by suffix e.g. ADV

odour strength index: w weak; m moderate; s strong; vs very strong

water: level at date / time; inflow; complete outflow; partial outflow

Classification symbols and soil description based on unified classification system. Refer accompanying description sheets for further information.

moisture: D dry; M moist; W wet; Wp plastic limit; Wl liquid limit

grain size: vf very fine; f fine; m medium; c coarse

consistency: VS very soft; S soft; F firm; St stiff; VSt very stiff; H hard; Fb friable

density index: VL very loose; L loose; MD medium dense; D dense; VD very dense

material boundaries: ——— known boundary; — — — probable boundary; ——?—— possible boundary

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Borehole Log

Suite 6.01, 55 Miller Street,
Pyrmont, NSW 2009
Ph: (02) 9516 0722
Fax: (02) 9516 0744
service@eiaustralia.com.au

BH No: 20-BH103
Sheet:
Job No: E25077.E02

Client:
Principal:
Project:
Location:
Started: 20/4/24
Finished:
Logged: A.S
Checked:
Equipment: Ute
Slope: -90°
RL Surface:
Diameter:
Bearing: --
Datum:

drilling information					material information					
method	water	samples	sample method / QC	depth (m)	PID reading	material code	material description soil type, particle characteristics or fines plasticity, colour, secondary and minor components	moisture + density/consistency	Odour (Y/N)	well construction
				0.15			concrete			
				0.3		FILL		D	N	
				0.4	0.2					
						FILL	colour: brown/black mottled brown	D	N	
				0.9	0.2			M		
				1.0						
				1.1						
				1.3	0.1	NATIVE	Silty Clay: stiff, Med Pl, Root	D	N	
				1.4			Slight orange mottled red	M		
				1.5						
							EOH@1.5m TDR			

method

AS	auger screw*
AD	auger drill*
RR	roller/tricone
W	washbore
CB	claw or blade bit
HA	hand auger
D	diatube
V	V-bit
T	TC-bit
NMLC	NMLC core
NQ, HQ, PQ	wireline core

*bit shown by suffix e.g. ADV

odour index

HC	hydrocarbon
S	solvent
Su	sulfur

odour strength index

w	weak
m	moderate
s	strong
vs	very strong

weathering

XW	extremely weatherd
HW	highly weathered
MW	moderately weathered
SW	slightly weathered
FR	fresh

water

- level at date / time
- inflow
- complete outflow
- partial outflow

Classification symbols and soil description based on unified classification system. Refer accompanying description sheets for further information.

moisture

D	dry
M	moist
W	wet
Wp	plastic limit
Wl	liquid limit

grain size

vf	very fine
f	fine
m	medium
c	coarse

consistency

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable

density index

VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

material boundaries

- known boundary
- probable boundary
- possible boundary

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Borehole Log

Suite 6.01, 55 Miller Street,
Pyrmont, NSW 2009
Ph: (02) 9516 0722
Fax: (02) 9516 0744
service@eiaustralia.com.au

BH No: 20-BH104
Sheet:
Job No: E25077.E02

Client:
Principal:
Project:
Location:
Started: 20/4/21
Finished:
Logged: AJ
Checked:
Equipment: ute
Diameter:
Slope: -90°
Bearing: --
RL Surface:
Datum:

drilling information					material information					
method	water	samples	sample method / QC	depth (m)	PID reading	material code	material description soil type, particle characteristics or fines plasticity, colour, secondary and minor components	moisture + density/consistency	Odour (Y/N)	well construction
						FIS	Gravelly SAND: F-C sand, F gravels SA - black/brown and grey/white	D	N	
			0.4	0.4 0.5	0.3					
				0.9 1.0	0.2	F14		D	N	
				1.7		F16	F14 mixed with rubble			
				2.0 2.1	0.3		Gravelly Sandy CLAY, F-C sand, with fine gravels, trace brick pieces med pl clay.	D M	N	
				2.6						
				2.7 2.8	0.2	F14		D	N	
				3.3						
				3.4 3.5	0.2	F17 (Possible Natural)	FILT: cored by auger into Silty SAND: F-C sand with trace silt stones. orange red (Possibly bedrock)	D M	N	
				4.2 4.3	0.3					
							colour change: brown			
				4.9 5.0 5.1	0.6			D W	N	
							EOH@5.1m Refusal on bedrock			

method

AS	auger screw*
AD	auger drill*
RR	roller/tricone
W	washbore
CB	claw or blade bit
HA	hand auger
D	diatube
V	V-bit
T	TC-bit
NMLC	NMLC core
NQ, HQ, PQ	wireline core

*bit shown by suffix e.g. ADV

odour index

HC	hydrocarbon
S	solvent
Su	sulfur

odour strength index

w	weak
m	moderate
s	strong
vs	very strong

weathering

XW	extremely weatherd
HW	highly weathered
MW	moderately weathered
SW	slightly weathered
FR	fresh

water

level at date / time
inflow
complete outflow
partial outflow

Classification symbols and soil description based on unified classification system. Refer accompanying description sheets for further information.

moisture

D	dry
M	moist
W	wet
Wp	plastic limit
Wl	liquid limit

grain size

vf	very fine
f	fine
m	medium
c	coarse

consistency

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable

density index

VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

material boundaries

known boundary
probable boundary
possible boundary

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Contamination | Remediation | Geotechnical

Borehole Log

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Pyrmont, NSW 2009
Ph: (02) 9516 0722
Fax: (02) 9516 0744
service@eiaustralia.com.au

BH No: 30-BH105
Sheet:
Job No: E25077.E02

Client:
Principal:
Project:
Location:

Started: 28/4/21
Finished:
Logged: AS
Checked:

Equipment: Ute
Diameter:

Slope: -90°
Bearing: --

RL Surface:
Datum:

drilling information					material information					
method	water	samples	sample method / QC	depth (m)	PID reading	material code	material description soil type, particle characteristics or fines plasticity, colour, secondary and minor components	moisture + density/consistency	Odour (Y/N)	well construction
		ES		0.4 0.5	0.3	~~FIO~~ FIS		D	N	
		~~ES~~		~~0.9~~ 1.0						
		ES		1.2 1.3	0.2					
						FG ~~FIO~~	(possibly natural)			
		ES		1.4 1.5	0.1			D	= slight odour (can't distinguish odour)	
				1.7			Refusal @ 1.7m too hard, possible bedrock			

method

AS	auger screw*
AD	auger drill*
RR	roller/tricone
W	washbore
CB	claw or blade bit
HA	hand auger
D	diatube
V	V-bit
T	TC-bit
NMLC	NMLC core
NQ, HQ, PQ	wireline core

*bit shown by suffix e.g. ADV

odour index

HC	hydrocarbon
S	solvent
Su	sulfur

odour strength index

w	weak
m	moderate
s	strong
vs	very strong

weathering

XW	extremely weatherd
HW	highly weathered
MW	moderately weathered
SW	slightly weathered
FR	fresh

water

level at date / time
inflow
complete outflow
partial outflow

Classification symbols and soil description based on unified classification system. Refer accompanying description sheets for further information.

moisture

D	dry
M	moist
W	wet
Wp	plastic limit
Wl	liquid limit

grain size

vf	very fine
f	fine
m	medium
c	coarse

consistency

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable

density index

VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

material boundaries

known boundary
probable boundary
possible boundary

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Pyrmont, NSW 2009
Ph: (02) 9516 0722
Fax: (02) 9516 0744
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Borehole Log

BH No: E30-BH106M
Sheet:
Job No: E25077.E02

Client:		Started:	21/4/21
Principal:		Finished:	
Project:		Logged:	AS
Location:		Checked:	
Equipment: ute	Slope: -90°	RL Surface:	
Diameter:	Bearing: --	Datum:	

method	water	samples	sample method / QC	depth (m)	PID reading	material code	material description (soil type, particle characteristics or fines plasticity, colour, secondary and minor components)	moisture + density/consistency	Odour (Y/N)	well construction
						F15		D	N	Gatic; cover
				0.3 0.4	0.4		with trace metal pieces			backfill
										0.7
F9 mixed in				1.1 1.2 1.3	1.0	F15	with trace F9	D	N	bento
						F9		D	N	
				1.6						1.7
						F15	with trace metal pieces	D	N	
	water @ 3.4			1.9 2.0	0.3					2.0
				2.7 2.8	0.2					Sand
				3.4 3.5	0.5	F18	↑	M	N	
				4.2 4.4 4.5	0.1	F18	Sandy Gravelly CLAY. (Auger crushing gravels & very hard)	W	N	5.0
				5.4 5.5 6.0	0.1		F-C sand, F-C sr gravels, Med pl clay			collapse
+ 2 ZLBs for ASS				6.3 6.4	0.2					6.4
							EOH @ 6.4 - Refusal on Sandy Gravelly clay.			Bore Hole ~~Borehole collapsing into putting ?? unable to install~~

method		odour index		weathering		consistency		density index	
AS	auger screw*	HC	hydrocarbon	XW	extremely weatherd	VS	very soft	VL	very loose
AD	auger drill*	S	solvent	HW	highly weathered	S	soft	L	loose
RR	roller/tricone	Su	sulfur	MW	moderately weathered	F	firm	MD	medium dense
W	washbore			SW	slightly weathered	St	stiff	D	dense
CB	claw or blade bit			FR	fresh	VSt	very stiff	VD	very dense
HA	hand auger					H	hard		
D	diatube					Fb	friable		
V	V-bit								
T	TC-bit								
NMLC	NMLC core								
NQ, HQ, PQ	wireline core								

*bit shown by suffix e.g. ADV

Classification symbols and soil description based on unified classification system. Refer accompanying description sheets for further information.

odour strength index	
w	weak
m	moderate
s	strong
vs	very strong

water	
▼	level at date / time
►	inflow
◄	complete outflow
◁	partial outflow

moisture		grain size	
D	dry	vf	very fine
M	moist	f	fine
W	wet	m	medium
Wp	plastic limit	c	coarse
Wl	liquid limit		

material boundaries	
———	known boundary
— — —	probable boundary
—?—	possible boundary

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Borehole Log

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Pyrmont, NSW 2009
Ph: (02) 9516 0722
Fax: (02) 9516 0744
service@eiaustralia.com.au

BH No: 30-BH107
Sheet:
Job No: E25077.E02

Client:
Principal:
Project:
Location:
Equipment: ute
Diameter:
Slope: -90°
Bearing: --
Started: 21/4/21
Finished:
Logged: AS
Checked:
RL Surface:
Datum:

method	water	samples	sample method / QC	depth (m)	PID reading	material code	material description (soil type, particle characteristics or fines plasticity, colour, secondary and minor components)	moisture + density/consistency	Odour (Y/N)	well construction
							fill:			
						F19	Crushed sandstone mixed with F15			
							F18: Gravelly SAND, F-C sand, F-C gravels SA-A. Black and white sand with orange sand mixture	D	N	
		▨		0.3–0.4	0.4					
						F20	Sandy gravelly CLAY: FC sand, F-C SA gravels, med Pl clay brown	D/m	N	
		▨		0.9–1.0	0.3					
				1.1						
		▨		1.3–1.4	0.4	F21	Gravelly CLAY: F-M gravels SR, red mottled grey clay	D/m	N	
				2.2						
		▨		2.3–2.4	0.2	F22	Sandstone boulder. (sample mixed with F20			
				2.6						
					0.2	F20		D/m	N	
		▨		2.9–3.0						
				3.2						
						F17	odour: brown	D	N	
		▨		3.8–3.9	0.2 (likely Natural)					
				4.5						
							EOH @ 4.5 Refusal on bedrock			

method
AS auger screw*
AD auger drill*
RR roller/tricone
W washbore
CB claw or blade bit
HA hand auger
D diatube
V V-bit
T TC-bit
NMLC NMLC core
NQ, HQ, PQ wireline core
*bit shown by suffix e.g. ADV

odour index
HC hydrocarbon
S solvent
Su sulfur

odour strength index
w weak
m moderate
s strong
vs very strong

weathering
XW extremely weatherd
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh

water
level at date / time
inflow
complete outflow
partial outflow

Classification symbols and soil description based on unified classification system. Refer accompanying description sheets for further information.

moisture
D dry
M moist
W wet
Wp plastic limit
Wl liquid limit

grain size
vf very fine
f fine
m medium
c coarse

consistency
VS very soft
S soft
F firm
St stiff
VSt very stiff
H hard
Fb friable

density index
VL very loose
L loose
MD medium dense
D dense
VD very dense

material boundaries
known boundary
probable boundary
possible boundary

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Borehole Log

Suite 6.01, 55 Miller Street,
Pyrmont, NSW 2009
Ph: (02) 9516 0722
Fax: (02) 9516 0744
service@eiaustralia.com.au

BH No: 30-BH108
Sheet:
Job No: E25077.E02

Client:
Principal:
Project:
Location:
Started: 20/6/17
Finished:
Logged: AS
Checked:

Equipment: Ute
Diameter:
Slope: -90°
Bearing: --
RL Surface:
Datum:

drilling information					material information					
method	water	samples	sample method / QC	depth (m)	PID reading	material code	material description soil type, particle characteristics or fines plasticity, colour, secondary and minor components	moisture + density/consistency	Odour (Y/N)	well construction
				0.2	0.3		Gravelly Sand: F-C sand, F gravels with trace clay brown	D	N	
				0.3						
				0.4	0.2	PID	colour: Red/brown	D/M	N	
				0.5						
				1.1						
				1.2	0.1	FZ1	orange/grey mottled brown	M	N	
				1.3						
				1.7						
				1.8	0.0		sandstone bedrock/ sample mixed with FZ1	D/M	N	
				1.9						
	under auger					FZ1	colour: brown with black streaks mottling	M	N	
				2.7	0.2					
				2.8						
				3.2		N1		D	N	
				3.4	0.2					
				3.5						
				3.7			EOH Refusal @ 3.7 TDR also refusal RTTA			

method
AS auger screw*
AD auger drill*
RR roller/tricone
W washbore
CB claw or blade bit
HA hand auger
D diatube
V V-bit
T TC-bit
NMLC NMLC core
NQ, HQ, PQ wireline core
*bit shown by suffix e.g. ADV

odour index
HC hydrocarbon
S solvent
Su sulfur

odour strength index
w weak
m moderate
s strong
vs very strong

weathering
XW extremely weatherd
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh

water
level at date / time
inflow
complete outflow
partial outflow

Classification symbols and soil description based on unified classification system. Refer accompanying description sheets for further information.

moisture
D dry
M moist
W wet
Wp plastic limit
Wl liquid limit

grain size
vf very fine
f fine
m medium
c coarse

consistency
VS very soft
S soft
F firm
St stiff
VSt very stiff
H hard
Fb friable

density index
VL very loose
L loose
MD medium dense
D dense
VD very dense

material boundaries
known boundary
probable boundary
possible boundary

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Borehole Log

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BH No: 30-BH109
Sheet:
Job No: E25077.E02

Client:
Principal:
Project:
Location:
Started: 21/4/21
Finished:
Logged: A.S
Checked:

Equipment: Utc
Diameter:
Slope: -90°
Bearing: --
RL Surface:
Datum:

drilling information					material information					
method	water	samples	sample method / QC	depth (m)	PID reading	material code	material description soil type, particle characteristics or fines plasticity, colour, secondary and minor components	moisture + density/consistency	Odour (Y/N)	well construction
		II		0.3 0.4	0.4	FILL	colour: brown	D	N	
		III		0.5 0.6	0.2	FILL	colour: Red with brown brown mottling	D M	N	
				1.3						
		II		1.5 1.6	0.1	FILL	colour: brown	M	N	
		III		2.0 2.7	0.1					
				2.8						
						FILL		M	N	
		II		3.5 3.6	0.2					
				3.8						
		III		4.0 4.1	0.1	NL		W	N	
							EOH@4.1m TDR			

method
- AS auger screw*
- AD auger drill*
- RR roller/tricone
- W washbore
- CB claw or blade bit
- HA hand auger
- D diatube
- V V-bit
- T TC-bit
- NMLC NMLC core
- NQ, HQ, PQ wireline core

*bit shown by suffix e.g. ADV

odour index
- HC hydrocarbon
- S solvent
- Su sulfur

odour strength index
- w weak
- m moderate
- s strong
- vs very strong

weathering
- XW extremely weatherd
- HW highly weathered
- MW moderately weathered
- SW slightly weathered
- FR fresh

water
- level at date / time
- inflow
- complete outflow
- partial outflow

Classification symbols and soil description based on unified classification system. Refer accompanying description sheets for further information.

moisture
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

grain size
- vf very fine
- f fine
- m medium
- c coarse

consistency
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable

density index
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

material boundaries
- known boundary
- probable boundary
- possible boundary

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Borehole Log

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Fax: (02) 9516 0744
service@eiaustralia.com.au

BH No: 20-BH110M
Sheet:
Job No: E25077.E02

Client:
Principal:
Project:
Location:
Started: 21/6/21
Finished:
Logged: AS
Checked:

Equipment:
Diameter:
Slope: -90°
Bearing: --
RL Surface:
Datum:

drilling information					material information					
method	water	samples	sample method / QC	depth (m)	PID reading	material code	material description soil type, particle characteristics or fines plasticity, colour, secondary and minor components	moisture + density/consistency	Odour (Y/N)	well construction
				0.2	0.4	FILL	Gravelly Sand: F-C sand, F rounded gravels. Red	D	Y	
				0.3						
						FILL		D		
								M	N	
				0.7	0.4					bore
				0.8						
				1.0						
						FILL	Clay: orange mottled grey, Med-Hi PI	D		
				1.4	0.2			M	N	
				1.5						
						FILL	with trace grey mottling	M	N	
				2.2						
				2.3	0.1					
				2.9	0.3					3.4
				3.0						
						FILL	with trace brick pieces	M	N	
				3.4				W		bore
				3.5	0.4					
				4.0						
				4.1		NS	Peaty ~~Clay~~ ~~Sand~~ Clayey SAND, F sand	W	Y	4.4
				4.2	0.5		black		Sulfur odour	
										4.5
				5.3						
						NS	with shell pieces	W	Y	sand
				6.8						
Ass sample only				7.0				M	Y	
				7.1	0.2	NS	Clay: grey mottled orange, High PI with shell pieces	W		
				7.5						7.5
							EOH @ 7.5m TDR			

Water @ 3.0

method

AS	auger screw*
AD	auger drill*
RR	roller/tricone
W	washbore
CB	claw or blade bit
HA	hand auger
D	diatube
V	V-bit
T	TC-bit
NMLC	NMLC core
NQ, HQ, PQ	wireline core

*bit shown by suffix e.g. ADV

odour index

HC	hydrocarbon
S	solvent
Su	sulfur

odour strength index

w	weak
m	moderate
s	strong
vs	very strong

weathering

XW	extremely weatherd
HW	highly weathered
MW	moderately weathered
SW	slightly weathered
FR	fresh

water

- level at date / time
- inflow
- complete outflow
- partial outflow

Classification symbols and soil description based on unified classification system. Refer accompanying description sheets for further information.

moisture

D	dry
M	moist
W	wet
Wp	plastic limit
Wl	liquid limit

grain size

vf	very fine
f	fine
m	medium
c	coarse

consistency

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable

density index

VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

material boundaries

- known boundary
- probable boundary
- ?— possible boundary

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Borehole Log

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Pyrmont, NSW 2009
Ph: (02) 9516 0722
Fax: (02) 9516 0744
service@eiaustralia.com.au

BH No: 30-RH11/11
Sheet:
Job No: E25077.E02

Client:
Principal:
Project:
Location:
Started: 21/4/11
Finished:
Logged: AS
Checked:

Equipment: Hand
Diameter:
Slope: -90°
Bearing: --
RL Surface:
Datum:

drilling information					material information					
method	water	samples	sample method / QC	depth (m)	PID reading	material code	material description soil type, particle characteristics or fines plasticity, colour, secondary and minor components	moisture + density/consistency	Odour (Y/N)	well construction
				0.2 0.3	0.2	FILL	Road	D	N	Cap
				0.5 0.6	0.6	FILL	brown	D M	N	Backfill
				1.4 1.5	0.5					
				2.2 2.3	0.4					
				2.7		FILL	with brick pieces			3.5
				2.9 3.0	0.2			D M	N	Backfill
				3.5 3.6	0.4					4.5
				4.2		NS		W	Y	4.6 Saturated odour Sand
				4.8 4.9	0.2					
ASS sample only				6.8 6.9 7.0	0.2	NS		M W	Y	
				7.6			EOH @ 7.6m TOR			7.6

method

AS	auger screw*
AD	auger drill*
RR	roller/tricone
W	washbore
CB	claw or blade bit
HA	hand auger
D	diatube
V	V-bit
T	TC-bit
NMLC	NMLC core
NQ, HQ, PQ	wireline core

*bit shown by suffix e.g. ADV

odour index

HC	hydrocarbon
S	solvent
Su	sulfur

odour strength index

w	weak
m	moderate
s	strong
vs	very strong

weathering

XW	extremely weatherd
HW	highly weathered
MW	moderately weathered
SW	slightly weathered
FR	fresh

water

- level at date / time
- inflow
- complete outflow
- partial outflow

Classification symbols and soil description based on unified classification system. Refer accompanying description sheets for further information.

moisture

D	dry
M	moist
W	wet
Wp	plastic limit
Wl	liquid limit

grain size

vf	very fine
f	fine
m	medium
c	coarse

consistency

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable

density index

VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

material boundaries

- known boundary
- probable boundary
- possible boundary

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Borehole Log

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Pyrmont, NSW 2009
Ph: (02) 9516 0722
Fax: (02) 9516 0744
service@eiaustralia.com.au

BH No: 39 BH 112
Sheet:
Job No: E25077.E02

Client:
Principal:
Project:
Location:
Started: 21/4/21
Finished:
Logged: AS
Checked:

Equipment: Hand Auger
Diameter:
Slope: -90°
Bearing: --
RL Surface:
Datum:

drilling information					material information					
method	water	samples	sample method / QC	depth (m)	PID reading	material code	material description soil type, particle characteristics or fines plasticity, colour, secondary and minor components	moisture + density/consistency	Odour (Y/N)	well construction
						FILL		D	N	
				0.2 0.3	0.5					
							Refusal @ 0.3m on sandstone gravels			

method

AS	auger screw*
AD	auger drill*
RR	roller/tricone
W	washbore
CB	claw or blade bit
HA	hand auger
D	diatube
V	V-bit
T	TC-bit
NMLC	NMLC core
NQ, HQ, PQ	wireline core

*bit shown by suffix e.g. ADV

odour index

HC	hydrocarbon
S	solvent
Su	sulfur

odour strength index

w	weak
m	moderate
s	strong
vs	very strong

weathering

XW	extremely weatherd
HW	highly weathered
MW	moderately weathered
SW	slightly weathered
FR	fresh

water

level at date / time
inflow
complete outflow
partial outflow

Classification symbols and soil description based on unified classification system. Refer accompanying description sheets for further information.

moisture

D	dry
M	moist
W	wet
Wp	plastic limit
Wl	liquid limit

grain size

vf	very fine
f	fine
m	medium
c	coarse

consistency

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable

density index

VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

material boundaries

known boundary
probable boundary
possible boundary

eiaustralia
Contamination | Remediation | Geotechnical

Borehole Log

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Pyrmont, NSW 2009
Ph: (02) 9516 0722
Fax: (02) 9516 0744
service@eiaustralia.com.au

BH No: 32-BH101
Sheet:
Job No: E25077.E02

Client:
Principal:
Project:
Location:
Started: 21/4/21
Finished:
Logged: AS
Checked:

Equipment: hole
Diameter:
Slope: -90°
Bearing: --
RL Surface:
Datum:

drilling information | **material information**

method	water	samples	sample method / QC	depth (m)	PID reading	material code	material description (soil type, particle characteristics or fines plasticity, colour, secondary and minor components)	moisture + density/consistency	Odour (Y/N)	well construction
		ES		0.1	0.6	FILL	SAND: F-C sand with brown with trace red clay	D	N	
		ES		0.2						
						CL	Sandy Silty Clay: F sand, med. Pl clay, red/grey mottled orange	M	N	
		ES		0.5	0.7					
		ES		0.6						
							EOH @ 0.6m TDR			

method
AS auger screw*
AD auger drill*
RR roller/tricone
W washbore
CB claw or blade bit
HA hand auger
D diatube
V V-bit
T TC-bit
NMLC NMLC core
NQ, HQ, PQ wireline core
*bit shown by suffix e.g. ADV

odour index
HC hydrocarbon
S solvent
Su sulfur

odour strength index
w weak
m moderate
s strong
vs very strong

weathering
XW extremely weatherd
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh

water
level at date / time
inflow
complete outflow
partial outflow

Classification symbols and soil description based on unified classification system. Refer accompanying description sheets for further information.

moisture
D dry
M moist
W wet
Wp plastic limit
Wl liquid limit

grain size
vf very fine
f fine
m medium
c coarse

consistency
VS very soft
S soft
F firm
St stiff
VSt very stiff
H hard
Fb friable

density index
VL very loose
L loose
MD medium dense
D dense
VD very dense

material boundaries
known boundary
probable boundary
possible boundary

eiaustralia
Contamination | Remediation | Geotechnical

Borehole Log

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Fax: (02) 9516 0744
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BH No: 32-BH102
Sheet:
Job No: E25077.E02

Client:
Principal:
Project:
Location:
Equipment: ute
Diameter:

Slope: -90°
Bearing: - -

Started: 22/4/21
Finished:
Logged: AB
Checked:
RL Surface:
Datum:

method	water	samples	sample method / QC	depth (m)	PID reading	material code	material description (soil type, particle characteristics or fines plasticity, colour, secondary and minor components)	moisture + density/consistency	Odour (Y/N)	well construction
							Fill: Sandy Gravelly CLAY: F-C sand, F-C gr SA-A, med-low Pl clay - orange brown	D-M	N	
				0.2		F79				
				0.3	0.6					
				0.6						
						N8		D	N	
				0.9						
				1.0	0.6					
				1.4						
							EOH@1.4m TDR			

method
AS auger screw*
AD auger drill*
RR roller/tricone
W washbore
CB claw or blade bit
HA hand auger
D diatube
V V-bit
T TC-bit
NMLC NMLC core
NQ, HQ, PQ wireline core
*bit shown by suffix e.g. ADV

odour index
HC hydrocarbon
S solvent
Su sulfur

odour strength index
w weak
m moderate
s strong
vs very strong

weathering
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh

water
level at date / time
inflow
complete outflow
partial outflow

Classification symbols and soil description based on unified classification system. Refer accompanying description sheets for further information.

moisture
D dry
M moist
W wet
Wp plastic limit
Wl liquid limit

grain size
vf very fine
f fine
m medium
c coarse

consistency
VS very soft
S soft
F firm
St stiff
VSt very stiff
H hard
Fb friable

density index
VL very loose
L loose
MD medium dense
D dense
VD very dense

material boundaries
known boundary
probable boundary
possible boundary

eiaustralia
Contamination | Remediation | Geotechnical

Borehole Log

Suite 6.01, 55 Miller Street,
Pyrmont, NSW 2009
Ph: (02) 9516 0722
Fax: (02) 9516 0744
service@eiaustralia.com.au

BH No: 32-BH103
Sheet:
Job No: E25077.E02

Client:
Principal:
Project:
Location:
Started: 22/4/21
Finished:
Logged: AS
Checked:

Equipment: ute
Diameter:
Slope: -90°
Bearing: --
RL Surface:
Datum:

drilling information					material information					
method	water	samples	sample method / QC	depth (m)	PID reading	material code	material description soil type, particle characteristics or fines plasticity, colour, secondary and minor components	moisture + density/consistency	Odour (Y/N)	well construction
						FSD	Gravelly Sand: F grained, F-C sand, with trace med pl clay, brown	D	N	
				0.3-0.4	0.9					
						FCL		D	N	
				0.9-1.0	1.2					
						MIO	Sandy CLAY: F sand, Med-high Plasticity clay, bluish	M	Y	Very slight sulfur odour
				1.4-1.5	0.6					

method
- AS auger screw*
- AD auger drill*
- RR roller/tricone
- W washbore
- CB claw or blade bit
- HA hand auger
- D diatube
- V V-bit
- T TC-bit
- NMLC NMLC core
- NQ, HQ, PQ wireline core

*bit shown by suffix e.g. ADV

odour index
- HC hydrocarbon
- S solvent
- Su sulfur

odour strength index
- w weak
- m moderate
- s strong
- vs very strong

weathering
- XW extremely weatherd
- HW highly weathered
- MW moderately weathered
- SW slightly weathered
- FR fresh

water
- level at date / time
- inflow
- complete outflow
- partial outflow

Classification symbols and soil description based on unified classification system. Refer accompanying description sheets for further information.

moisture
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

grain size
- vf very fine
- f fine
- m medium
- c coarse

consistency
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable

density index
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

material boundaries
- known boundary
- probable boundary
- possible boundary

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Borehole Log

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BH No: 32-BH104M
Sheet:
Job No: E25077.E02

Client:
Principal:
Project:
Location:
Started: 22/4/21
Finished:
Logged: AS
Checked:
Equipment: Hc
Slope: -90°
RL Surface:
Diameter:
Bearing: --
Datum:

drilling information					material information						
method	water	samples	sample method / QC	depth (m)	PID reading	material code	material description soil type, particle characteristics or fines plasticity, colour, secondary and minor components	moisture + density/consistency	Odour (Y/N)	well construction
			0.2 0.3		0.8	FSI	Silty Sandy CLAY: Fine grained sand, low-med Pl clay	D M	N	Gatic. backfill
				0.7						0.5 bento
						N8		D	N	1.0
				1.0 1.1	0.2					1.1
				1.6						1.6
							Refusal @ 1.6m bedrock suspected			sand

method

AS	auger screw*
AD	auger drill*
RR	roller/tricone
W	washbore
CB	claw or blade bit
HA	hand auger
D	diatube
V	V-bit
T	TC-bit
NMLC	NMLC core
NQ, HQ, PQ	wireline core

*bit shown by suffix e.g. ADV

odour index

HC	hydrocarbon
S	solvent
Su	sulfur

odour strength index

w	weak
m	moderate
s	strong
vs	very strong

weathering

XW	extremely weatherd
HW	highly weathered
MW	moderately weathered
SW	slightly weathered
FR	fresh

water

level at date / time
inflow
complete outflow
partial outflow

Classification symbols and soil description based on unified classification system. Refer accompanying description sheets for further information.

moisture

D	dry
M	moist
W	wet
Wp	plastic limit
Wl	liquid limit

grain size

vf	very fine
f	fine
m	medium
c	coarse

consistency

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable

density index

VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

material boundaries

known boundary
probable boundary
possible boundary

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BH No: 32-BH105
Sheet:
Job No: E25077.E02

Client:
Principal:
Project:
Location:
Started: 22/4/21
Finished:
Logged: AS
Checked:

Equipment: Utc
Diameter:
Slope: -90°
Bearing: --
RL Surface:
Datum:

drilling information					material information					
method	water	samples	sample method / QC	depth (m)	PID reading	material code	material description soil type, particle characteristics or fines plasticity, colour, secondary and minor components	moisture + density/consistency	Odour (Y/N)	well construction
QD2 QT2				0.2	0.3	FILL		D	N	
				0.3						
						NIL	Silty Clay: grey mottled orange, low-med pl.	D M	N	
				0.5						
				0.6	0.3					
				1.0						
						NB		D	N	
				1.2 1.3	0.1					
				2.0			Refusal @ 2.0m Sandstone bedrock			

method

AS	auger screw*
AD	auger drill*
RR	roller/tricone
W	washbore
CB	claw or blade bit
HA	hand auger
D	diatube
V	V-bit
T	TC-bit
NMLC	NMLC core
NQ, HQ, PQ	wireline core

*bit shown by suffix e.g. ADV

odour index

HC	hydrocarbon
S	solvent
Su	sulfur

odour strength index

w	weak
m	moderate
s	strong
vs	very strong

weathering

XW	extremely weatherd
HW	highly weathered
MW	moderately weathered
SW	slightly weathered
FR	fresh

water

level at date / time
inflow
complete outflow
partial outflow

Classification symbols and soil description based on unified classification system. Refer accompanying description sheets for further information.

moisture

D	dry
M	moist
W	wet
Wp	plastic limit
Wl	liquid limit

grain size

vf	very fine
f	fine
m	medium
c	coarse

consistency

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable

density index

VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

material boundaries

known boundary
probable boundary
possible boundary

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Fax: (02) 9516 0744
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BH No: 32-BH106
Sheet:
Job No: E25077.E02

Client:
Principal:
Project:
Location:
Started: 22/4/21
Finished:
Logged: AS
Checked:
Equipment: ute
Slope: -90°
Bearing: --
RL Surface:
Datum:
Diameter:

drilling information					material information					
method	water	samples	sample method / QC	depth (m)	PID reading	material code	material description soil type, particle characteristics or fines plasticity, colour, secondary and minor components	moisture + density/consistency	Odour (Y/N)	well construction
						FILL		D		
		ES		0.2 0.3	0.4			M	N	
		ES		0.9 1.0	1.0					
		ES		1.4 1.5	0.7	FILL	Sandy Clay: F-C sand, high PI clay with trace F-C gravels	M	N	
				1.7						
		ES		1.9 2.0	0.4	NATURAL		M	Y	very slight sulfur odour
							EOH@2.0m			

method

AS	auger screw*
AD	auger drill*
RR	roller/tricone
W	washbore
CB	claw or blade bit
HA	hand auger
D	diatube
V	V-bit
T	TC-bit
NMLC	NMLC core
NQ, HQ, PQ	wireline core

*bit shown by suffix e.g. ADV

odour index

HC	hydrocarbon
S	solvent
Su	sulfur

odour strength index

w	weak
m	moderate
s	strong
vs	very strong

weathering

XW	extremely weatherd
HW	highly weathered
MW	moderately weathered
SW	slightly weathered
FR	fresh

water

level at date / time
inflow
complete outflow
partial outflow

Classification symbols and soil description based on unified classification system. Refer accompanying description sheets for further information.

moisture

D	dry
M	moist
W	wet
Wp	plastic limit
Wl	liquid limit

grain size

vf	very fine
f	fine
m	medium
c	coarse

consistency

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable

density index

VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

material boundaries

known boundary
probable boundary
possible boundary

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Ph: (02) 9516 0722
Fax: (02) 9516 0744
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BH No: 32-BH107A
Sheet:
Job No: E25077.E02

Client:
Principal:
Project:
Location:
Started: 22/4/21
Finished:
Logged: AS
Checked:
Equipment: ute
Diameter:
Slope: -90°
Bearing: --
RL Surface:
Datum:

drilling information | **material information**

method	water	samples	sample method / QC	depth (m)	PID reading	material code	material description (soil type, particle characteristics or fines plasticity, colour, secondary and minor components)	moisture + density/consistency	Odour (Y/N)	well construction
				0.2 0.3	0.5	FILL		D	N	Gatic Backfill 0.5
				0.8						Bento
				1.0 1.1	0.4	NIL		D M	N	1.0 1.1
				1.7		NB				Sand
				2.0 2.1	0.6			D	N	2.0
QD3 QT3							EOH @ 2.1m - Refusal Sandstone bedrock			

method

AS	auger screw*
AD	auger drill*
RR	roller/tricone
W	washbore
CB	claw or blade bit
HA	hand auger
D	diatube
V	V-bit
T	TC-bit
NMLC	NMLC core
NQ, HQ, PQ	wireline core

*bit shown by suffix e.g. ADV

odour index

HC	hydrocarbon
S	solvent
Su	sulfur

odour strength index

w	weak
m	moderate
s	strong
vs	very strong

weathering

XW	extremely weatherd
HW	highly weathered
MW	moderately weathered
SW	slightly weathered
FR	fresh

water

level at date / time
inflow
complete outflow
partial outflow

Classification symbols and soil description based on unified classification system. Refer accompanying description sheets for further information.

moisture

D	dry
M	moist
W	wet
Wp	plastic limit
Wl	liquid limit

grain size

vf	very fine
f	fine
m	medium
c	coarse

consistency

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable

density index

VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

material boundaries

known boundary
probable boundary
possible boundary

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Borehole Log

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Fax: (02) 9516 0744
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BH No: b12-BH101
Sheet:
Job No: E25077.E02

Client:
Principal:
Project:
Location:

Started: 22/4/21
Finished:
Logged: AS
Checked:

Equipment: dtc
Diameter:

Slope: -90°
Bearing: --

RL Surface:
Datum:

drilling information					material information						
method	water	samples	sample method / QC	depth (m)	PID reading	material code	material description soil type, particle characteristics or fines plasticity, colour, secondary and minor components	moisture + density/consistency	Odour (Y/N)	well construction
				0.0			Asphalt			
							Concrete			
				0.2						
				0.3	0.2	FB1	Fill: Sandy Gravel. F-C sand, F-C gravels with 250mm diameter	D	N	
				0.4			Basalt gravels			
				0.6	0.3	NT		D/M	N	
				0.7						
							EOH @ 0.7m TDR			

method
AS auger screw*
AD auger drill*
RR roller/tricone
W washbore
CB claw or blade bit
HA hand auger
D diatube
V V-bit
T TC-bit
NMLC NMLC core
NQ, HQ, PQ wireline core
*bit shown by suffix e.g. ADV

odour index
HC hydrocarbon
S solvent
Su sulfur

odour strength index
w weak
m moderate
s strong
vs very strong

weathering
XW extremely weatherd
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh

water
level at date / time
inflow
complete outflow
partial outflow

Classification symbols and soil description based on unified classification system. Refer accompanying description sheets for further information.

moisture
D dry
M moist
W wet
Wp plastic limit
Wl liquid limit

grain size
vf very fine
f fine
m medium
c coarse

consistency
VS very soft
S soft
F firm
St stiff
VSt very stiff
H hard
Fb friable

density index
VL very loose
L loose
MD medium dense
D dense
VD very dense

material boundaries
known boundary
probable boundary
possible boundary

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Borehole Log

Suite 6.01, 55 Miller Street,
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Ph: (02) 9516 0722
Fax: (02) 9516 0744
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BH No: 112-BH102
Sheet:
Job No: E25077.E02

Client:
Principal:
Project:
Location:
Started: 22/4/21
Finished:
Logged: AS
Checked:

Equipment: UTC
Diameter:
Slope: -90°
Bearing: --
RL Surface:
Datum:

drilling information					material information					
method	water	samples	sample method / QC	depth (m)	PID reading	material code	material description soil type, particle characteristics or fines plasticity, colour, secondary and minor components	moisture + density/consistency	Odour (Y/N)	well construction
				0.04			Asphalt			
				0.2			concrete			
				0.4	0.4	F31		D	N	
				0.5		N7		D	N	
				0.7	0.2			M		
				0.8						
				0.9						
							EOH@0.9m TDR			

Q04
QT4

method

AS	auger screw*
AD	auger drill*
RR	roller/tricone
W	washbore
CB	claw or blade bit
HA	hand auger
D	diatube
V	V-bit
T	TC-bit
NMLC	NMLC core
NQ, HQ, PQ	wireline core

*bit shown by suffix e.g. ADV

odour index

HC	hydrocarbon
S	solvent
Su	sulfur

odour strength index

w	weak
m	moderate
s	strong
vs	very strong

weathering

XW	extremely weatherd
HW	highly weathered
MW	moderately weathered
SW	slightly weathered
FR	fresh

water

level at date / time
inflow
complete outflow
partial outflow

Classification symbols and soil description based on unified classification system. Refer accompanying description sheets for further information.

moisture

D	dry
M	moist
W	wet
Wp	plastic limit
Wl	liquid limit

grain size

vf	very fine
f	fine
m	medium
c	coarse

consistency

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable

density index

VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

material boundaries

known boundary
probable boundary
possible boundary

eiaustralia
Contamination | Remediation | Geotechnical

Borehole Log

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Fax: (02) 9516 0744
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BH No: 112-BH103
Sheet:
Job No: E25077.E02

Client:
Principal:
Project:
Location:
Started: 21/4/21
Finished:
Logged: AJ
Checked:

Equipment: ute
Diameter:
Slope: -90°
Bearing: --
RL Surface:
Datum:

drilling information					material information					
method	water	samples	sample method / QC	depth (m)	PID reading	material code	material description soil type, particle characteristics or fines plasticity, colour, secondary and minor components	moisture + density/consistency	Odour (Y/N)	well construction
				0.04			Asphalt			
				0.2		FCS	Gravelly SAND: F-C sand, F-C gravel, dark brown	D	N	
				0.3	0.8					
				0.4						
				0.5						
				0.6	0.3	NT		D	N	
							EOH @ 0.6m TDR			

method

AS	auger screw*
AD	auger drill*
RR	roller/tricone
W	washbore
CB	claw or blade bit
HA	hand auger
D	diatube
V	V-bit
T	TC-bit
NMLC	NMLC core
NQ, HQ, PQ	wireline core

*bit shown by suffix e.g. ADV

odour index

HC	hydrocarbon
S	solvent
Su	sulfur

odour strength index

w	weak
m	moderate
s	strong
vs	very strong

weathering

XW	extremely weatherd
HW	highly weathered
MW	moderately weathered
SW	slightly weathered
FR	fresh

water

level at date / time
inflow
complete outflow
partial outflow

Classification symbols and soil description based on unified classification system. Refer accompanying description sheets for further information.

moisture

D	dry
M	moist
W	wet
Wp	plastic limit
Wl	liquid limit

grain size

vf	very fine
f	fine
m	medium
c	coarse

consistency

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable

density index

VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

material boundaries

known boundary
probable boundary
possible boundary

eiaustralia
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Borehole Log

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BH No: 112-BH104
Sheet:
Job No: E25077.E02

Client:
Principal:
Project:
Location:
Started: 21/4/21
Finished:
Logged: AS
Checked:

Equipment: Hand
Diameter:
Slope: -90°
Bearing: --
RL Surface:
Datum:

drilling information					material information					
method	water	samples	sample method / QC	depth (m)	PID reading	material code	material description soil type, particle characteristics or fines plasticity, colour, secondary and minor components	moisture + density/consistency	Odour (Y/N)	well construction
				0.04			Asphalt			
						F25				
		1		0.2 0.3	1.2			D	N	
				0.5						
				0.7	0.7	NA		D M	N	
		2		0.8						
							EOH@0.8m TOR			

method
AS auger screw*
AD auger drill*
RR roller/tricone
W washbore
CB claw or blade bit
HA hand auger
D diatube
V V-bit
T TC-bit
NMLC NMLC core
NQ, HQ, PQ wireline core
*bit shown by suffix e.g. ADV

odour index
HC hydrocarbon
S solvent
Su sulfur

odour strength index
w weak
m moderate
s strong
vs very strong

weathering
XW extremely weatherd
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh

water
level at date / time
inflow
complete outflow
partial outflow

Classification symbols and soil description based on unified classification system. Refer accompanying description sheets for further information.

moisture
D dry
M moist
W wet
Wp plastic limit
Wl liquid limit

grain size
vf very fine
f fine
m medium
c coarse

consistency
VS very soft
S soft
F firm
St stiff
VSt very stiff
H hard
Fb friable

density index
VL very loose
L loose
MD medium dense
D dense
VD very dense

material boundaries
known boundary
probable boundary
possible boundary

eiaustralia
Contamination | Remediation | Geotechnical

Borehole Log

Suite 6.01, 55 Miller Street,
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Ph: (02) 9516 0722
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BH No: 112-BH105
Sheet:
Job No: E25077.E02

Client:
Principal:
Project:
Location:

Started: 21/4/21
Finished:
Logged: AS
Checked:

Equipment: ute
Diameter:

Slope: -90°
Bearing: --

RL Surface:
Datum:

drilling information					material information					
method	water	samples	sample method / QC	depth (m)	PID reading	material code	material description soil type, particle characteristics or fines plasticity, colour, secondary and minor components	moisture + density/consistency	Odour (Y/N)	well construction
				0.04			Asphalt			
						FCT				
				0.2	0.9			D	N	
				0.3						
				0.4						
								D		
						NT		M	N	
				0.6	0.6					
				0.7						
							EOH @ 0.7m TDR			

method

AS	auger screw*
AD	auger drill*
RR	roller/tricone
W	washbore
CB	claw or blade bit
HA	hand auger
D	diatube
V	V-bit
T	TC-bit
NMLC	NMLC core
NQ, HQ, PQ	wireline core

*bit shown by suffix e.g. ADV

odour index

HC	hydrocarbon
S	solvent
Su	sulfur

odour strength index

w	weak
m	moderate
s	strong
vs	very strong

weathering

XW	extremely weatherd
HW	highly weathered
MW	moderately weathered
SW	slightly weathered
FR	fresh

water

level at date / time
inflow
complete outflow
partial outflow

Classification symbols and soil description based on unified classification system. Refer accompanying description sheets for further information.

moisture

D	dry
M	moist
W	wet
Wp	plastic limit
Wl	liquid limit

grain size

vf	very fine
f	fine
m	medium
c	coarse

consistency

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable

density index

VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

material boundaries

known boundary
probable boundary
possible boundary

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Contamination | Remediation | Geotechnical

Borehole Log

Suite 6.01, 55 Miller Street,
Pyrmont, NSW 2009
Ph: (02) 9516 0722
Fax: (02) 9516 0744
service@eiaustralia.com.au

BH No: 112-BH106M
Sheet:
Job No: E25077.E02

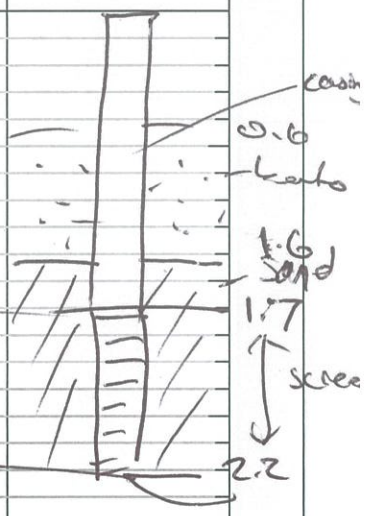
Client:
Principal:
Project:
Location:
Started: 21/4/21
Finished:
Logged: AS
Checked:

Equipment: ute
Diameter:
Slope: -90°
Bearing: --
RL Surface:
Datum:

drilling information					material information						
method	water	samples	sample method / QC	depth (m)	PID reading	material code	material description soil type, particle characteristics or fines plasticity, colour, secondary and minor components	moisture + density/consistency	Odour (Y/N)	well construction
		0.2 0.3			1.1	F2S		D	N	
		0.9 1.0			1.0					
				1.3						
				1.4		F2S	with trace clay, dark brown	D M	N	
				1.5	1.1					
				1.6		F17	Natural: sandstone	D	N	
				1.9	0.7	(likely natural)				
				2.0		New				
				2.2		NB				

Refusal @ 2.2m on sandstone bedrock

Well dry on developing



method

AS	auger screw*
AD	auger drill*
RR	roller/tricone
W	washbore
CB	claw or blade bit
HA	hand auger
D	diatube
V	V-bit
T	TC-bit
NMLC	NMLC core
NQ, HQ, PQ	wireline core

*bit shown by suffix e.g. ADV

odour index

HC	hydrocarbon
S	solvent
Su	sulfur

odour strength index

w	weak
m	moderate
s	strong
vs	very strong

weathering

XW	extremely weatherd
HW	highly weathered
MW	moderately weathered
SW	slightly weathered
FR	fresh

water

level at date / time
inflow
complete outflow
partial outflow

Classification symbols and soil description based on unified classification system. Refer accompanying description sheets for further information.

moisture

D	dry
M	moist
W	wet
Wp	plastic limit
Wl	liquid limit

grain size

vf	very fine
f	fine
m	medium
c	coarse

consistency

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable

density index

VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

material boundaries

known boundary
probable boundary
possible boundary

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Borehole Log

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BH No: 112-BH107
Sheet:
Job No: E25077.E02

Client:
Principal:
Project:
Location:
Started: 21/4/21
Finished:
Logged: AS
Checked:

Equipment: ute
Diameter:
Slope: -90°
Bearing: --
RL Surface:
Datum:

drilling information					material information					
method	water	samples	sample method / QC	depth (m)	PID reading	material code	material description soil type, particle characteristics or fines plasticity, colour, secondary and minor components	moisture + density/consistency	Odour (Y/N)	well construction
				0.0			Asphalt			
				0.2		FCS	with clay brown med-Pl	D m	N	
				0.3	0.9					
				0.7						
				0.9	0.6	NT	odour: orange mottled grey	D m	N	
				1.2						
							EOH@1.2m TDR			

method
AS auger screw*
AD auger drill*
RR roller/tricone
W washbore
CB claw or blade bit
HA hand auger
D diatube
V V-bit
T TC-bit
NMLC NMLC core
NQ, HQ, PQ wireline core
*bit shown by suffix e.g. ADV

odour index
HC hydrocarbon
S solvent
Su sulfur

odour strength index
w weak
m moderate
s strong
vs very strong

weathering
XW extremely weatherd
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh

water
level at date / time
inflow
complete outflow
partial outflow

Classification symbols and soil description based on unified classification system. Refer accompanying description sheets for further information.

moisture
D dry
M moist
W wet
Wp plastic limit
Wl liquid limit

grain size
vf very fine
f fine
m medium
c coarse

consistency
VS very soft
S soft
F firm
St stiff
VSt very stiff
H hard
Fb friable

density index
VL very loose
L loose
MD medium dense
D dense
VD very dense

material boundaries
known boundary
probable boundary
possible boundary

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Borehole Log

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Ph: (02) 9516 0722
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BH No: 112 - BH108
Sheet:
Job No: E25077.E02

Client:
Principal:
Project:
Location:
Started: 21/4/21
Finished:
Logged: AS
Checked:

Equipment: ute
Diameter:
Slope: -90°
Bearing: --
RL Surface:
Datum:

drilling information					material information					
method	water	samples	sample method / QC	depth (m)	PID reading	material code	material description soil type, particle characteristics or fines plasticity, colour, secondary and minor components	moisture + density/consistency	Odour (Y/N)	well construction
				0.04			Asphalt			
		E		0.2	0.8	F26		D	N	
		E		0.3						
						F27		D M	N	
		II		0.7 0.8	0.7					
				0.9		N7	brown mottled orange	D M	N	
		E		1.1 1.2	0.4					
							EOH @ 1.2m TDR Bk 004			

method

AS	auger screw*
AD	auger drill*
RR	roller/tricone
W	washbore
CB	claw or blade bit
HA	hand auger
D	diatube
V	V-bit
T	TC-bit
NMLC	NMLC core
NQ, HQ, PQ	wireline core

*bit shown by suffix e.g. ADV

odour index

HC	hydrocarbon
S	solvent
Su	sulfur

odour strength index

w	weak
m	moderate
s	strong
vs	very strong

weathering

XW	extremely weatherd
HW	highly weathered
MW	moderately weathered
SW	slightly weathered
FR	fresh

water

level at date / time
inflow
complete outflow
partial outflow

Classification symbols and soil description based on unified classification system. Refer accompanying description sheets for further information.

moisture

D	dry
M	moist
W	wet
Wp	plastic limit
Wl	liquid limit

grain size

vf	very fine
f	fine
m	medium
c	coarse

consistency

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable

density index

VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

material boundaries

known boundary
probable boundary
possible boundary

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Borehole Log

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Fax: (02) 9516 0744
service@eiaustralia.com.au

BH No: 1.2-BH 109
Sheet:
Job No: E25077.E02

Client:	Started: 21/4/21
Principal:	Finished:
Project:	Logged: AS
Location:	Checked:
Equipment: Ute	Slope: -90° / RL Surface:
Diameter:	Bearing: -- / Datum:

method	water	samples	sample method / QC	depth (m)	PID reading	material code	material description (soil type, particle characteristics or fines plasticity, colour, secondary and minor components)	moisture + density/consistency	Odour (Y/N)	well construction
				0.04			Asphalt.			
					0.3	F26	Stabilised DGB : Sandy Gravel: F-C sand, F-C gravels light grey stabilised with lime	D	N	
		⊠		0.3 – 0.4	0.8					
		⊠		0.7 – 0.8	0.7	F27	Gravelly CLAY: F-C gravels A-SA, med-low pl clay, ~~gre bro~~, brown mottled grey.	D–M	N	
		⊠		1.4 – 1.5	1.0					
		~~⊠~~		~~1.9 – 2.0~~						
				1.7						
		⊠		1.9 – 2.0	0.4	NT	Grey mottled orange	D–M	N	
							EOH @ 2.0m TDR			

method		odour index		weathering	
AS	auger screw*	HC	hydrocarbon	XW	extremely weatherd
AD	auger drill*	S	solvent	HW	highly weathered
RR	roller/tricone	Su	sulfur	MW	moderately weathered
W	washbore			SW	slightly weathered
CB	claw or blade bit			FR	fresh
HA	hand auger				
D	diatube	odour strength index		water	
V	V-bit	w	weak		level at date / time
T	TC-bit	m	moderate		inflow
NMLC	NMLC core	s	strong		complete outflow
NQ, HQ, PQ	wireline core	vs	very strong		partial outflow
*bit shown by suffix e.g. ADV					

Classification symbols and soil description based on unified classification system. Refer accompanying description sheets for further information.

moisture		grain size	
D	dry	vf	very fine
M	moist	f	fine
W	wet	m	medium
Wp	plastic limit	c	coarse
Wl	liquid limit		

consistency		density index	
VS	very soft	VL	very loose
S	soft	L	loose
F	firm	MD	medium dense
St	stiff	D	dense
VSt	very stiff	VD	very dense
H	hard		
Fb	friable		

material boundaries
——— known boundary
— — — probable boundary
—?— possible boundary

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Borehole Log

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Fax: (02) 9516 0744
service@eiaustralia.com.au

BH No: E112-BH110M
Sheet:
Job No: E25077.E02

Client:
Principal:
Project:
Location:
Started:
Finished: 21/4/21
Logged: AS
Checked:

Equipment: utc
Diameter:
Slope: -90°
Bearing: --
RL Surface:
Datum:

drilling information					material information					
method	water	samples	sample method / QC	depth (m)	PID reading	material code	material description soil type, particle characteristics or fines plasticity, colour, secondary and minor components	moisture + density/consistency	Odour (Y/N)	well construction
				0.2			concrete			Gravelly fill 0.2
				0.3	0.7	FCS	with clay brown, med PI	W	N	Sandy
				0.5				moisture due to cooling		
				0.6		NT	colour: Grey mottled orange			0.8 sand
				0.7				D	N	
				0.8				M		0.9
				0.9		FIT	Natural	D	N	
				1.3	0.7	Natural				
				1.4						1.4
							refusal @ 1.4m bedrock sandstone			
							well dry on development			

method

AS	auger screw*
AD	auger drill*
RR	roller/tricone
W	washbore
CB	claw or blade bit
HA	hand auger
D	diatube
V	V-bit
T	TC-bit
NMLC	NMLC core
NQ, HQ, PQ	wireline core

*bit shown by suffix e.g. ADV

odour index

HC	hydrocarbon
S	solvent
Su	sulfur

odour strength index

w	weak
m	moderate
s	strong
vs	very strong

weathering

XW	extremely weatherd
HW	highly weathered
MW	moderately weathered
SW	slightly weathered
FR	fresh

water

- level at date / time
- inflow
- complete outflow
- partial outflow

Classification symbols and soil description based on unified classification system. Refer accompanying description sheets for further information.

moisture

D	dry
M	moist
W	wet
Wp	plastic limit
Wl	liquid limit

grain size

vf	very fine
f	fine
m	medium
c	coarse

consistency

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable

density index

VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

material boundaries

- known boundary
- probable boundary
- ?— possible boundary

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Borehole Log

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Fax: (02) 9516 0744
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BH No: 112-13H111
Sheet:
Job No: E25077.E02

Client:
Principal:
Project:
Location:
Started: 21/4/21
Finished:
Logged: AS
Checked:

Equipment: Ute
Diameter:
Slope: -90°
Bearing: --
RL Surface:
Datum:

drilling information					material information					
method	water	samples	sample method / QC	depth (m)	PID reading	material code	material description soil type, particle characteristics or fines plasticity, colour, secondary and minor components	moisture + density/consistency	Odour (Y/N)	well construction
				0.2	0.3	FILL		D	N	
				0.3						
				0.5	0.4	FILL	~~with clay~~	D	N	
				0.7		FILL		M		
				0.9						
						NB	Gravelly SAND: Sand fine grained by Auger. F-C sand, F-C SR gravels. light orange/grey	D	N	
				1.1 1.2	0.3					
							EOH@1.2m TDR			

method

AS	auger screw*
AD	auger drill*
RR	roller/tricone
W	washbore
CB	claw or blade bit
HA	hand auger
D	diatube
V	V-bit
T	TC-bit
NMLC	NMLC core
NQ, HQ, PQ	wireline core

*bit shown by suffix e.g. ADV

odour index

HC	hydrocarbon
S	solvent
Su	sulfur

odour strength index

w	weak
m	moderate
s	strong
vs	very strong

weathering

XW	extremely weatherd
HW	highly weathered
MW	moderately weathered
SW	slightly weathered
FR	fresh

water

level at date / time
inflow
complete outflow
partial outflow

Classification symbols and soil description based on unified classification system. Refer accompanying description sheets for further information.

moisture

D	dry
M	moist
W	wet
Wp	plastic limit
Wl	liquid limit

grain size

vf	very fine
f	fine
m	medium
c	coarse

consistency

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable

density index

VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

material boundaries

known boundary
probable boundary
possible boundary

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Borehole Log

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BH No: 112 – BH112M
Sheet:
Job No: E25077.E02

Client:
Principal:
Project:
Location:
Started: 22/4/21
Finished:
Logged: AC
Checked:

Equipment: Hand
Diameter:
Slope: -90°
Bearing: --
RL Surface:
Datum:

drilling information					material information					
method	water	samples	sample method / QC	depth (m)	PID reading	material code	material description soil type, particle characteristics or fines plasticity, colour, secondary and minor components	moisture + density/consistency	Odour (Y/N)	well construction
						FILL	Fill: Top soil: gravelly SAND: F SR gravels, F-C sand, with silt. dark brown	D	N	
				0.4	0.4					
				0.5						
				0.6						
						NS		D	N	
				0.9	0.2					
				1.0						
				1.5						
							Refusal @ 1.5m sandstone bedrock			

method

AS	auger screw*
AD	auger drill*
RR	roller/tricone
W	washbore
CB	claw or blade bit
HA	hand auger
D	diatube
V	V-bit
T	TC-bit
NMLC	NMLC core
NQ, HQ, PQ	wireline core

*bit shown by suffix e.g. ADV

odour index

HC	hydrocarbon
S	solvent
Su	sulfur

odour strength index

w	weak
m	moderate
s	strong
vs	very strong

weathering

XW	extremely weatherd
HW	highly weathered
MW	moderately weathered
SW	slightly weathered
FR	fresh

water

level at date / time
inflow
complete outflow
partial outflow

Classification symbols and soil description based on unified classification system. Refer accompanying description sheets for further information.

moisture

D	dry
M	moist
W	wet
Wp	plastic limit
Wl	liquid limit

grain size

vf	very fine
f	fine
m	medium
c	coarse

consistency

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable

density index

VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

material boundaries

known boundary
probable boundary
possible boundary

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Fax: (02) 9516 0744
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BH No: 112-BH113M
Sheet:
Job No: E25077.E02

Client:
Principal:
Project:
Location:
Started: 22/4/24
Finished:
Logged: AS
Checked:

Equipment: Hand
Diameter:
Slope: -90°
Bearing: --
RL Surface:
Datum:

drilling information					material information					
method	water	samples	sample method / QC	depth (m)	PID reading	material code	material description soil type, particle characteristics or fines plasticity, colour, secondary and minor components	moisture + density/consistency	Odour (Y/N)	well construction
				0.2	0.2	FILL		D	N	Gatic backfill 0.7
				0.6				D	N	bentonite 1.2
				0.8 0.9	0.3	NS				1.3 Screen
				3.0 3.1 3.2	0.4	NS	Crushed Shale (Engineered) into silty sandy Shale gravelly SAND, F-C sand, F-M crushed shale gravels SA-A-grey	D	N	SCR
				4.3			Refusal @ 4.3m bedrock Shale			4.3

method
AS auger screw*
AD auger drill*
RR roller/tricone
W washbore
CB claw or blade bit
HA hand auger
D diatube
V V-bit
T TC-bit
NMLC NMLC core
NQ, HQ, PQ wireline core
*bit shown by suffix e.g. ADV

odour index
HC hydrocarbon
S solvent
Su sulfur

odour strength index
w weak
m moderate
s strong
vs very strong

weathering
XW extremely weatherd
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh

water
level at date / time
inflow
complete outflow
partial outflow

Classification symbols and soil description based on unified classification system. Refer accompanying description sheets for further information.

moisture
D dry
M moist
W wet
Wp plastic limit
Wl liquid limit

grain size
vf very fine
f fine
m medium
c coarse

consistency
VS very soft
S soft
F firm
St stiff
VSt very stiff
H hard
Fb friable

density index
VL very loose
L loose
MD medium dense
D dense
VD very dense

material boundaries
known boundary
probable boundary
possible boundary

Daily Inspection / Work Summary Card - Remediation & Validation Form

OP 005a (Rev 2)

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EI Australia
Suite 6.01, 55 Miller Street
PYRMONT, NSW, 2009
ABN 42 909 129 957
E service@eiaustralia.com.au
W www.eiaustralia.com.au
T 02 9516 0722

Project Number:	E25077	Engineer Name:	AS	Page:	1 of 1
Date:	30/4/24	Time ON Site:	7:00		
Travel Time:	45mins	Time OFF Site:	5:00		

Site Address/Location: Melrose Park

Climatic Conditions: Sunny/overcast

Completed Works:

CME: 14 total, 8 sampled, 1 PFAS only (little water) 5 dry

82 Hughes Ave: Previously installed wells (WSP) EI-GW-MW03, EI-GW-MW01
EI installed: GW-82-BH102

30 Waratah St: GW-30-BH102M, GW-30-BH106M, GW-30-BH110M, GW-30-BH111M

32 Waratah St: GW-BH104M (PFAS only sampled not enough water column)

112 Wharf Rd: ~~GW-112-BH106M, BH107M, BH110M, BH112M~~ GW-112-BH113M

Dry: 112-BH106M, ~~BH107M~~, BH110M, BH112M 32-BH107M 82-BH101M

Comments / Issues / Conclusions / Further Testing Required / Actions to be Undertaken / Timing of Actions:

32- GW-BH104M: only had 0.22m of water column - only enough sample for PFAS

Reuseable bailer used instead of stainless steel bailer at 30-BH111M due to stainless steel bailer getting stuck at ~3.0m

QA/QC: GW-QD1 & GW-QT1 taken at 30-BH110M
Rinsate blank & rinsate prepared after completing 30-BH110M
GWQR1 & GW-QRB1

Signed by: A.S

Map: PS110826_GIS_003_A2	Author: David.Naiken
Date: 12/09/2018	Approved by: Clement.Joyner

0 10 20 m
1:2,000
Coordinate system: GDA 1994 MGA Zone 56
Scale ratio correct when printed at A4

wsp

Detailed Site Investigation
82 Hughes Avenue, Ermington NSW
Figure 3
Sample Location Plan

WATER SAMPLING FIELD SHEET

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Site Address:	82 Hughes	Job Number:	E25077
Client:	Holdmark	Date:	30-Apr-21
Field Staff:	AS	Sampling Location ID	GW-82-BH101-1
Well Location:		Round No:	1

MEDIUM ☒Groundwater ☐Surface Water ☐Stormwater ☐Other:

SAMPLING POINT INFO

Well Installation Date:	20/4/21	Stickup (m):	-0.11 (+ above ground - below ground)
Initial Well Depth (mbgl):	2.0	Screen Interval (mBTOC):	1-5-2.0
Previous Sampling Date:	N/A	Previous SWL (mBTOC):	dry

PID READINGS

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

PRE PURGE

Total Well Depth (mbgl):	1.92	Well Head Condition:	Good
SWL (mbtoc):	dry	Water Column (m):	0m

PHASE SEPARATED HYDROCARBONS (PSH)

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

PURGE AND SAMPLE

Sampling Method ☐Bladder ☐Peristaltic ☐Submersible ☐Other:

Depth of Pump Inlet:		Fill Timer:	
Pump Pressure Regulator (psi):		Discharge Timer:	
Weather Conditions:		Cycle:	
Pump on time:		Pump off time:	

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.)
Stabilisation range: 3 consecutive readings			±0.2°C	±3%	±20mV	±10%	±0.2	

OTHER COMMENTS/OBSERVATIONS:

Dry No samples

SIGNATURE:

WATER SAMPLING FIELD SHEET

eiaustralia

Site Address:	82 Hughes	Job Number:	E25077
Client:	Holdmark	Date:	30-Apr-21
Field Staff:	AS	Sampling Location ID	GW-82-BH102-1
Well Location:		Round No:	1

MEDIUM ☒Groundwater ☐Surface Water ☐Stormwater ☐Other:

SAMPLING POINT INFO

Well Installation Date:	20/4/21	Stickup (m):	-0.05 (+ above ground - below ground)
Initial Well Depth (mbgl):	5.8	Screen Interval (mBTOC):	3.8-5.8
Previous Sampling Date:		Previous SWL (mBTOC):	

PID READINGS

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

PRE PURGE

Total Well Depth (mbgl):	5.83	Well Head Condition:	Good
SWL (mbtoc):	~~4.10~~ 4.07	Water Column (m):	1.76

PHASE SEPARATED HYDROCARBONS (PSH)

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

PURGE AND SAMPLE

Sampling Method ☒Bladder ☐Peristaltic ☐Submersible ☐Other:

Depth of Pump Inlet:	4.95	Fill Timer:	10
Pump Pressure Regulator (psi):	20	Discharge Timer:	5
Weather Conditions:	Sunny	Cycle:	CPM 4
Pump on time:	10:12	Pump off time:	10:38

WATER QUALITY PARAMETERS

Probe Make and Model:	WQM 006
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.)
10:15	0.5	4.27	19.69	3121	105.8	0	5.66	brown/grey, medium, no, no
10:17	1.0	4.36	19.87	3118	110.2	0.97	5.61	-- -- -- --
10:19	1.5	4.48	19.92	3099	111.9	0.56	5.56	-- -- -- --
10:21	2.0	4.56	20.03	3084	109.4	0.48	5.52	-- -- -- --
10:23	2.5	4.60	20.06	3077	105.5	0.48	5.49	-- -- -- --
Stabilisation range: 3 consecutive readings			±0.2°C	±3%	±20mV	±10%	±0.2	

OTHER COMMENTS/OBSERVATIONS:

SIGNATURE:

WATER SAMPLING FIELD SHEET

eiaustralia

Site Address:	82 Hughes	Job Number:	E25077
Client:	Holdmark	Date:	30-Apr-21
Field Staff:	AS	Sampling Location ID	Ei-MW01-1
Well Location:		Round No:	1

MEDIUM ☑Groundwater ☐Surface Water ☐Stormwater ☐Other:

SAMPLING POINT INFO

Well Installation Date:		Stickup (m):	-0.12 (+ above ground - below ground)
Initial Well Depth (mbgl):		Screen Interval (mBTOC):	
Previous Sampling Date:		Previous SWL (mBTOC):	

PID READINGS

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

PRE PURGE

Total Well Depth (mbgl):	5.40	Well Head Condition:	Closed
SWL (mbtoc):	~~4.30~~ 1.25	Water Column (m):	4.15

PHASE SEPARATED HYDROCARBONS (PSH)

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

PURGE AND SAMPLE

Sampling Method ☑Bladder ☐Peristaltic ☐Submersible ☐Other:

Depth of Pump Inlet:	4.50	Fill Timer:	10s
Pump Pressure Regulator (psi):	20	Discharge Timer:	5s
Weather Conditions:	Sunny	Cycle:	CPM4
Pump on time:	11:10	Pump off time:	11:27

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.)
11:13	0.5	1.05	19.31	1622	50.7	0.63	6.23	dark brown/grey, high, no, no
11:15	1.0	1.09	19.03	476	35.6	1.04	6.75	-- -- -- --
11:17	1.5	1.12	18.99	646	33.0	1.12	6.72	-- -- -- --
11:19	2.0	1.15	19.02	664	45.6	0.93	6.64	-- -- -- --
Stabilisation range: 3 consecutive readings			±0.2°C	±3%	±20mV	±10%	±0.2	

OTHER COMMENTS/OBSERVATIONS:

Well not installed by Ei

SIGNATURE:

WATER SAMPLING FIELD SHEET

eiaustralia

Site Address:	82 Hughes	Job Number:	E25077
Client:	Holdmark	Date:	30-Apr-21
Field Staff:	AS	Sampling Location ID	Ei-GW-MW03-1
Well Location:		Round No:	1

MEDIUM ☒Groundwater ☐Surface Water ☐Stormwater ☐Other:

SAMPLING POINT INFO

Well Installation Date:	Stickup (m): -0.03 (+ above ground - below ground)
Initial Well Depth (mbgl):	Screen Interval (mBTOC):
Previous Sampling Date:	Previous SWL (mBTOC):

PID READINGS

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

PRE PURGE

Total Well Depth (mbgl): 8.73	Well Head Condition: Good
SWL (mbtoc): 3.83	Water Column (m): 4.90m

PHASE SEPARATED HYDROCARBONS (PSH)

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

PURGE AND SAMPLE

Sampling Method ☒Bladder ☐Peristaltic ☐Submersible ☐Other:

Depth of Pump Inlet: 7.23	Fill Timer: 10
Pump Pressure Regulator (psi): 20	Discharge Timer: 5
Weather Conditions: overcast	Cycle: CPM4
Pump on time: 9:20	Pump off time: 9:45

WATER QUALITY PARAMETERS

Probe Make and Model: WQM 006 — 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.)
9:24	0.5	3.14	~~5.37~~ 19.68	2173	120.2	0	5.37	brown, high, no, no
9:26	1.0	3.18	~~5.10~~ 19.68	4771	110.2	0	5.10	-- --
9:28	1.5	3.25	19.76	4435	111.1	2.59	4.93	-- --
9:30	2.0	3.30	19.90	4244	104.0	1.08	4.83	-- --
9:32	2.5	3.34	19.93	4137	93.6	0.81	4.77	-- --
9:34	3.0	3.38	20.01	4061	82.3	0.66	4.72	
9:36	3.5	3.41	20.07	3942	74.4	0.62	4.68	
Stabilisation range: 3 consecutive readings			±0.2°C	±3%	±20mV	±10%	±0.2	

OTHER COMMENTS/OBSERVATIONS:

Well not installed by Ei

SIGNATURE:

WATER SAMPLING FIELD SHEET

eiaustralia

Site Address:	30 Waratah	Job Number:	E25077
Client:	Holdmark	Date:	30-Apr-21
Field Staff:	AS	Sampling Location ID	GW-30-BH102M
Well Location:	Driveway	Round No:	1

MEDIUM ☑Groundwater ☐Surface Water ☐Stormwater ☐Other:

SAMPLING POINT INFO

Well Installation Date:	20/4/21	Stickup (m):	-0.13 (+ above ground - below ground)
Initial Well Depth (mbgl):	4.55	Screen Interval (mBTOC):	1.55-4.55
Previous Sampling Date:		Previous SWL (mBTOC):	

PID READINGS

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

PRE PURGE

Total Well Depth (mbgl):	4.46	Well Head Condition:	Good
SWL (mbtoc):	2.32	Water Column (m):	

PHASE SEPARATED HYDROCARBONS (PSH)

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

PURGE AND SAMPLE

Sampling Method ☑Bladder ☐Peristaltic ☐Submersible ☐Other:

Depth of Pump Inlet:	4.09 - max depth	Fill Timer:	10
Pump Pressure Regulator (psi):	30	Discharge Timer:	5
Weather Conditions:	Sunny	Cycle:	CBM4
Pump on time:	4:16	Pump off time:	4:40

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.)
4:13	0.5	2.89	21.31	1628	20.6	0.50	6.31	brown, high, no, no
4:20	1.0	2.89	21.04	1686	52.9	0.34	6.14	-- --
4:27	1.5	2.94	21.19	1644	63.9	0.42	6.10	-- --
4:34	2.0	2.99	21.10	1629	65.6	0.43	6.09	-- --
Stabilisation range: 3 consecutive readings			±0.2°C	±3%	±20mV	±10%	±0.2	

OTHER COMMENTS/OBSERVATIONS:

SIGNATURE:

WATER SAMPLING FIELD SHEET

eiaustralia

Site Address:	30 Waratah	Job Number:	E25077
Client:	Holdmark	Date:	30-Apr-21
Field Staff:	AS	Sampling Location ID	GW-30-BH106M
Well Location:		Round No:	1

MEDIUM ☒Groundwater ☐Surface Water ☐Stormwater ☐Other:

SAMPLING POINT INFO

Well Installation Date:	21/4/21	Stickup (m):	-0.13 (+ above ground - below ground)
Initial Well Depth (mbgl):	5.0	Screen Interval (mBTOC):	~~5.0-6.4~~ 2.0-5.0
Previous Sampling Date:		Previous SWL (mBTOC):	

PID READINGS

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

PRE PURGE

Total Well Depth (mbgl):	4.85	Well Head Condition:	Good
SWL (mbtoc):	3.08	Water Column (m):	

PHASE SEPARATED HYDROCARBONS (PSH)

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

PURGE AND SAMPLE

Sampling Method ☒Bladder ☐Peristaltic ☐Submersible ☐Other:

Depth of Pump Inlet:	4.53 + max depth	Fill Timer:	10
Pump Pressure Regulator (psi):	30	Discharge Timer:	5
Weather Conditions:	Sunny	Cycle:	CBMW
Pump on time:	3:41	Pump off time:	4:02

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.)
3:43	0.5	3.56	19.67	3135	-31.0	0.54	7.02	light brown, high, no, no
3:45	1.0	3.60	19.66	3124	-11.4	0.32	6.87	" " "
3:47	1.5	3.63	19.64	3088	-6.4	0.21	6.82	" " "
3:49	2.0	3.65	19.61	3019	-6.2	0.24	6.82	" " "
3:51	2.5	3.67	19.59	3006	-6.0	0.22	6.80	" " "
Stabilisation range: 3 consecutive readings			±0.2°C	±3%	±20mV	±10%	±0.2	

OTHER COMMENTS/OBSERVATIONS:

SIGNATURE:

WATER SAMPLING FIELD SHEET

eiaustralia

Site Address:	30 Wanneroo	Job Number:	E25077
Client:	Holdmark	Date:	30-Apr-21
Field Staff:	AS	Sampling Location ID	GW-30-BH110M
Well Location:		Round No:	1

MEDIUM ☑Groundwater ☐Surface Water ☐Stormwater ☐Other:

SAMPLING POINT INFO

Well Installation Date:	21/4/21	Stickup (m):	-0.03 (+ above ground - below ground)
Initial Well Depth (mbgl):	7.5	Screen Interval (mBTOC):	4.5-7.5
Previous Sampling Date:		Previous SWL (mBTOC):	

PID READINGS

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

PRE PURGE

Total Well Depth (mbgl):	7.47	Well Head Condition:	Good
SWL (mbtoc):	3.09	Water Column (m):	4.38

PHASE SEPARATED HYDROCARBONS (PSH)

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

PURGE AND SAMPLE

Sampling Method ☑Bladder ☐Peristaltic ☐Submersible ☐Other:

Depth of Pump Inlet:	6.0m	Fill Timer:	5
Pump Pressure Regulator (psi):	30	Discharge Timer:	15
Weather Conditions:	Sunny	Cycle:	COM 4
Pump on time:	2:30	Pump off time:	2:55

WATER QUALITY PARAMETERS

Probe Make and Model:		Bump Test Date and Time:	

Time	Volume (L)	SWL (mbtoc)	Temp (°C)	EC ~~mS/cm~~ (µS/cm)	Redox (mV)	DO (mg/L)	pH (units)	Comments (colour, turbidity, odour, sheen etc.)
2:33	0.5	3.73	20.27	53.97	45.1	0.32	6.29	brown, high, ∞, no
2:35	1.0	3.78	19.80	54.92	36.3	0.10	6.20	"
2:37	1.5	3.83	19.71	55.12	36.7	0.03	6.12	"
2:39	2.0	3.85	19.64	55.04	35.7	0.00	6.05	"
2:41	2.5	3.87	19.66	54.88	34.2	0.00	6.01	"
Stabilisation range: 3 consecutive readings			±0.2°C	±3%	±20mV	±10%	±0.2	

OTHER COMMENTS/OBSERVATIONS:

GW-QD1 & GW-QR1 Taken -
Rinsate ran off to low flow pump after completion : GW-QR1

SIGNATURE: GW-QRD1

WATER SAMPLING FIELD SHEET

eiaustralia

Site Address:	30 Waratah	Job Number:	E25077
Client:	Holdmark	Date:	30-Apr-21
Field Staff:	AS	Sampling Location ID	GW-30BH1LM
Well Location:		Round No:	1

MEDIUM ☒Groundwater ☐Surface Water ☐Stormwater ☐Other:

SAMPLING POINT INFO

Well Installation Date:	21/4/21	Stickup (m):	~~-0.10~~ -0.10 (+ above ground - below ground)
Initial Well Depth (mbgl):	7.6	Screen Interval (mBTOC):	4.6-7.6
Previous Sampling Date:		Previous SWL (mBTOC):	

PID READINGS

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

PRE PURGE

Total Well Depth (mbgl):	6.92	Well Head Condition:	Good
SWL (mbtoc):	3.27	Water Column (m):	3.65

PHASE SEPARATED HYDROCARBONS (PSH)

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

PURGE AND SAMPLE

Sampling Method ☒Bladder ☐Peristaltic ☐Submersible ☐Other:

Depth of Pump Inlet:	5.50	Fill Timer:	10
Pump Pressure Regulator (psi):	30	Discharge Timer:	5
Weather Conditions:	Sunny	Cycle:	CRM4
Pump on time:	3:08	Pump off time:	3:27

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.)
3:10	0.5	3.76	20.67	17.67	-14.1	0.93	7.21	brown, high, no, no
3:12	1.0	3.80	20.13	22.09	-68.2	0.39	7.06	" " "
3:14	1.5	3.84	20.12	22.59	-88.2	0.12	7.06	" " "
3:16	2.0	3.86	20.11	22.82	-90.5	0.05	7.07	" "
3:18	2.5	3.88	20.17	23.00	-93.7	0.00	7.06	"
Stabilisation range: 3 consecutive readings			±0.2°C	±3%	±20mV	±10%	±0.2	

OTHER COMMENTS/OBSERVATIONS:

Reusable bailer ~~used~~ used instead of stainless steel bailer as stainless steel bailer was getting stuck ~ 3.0m

SIGNATURE: AS

WATER SAMPLING FIELD SHEET

eiaustralia

Site Address:	32 Waratah	Job Number:	E25077
Client:	Holdmark	Date:	30-Apr-21
Field Staff:	AS	Sampling Location ID	32-BH104m
Well Location:		Round No:	1

MEDIUM ☒Groundwater ☐Surface Water ☐Stormwater ☐Other:

SAMPLING POINT INFO

Well Installation Date:	21/4/21	Stickup (m):	-0.05 (+ above ground - below ground)
Initial Well Depth (mbgl):	1.6	Screen Interval (mBTOC):	1.1-1.6
Previous Sampling Date:		Previous SWL (mBTOC):	Dry

PID READINGS

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

PRE PURGE

Total Well Depth (mbgl):	1.50	Well Head Condition:	Good
SWL (mbtoc):	1.28	Water Column (m)	0.22

PHASE SEPARATED HYDROCARBONS (PSH)

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

PURGE AND SAMPLE

Sampling Method ☐Bladder ☐Peristaltic ☐Submersible ☐Other:

Depth of Pump Inlet:		Fill Timer:	
Pump Pressure Regulator (psi):		Discharge Timer:	
Weather Conditions:		Cycle:	
Pump on time:		Pump off time:	

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.)
Stabilisation range: 3 consecutive readings			±0.2°C	±3%	±20mV	±10%	±0.2	

OTHER COMMENTS/OBSERVATIONS:

Not enough odour getting samples only - sampled at 2:00pm only sampled PFAS (dry)

SIGNATURE:

Returned at 4:50 → Dry

WATER SAMPLING FIELD SHEET

eiaustralia

Site Address:	32 Waratah	Job Number:	E25077
Client:	Holdmark	Date:	30-Apr-21
Field Staff:	AS	Sampling Location ID	32-~~107A~~ BH107A
Well Location:		Round No:	

MEDIUM ☑Groundwater ☐Surface Water ☐Stormwater ☐Other:

SAMPLING POINT INFO

Well Installation Date:	22/4/21	Stickup (m):	-0.10 (+ above ground - below ground)
Initial Well Depth (mbgl):	2.1	Screen Interval (mBTOC):	1.1-2.1
Previous Sampling Date:		Previous SWL (mBTOC):	dry

PID READINGS

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

PRE PURGE

Total Well Depth (mbgl):	2.05	Well Head Condition:	
SWL (mbtoc):	dry	Water Column (m):	

PHASE SEPARATED HYDROCARBONS (PSH)

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

PURGE AND SAMPLE

Sampling Method ☐Bladder ☐Peristaltic ☐Submersible ☐Other:

Depth of Pump Inlet:		Fill Timer:	
Pump Pressure Regulator (psi):		Discharge Timer:	
Weather Conditions:		Cycle:	
Pump on time:		Pump off time:	

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.)
Stabilisation range: 3 consecutive readings			±0.2°C	±3%	±20mV	±10%	±0.2	

OTHER COMMENTS/OBSERVATIONS:

dry

SIGNATURE:

WATER SAMPLING FIELD SHEET

eiaustralia

Site Address:	112 Wharf Rd, Melrose Park	Job Number:	E25077
Client:	Holdmark	Date:	30-Apr-21
Field Staff:	AS	Sampling Location ID :	GW-112- ~~106~~ BH06/M
Well Location:		Round No:	1

MEDIUM ☒Groundwater ☐Surface Water ☐Stormwater ☐Other:

SAMPLING POINT INFO

Well Installation Date:	23/4/21	Stickup (m):	−0.13 (+ above ground - below ground)
Initial Well Depth (mbgl):	2.2	Screen Interval (mBTOC):	1.7-2.2
Previous Sampling Date:		Previous SWL (mBTOC):	Dry

PID READINGS

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

PRE PURGE

Total Well Depth (mbgl):	2.16	Well Head Condition:	Good
SWL (mbtoc):	Dry	Water Column (m):	0m

PHASE SEPARATED HYDROCARBONS (PSH)

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

PURGE AND SAMPLE

Sampling Method ☐Bladder ☐Peristaltic ☐Submersible ☐Other:

Depth of Pump Inlet:		Fill Timer:	
Pump Pressure Regulator (psi):		Discharge Timer:	
Weather Conditions:		Cycle:	
Pump on time:		Pump off time:	

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.)
Stabilisation range: 3 consecutive readings			±0.2°C	±3%	±20mV	±10%	±0.2	

OTHER COMMENTS/OBSERVATIONS:

Dry - No samples taken

SIGNATURE:

WATER SAMPLING FIELD SHEET

eiaustralia

Site Address:	112 Wharf Rd, Melrose Park	Job Number:	E25077
Client:	Holdmark	Date:	30-Apr-21
Field Staff:	AS	Sampling Location ID	GW-112BH110M-1
Well Location:		Round No:	1

MEDIUM ☒Groundwater ☐Surface Water ☐Stormwater ☐Other:

SAMPLING POINT INFO

Well Installation Date:	21/4/21	Stickup (m):	-0.12 (+ above ground - below ground)
Initial Well Depth (mbgl):	1.4	Screen Interval (mBTOC):	0.9-1.4
Previous Sampling Date:		Previous SWL (mBTOC):	Dry

PID READINGS

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

PRE PURGE

Total Well Depth (mbgl):	1.31	Well Head Condition:	Good
SWL (mbtoc):	Dry	Water Column (m):	0

PHASE SEPARATED HYDROCARBONS (PSH)

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

PURGE AND SAMPLE

Sampling Method ☐Bladder ☐Peristaltic ☐Submersible ☐Other:

Depth of Pump Inlet:		Fill Timer:	
Pump Pressure Regulator (psi):		Discharge Timer:	
Weather Conditions:		Cycle:	
Pump on time:		Pump off time:	

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.)
Stabilisation range: 3 consecutive readings			±0.2°C	±3%	±20mV	±10%	±0.2	

OTHER COMMENTS/OBSERVATIONS:

Dry - No samples

SIGNATURE: ASd

WATER SAMPLING FIELD SHEET

eiaustralia

Site Address:	112 Wharf Rd, Melrose Park	Job Number:	E25077
Client:	Holdmark	Date:	30-Apr-21
Field Staff:	AS	Sampling Location ID	GW-112-BH112M
Well Location:		Round No:	1

MEDIUM ☒Groundwater ☐Surface Water ☐Stormwater ☐Other:

SAMPLING POINT INFO

Well Installation Date:	22/4/21	Stickup (m):	-0.12 (+ above ground - below ground)
Initial Well Depth (mbgl):	1.5	Screen Interval (mBTOC):	0.6-1.5
Previous Sampling Date:		Previous SWL (mBTOC):	Dry

PID READINGS

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

PRE PURGE

Total Well Depth (mbgl):	1.36	Well Head Condition:	Good
SWL (mbtoc):	Dry	Water Column (m):	0

PHASE SEPARATED HYDROCARBONS (PSH)

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

PURGE AND SAMPLE

Sampling Method ☐Bladder ☐Peristaltic ☐Submersible ☐Other:

Depth of Pump Inlet:		Fill Timer:	
Pump Pressure Regulator (psi):		Discharge Timer:	
Weather Conditions:		Cycle:	
Pump on time:		Pump off time:	

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.)
Stabilisation range: 3 consecutive readings			±0.2°C	±3%	±20mV	±10%	±0.2	

OTHER COMMENTS/OBSERVATIONS:

Dry – No samples

SIGNATURE:

WATER SAMPLING FIELD SHEET

eiaustralia

Site Address:	112 Wharf Rd	Job Number:	E25077
Client:	Holdmark	Date:	30-Apr-21
Field Staff:	AS	Sampling Location ID	112-BH113M-1
Well Location:		Round No:	1

MEDIUM ☒Groundwater ☐Surface Water ☐Stormwater ☐Other:

SAMPLING POINT INFO

Well Installation Date:	22/4/21	Stickup (m):	-0.12 (+ above ground - below ground)
Initial Well Depth (mbgl):	4.3	Screen Interval (mBTOC):	1.3-4.3
Previous Sampling Date:		Previous SWL (mBTOC):	dry

PID READINGS

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

PRE PURGE

Total Well Depth (mbgl):	4.20	Well Head Condition:	Good
SWL (mbtoc):	3.20	Water Column (m):	1.00m

PHASE SEPARATED HYDROCARBONS (PSH)

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

PURGE AND SAMPLE

Sampling Method ☐Bladder ☐Peristaltic ☐Submersible ☐Other:

Depth of Pump Inlet:	~~4.00~~ 3.78 mid depth	Fill Timer:	5s
Pump Pressure Regulator (psi):		Discharge Timer:	5s
Weather Conditions:	cloudy	Cycle:	CPM1
Pump on time:	1:12	Pump off time:	1:40

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.)
1:17	0.5	3.39	20.63	612	110.9	0.62	5.93	Pale grey/brown, hazy, no odour
1:21	1.0	3.47	20.61	603	114.4	0.66	5.90	" " "
1:25	1.5	3.59	20.57	596	114.7	0.73	5.91	" " "
Stabilisation range: 3 consecutive readings			±0.2°C	±3%	±20mV	±10%	±0.2	

OTHER COMMENTS/OBSERVATIONS:

Aftr sampling PFAS swl: 3.45m

SIGNATURE:

Appendix I - Chain of Custody and Sample Receipt Forms

E-MAILED
26/4 @ 3.35pm

Sheet 1 of 13

Site:	Project No:
82 Hughes Ave, Ermington, 30-32 Waratah St and 112 Wharf Rd, Melrose Park	E25077

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	Sample Matrix: WATER	SOIL	OTHER	Analysis: HM A /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM A /TRH/BTEX/PAHs	HM A /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	Dewatering Suite	sPOCAS	PFAS	Sulphates	Chlorides		TCLP HM A/ / PAH
82-BH101M_0.4-0.5		2J, ZLB	26/4/21	am/pm		X																	
_0.9-1.0																							
_1.4-1.5																							
82-BH102M_0.4-0.6	1								X														
_0.9-1.0																							
_1.4-1.5																							
_1.9-2.0																							
_2.4-2.5																							
_2.9-3.0																							
_3.5-3.6																							
_3.9-4.0																							
_4.4-4.5																							

SGS EHS Sydney COC
SE218963

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

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 botlle
P = natural HDPE plastic bottle
VC = glass vial, Tefton Septum
ZLB = Zip-Lock Bag

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: Andrew Schmidt	Print:
Signature:	Signature:
Date: 23/04/2021	Date: 23/4 2.50

Sampler's Comments:
Please cc:
Andrew.Ibrahim@eiaustralia.com.au

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

Sheet 2 of 13

Site:	Project No:
82 Hughes Ave, Ermington, 30-32 Waratah St and 112 Wharf Rd, Melrose Park	E25077

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	Sample Matrix: WATER	SOIL	OTHER	Analysis: HM[A] /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM[A] /TRH/BTEX/PAHs	HM[A] /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	OCPs/OPPs/PCBs	sPOCAS	PFAS	Sulphates	Chlorides		TCLP HM A/ / PAH
82-BH102M_4.4-4.5		2J, ZLB	20/4/21	am/pm		X																	
_4.9-5.0																							
_5.4-5.5																							
30-BH101_0.2-0.3	2								X				X				X		X				
_0.5-0.6	3								X				X										
_0.9-1.0	4								X				X										
_1.4-1.5																							
_2.9-3.0																							
_4.4-4.5	5								X				X										
_5.4-5.5																							
_6.9-7.0																							
30-BH102M_0.2-0.3	6					✓			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

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

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: Andrew Schmidt	Print:
Signature:	Signature:
Date: 23/04/2021	Date: 23/4 @ 2.50

Sampler's Comments:
Please cc:
Andrew.Ibrahim@eiaustralia.com.au

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

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PYRMONT NSW 2009
Ph: 9516 0722
lab@eiaustralia.com.au

Sheet 3 of 13

Site:	Project No:
82 Hughes Ave, Ermington, 30-32 Waratah St and 112 Wharf Rd, Melrose Park	E25077

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	Sample Matrix: WATER	SOIL	OTHER	Analysis: HM [A] /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM [A] /TRH/BTEX/PAHs	HM [A] /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	[redacted]OCPs/OPPs/PCBs	sPOCAS	PFAS	Sulphates	Chlorides		TCLP HM A/ / PAH
30-BH107M_0.5-0.6	7	2xJ, 2xG	20/4/21	am/pm		X			X				X										
_1.2-1.3																							
_2.0-2.1	8								X				X										
_2.4-2.5																							
_3.5-3.6																							
_4.0-4.1	9								X				X										
30-BH103_0.3-0.4	10								X				X				X						
_0.9-1.0	11								X				X										
_1.3-1.4																							
30-BH104_0.4-0.5	12								X				X				X		X				
_0.9-1.0																							
_2.0-2.1	13								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

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 botlle
P = natural HDPE plastic bottle
VC = glass vial, Tefton Septum
ZLB = Zip-Lock Bag

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: Andrew Schmidt	Print:
Signature:	Signature:
Date: 23/04/2021	Date: 26/4 @ 2.50

Sampler's Comments:
Please cc:
Andrew.Ibrahim@eiaustralia.com.au

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

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

Sheet 4 of 13

Site:	Project No:
82 Hughes Ave, Ermington, 30-32 Waratah St and 112 Wharf Rd, Melrose Park	E25077

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	Sample Matrix: WATER	SOIL	OTHER	Analysis: HM A /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM A /TRH/BTEX/PAHs	HM A /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	OCPs/OPPs/PCBs	sPOCAS	PFAS	Sulphates	Chlorides		TCLP HM A/ / PAH
30-BH104_2.7-2.8	14	2xJ, ZLB	20/4/21	am/pm		X			X				X										
_3.4-3.5																							
_4.2-4.3																							
_4.9-5.0																							
30-BH105_0.4-0.5	15								X				X				X						
_1.2-1.3																							
_1.4-1.5																							
30-BH106M_0.3-0.4	16	2x5, ZLB	21/4/21	am/pm					X				X				X		X				
_1.1-1.2	17								X				X										
_1.9-2.0	18								X				X										
_2.7-2.8																							
_3.4-3.5	19								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

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 botlle
P = natural HDPE plastic bottle
VC = glass vial, Tefton Septum
ZLB = Zip-Lock Bag

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: Andrew Schmidt	Print: Emily
Signature: A Schmidt	Signature:
Date: 23/04/2021	Date: 23/4 @ 7:50

Sampler's Comments:
Please cc:
Andrew.Ibrahim@eiaustralia.com.au

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

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Ph: 9516 0722
lab@eiaustralia.com.au

Sheet 5 of 13

Site:	Project No:
82 Hughes Ave, Ermington, 30-32 Waratah St and 112 Wharf Rd, Melrose Park	E25077

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	WATER	SOIL	OTHER	HM [A] /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM [A] /TRH/BTEX/PAHs	HM [A] /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	OCPs, OPPs, PCBs	sPOCAS	PFAS	Sulphates	Chlorides		TCLP HM A/ / PAH
30-BH106M_4.4-4.5		2x Jar, ZLB	21/4/21	am/pm		X																	
_5.4-5.5		↓	↓	↓		↓																	
_6.3-6.4																							
30-BH107_0.3-0.4	20								X				X										
_0.9-1.0	21								X				X										
_1.3-1.4																							
_2.3-2.4	22								X				X										
_2.9-3.0																							
_3.8-3.9																							
30-BH108_0.2-0.3	23								X				X				X						
_0.4-0.5	24								X				X										
_1.2-1.3	25	↓	↓	↓		↓			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

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 botlle
P = natural HDPE plastic bottle
VC = glass vial, Tefton Septum
ZLB = Zip-Lock Bag

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: Andrew Schmidt	Print: Emily
Signature:	Signature:
Date: 23/04/2021	Date: 23/4/21

Sampler's Comments:
Please cc:
Andrew.Ibrahim@eiaustralia.com.au

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

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PYRMONT NSW 2009
Ph: 9516 0722
lab@eiaustralia.com.au

Sheet 6 of 13

Site:	Project No:
82 Hughes Ave, Ermington, 30-32 Waratah St and 112 Wharf Rd, Melrose Park	E25077

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	Sample Matrix: WATER	SOIL	OTHER	Analysis: HM[A] /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM[A] /TRH/BTEX/PAHs	HM[A] /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	Dewatering Suite	sPOCAS	PFAS	Sulphates	Chlorides		TCLP HM A/ / PAH
30-BH108_1.8-1.9		2xS, 2xJ	21/4/21	am/pm		X																	
_2.7-2.8	26	↓	↓	↓		↓			X				X										
_3.4-3.5																							
30-BH109_0.3-0.4	27								X				X										
_0.5-0.6																							
_1.5-1.6																							
_2.6-2.7																							
_3.5-3.6																							
_4.0-4.1																							
30-BH110M_0.2-0.3	28								X				X										
_0.7-0.8																							
_1.4-1.5	29	↓	↓	↓		↓			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

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 botlle
P = natural HDPE plastic bottle
VC = glass vial, Tefton Septum
ZLB = Zip-Lock Bag

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: Andrew Schmidt	Print:
Signature:	Signature:
Date: 23/04/2021	Date: 23/4/21

Sampler's Comments:
Please cc:
Andrew.Ibrahim@eiaustralia.com.au

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

SE218963

CLIENT DETAILS

Contact	Andrew Ibrahim
Client	EI AUSTRALIA
Address	SUITE 6.01 55 MILLER STREET PYRMONT NSW 2009
Telephone	61 2 95160722
Facsimile	(Not specified)
Email	andrew.ibrahim@eiaustralia.com.au
Project	**E25077 82 Hughes Ave, Ermington, 30-32 W**
Order Number	**E25077**
Samples	29

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	Fri 23/4/2021
Report Due	Mon 3/5/2021
SGS Reference	**SE218963**

SUBMISSION DETAILS

This is to confirm that 29 samples were received on Friday 23/4/2021. Results are expected to be ready by COB Monday 3/5/2021. Please quote SGS reference SE218963 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Samples clearly labelled	Yes	Complete documentation received	Yes
Sample container provider	SGS	Sample cooling method	Ice Bricks
Samples received in correct containers	Yes	Sample counts by matrix	29 Soil
Date documentation received	26/4/2021 @3.35PM	Type of documentation received	COC
Samples received in good order	Yes	Samples received without headspace	N/A
Sample temperature upon receipt	10.0°C	Sufficient sample for analysis	Yes
Turnaround time requested	Standard		

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

42 samples have been placed on hold as no tests have been assigned for them by the client. These samples will not be processed.
PFAS subcontracted to SGS Melbourne, Unit 10/585 Blackburn Road Notting Hill VIC 3168, NATA Accreditation Number 2562, Site number 14420. Results may be delayed.

SAMPLE RECEIPT ADVICE

SE218963

CLIENT DETAILS

Client EI AUSTRALIA

Project E25077 82 Hughes Ave, Ermington, 30-32 W

SUMMARY OF ANALYSIS

No.	Sample ID	OC Pesticides in Soil	OP Pesticides in Soil	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	PCBs in Soil	Total Recoverable Elements in Soil/Waste	TRH (Total Recoverable Hydrocarbons) in Soil	VOC's in Soil	Volatile Petroleum Hydrocarbons in Soil
001	82_BH102M_0.4-0.6	-	-	26	-	7	10	11	7
002	30-BH101_0.2-0.3	29	14	26	11	7	10	11	7
003	30-BH101_0.5-0.6	-	-	26	-	7	10	11	7
004	30-BH101_0.9-1.0	-	-	26	-	7	10	11	7
005	30-BH101_4.4-4.5	-	-	26	-	7	10	11	7
006	30-BH102M_0.2-0.3	29	14	26	11	7	10	11	7
007	30-BH102M_0.5-0.6	-	-	26	-	7	10	11	7
008	30-BH102M_2.0-2.1	-	-	26	-	7	10	11	7
009	30-BH102M_4.0-4.1	-	-	26	-	7	10	11	7
010	30-BH103_0.3-0.4	29	14	26	11	7	10	11	7
011	30-BH103_0.9-1.0	-	-	26	-	7	10	11	7
012	30-BH104_0.4-0.5	29	14	26	11	7	10	11	7
013	30-BH104_2.0-2.1	-	-	26	-	7	10	11	7
014	30-BH104_2.7-2.5	-	-	26	-	7	10	11	7
015	30-BH105_0.4-0.5	29	14	26	11	7	10	11	7
016	30-BH106M_0.3-0.4	29	14	26	11	7	10	11	7
017	30-BH106M_1.1-1.2	-	-	26	-	7	10	11	7
018	30-BH106M_1.9-2.0	-	-	26	-	7	10	11	7
019	30-BH106M_3.4-3.5	-	-	26	-	7	10	11	7
020	30-BH107_0.3-0.4	-	-	26	-	7	10	11	7
021	30-BH107_0.9-1.0	-	-	26	-	7	10	11	7
022	30-BH107_2.3-2.4	-	-	26	-	7	10	11	7
023	30-BH108_0.2-0.3	29	14	26	11	7	10	11	7
024	30-BH108_0.4-0.5	-	-	26	-	7	10	11	7

CONTINUED OVERLEAF

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

SAMPLE RECEIPT ADVICE

SE218963

CLIENT DETAILS

Client EI AUSTRALIA

Project E25077 82 Hughes Ave, Ermington, 30-32 W

SUMMARY OF ANALYSIS

No.	Sample ID	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	Total Recoverable Elements in Soil/Waste	TRH (Total Recoverable Hydrocarbons) in Soil	VOC's in Soil	Volatile Petroleum Hydrocarbons in Soil
025	30-BH108_1.2-1.3	26	7	10	11	7
026	30-BH108_2.7-2.8	26	7	10	11	7
027	30-BH109_0.3-0.4	26	7	10	11	7
028	30-BH110M_0.2-0.3	26	7	10	11	7
029	30-BH110M_1.4-1.5	26	7	10	11	7

CONTINUED OVERLEAF

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

SAMPLE RECEIPT ADVICE

SE218963

CLIENT DETAILS

Client EI AUSTRALIA

Project E25077 82 Hughes Ave, Ermington, 30-32 W

SUMMARY OF ANALYSIS

No.	Sample ID	Fibre Identification in soil	Mercury in Soil	Moisture Content	Per- and Polyfluoroalkyl Substances (PFAS) in
001	82_BH102M_0.4-0.6	-	1	1	-
002	30-BH101_0.2-0.3	2	1	1	55
003	30-BH101_0.5-0.6	2	1	1	-
004	30-BH101_0.9-1.0	2	1	1	-
005	30-BH101_4.4-4.5	2	1	1	-
006	30-BH102M_0.2-0.3	2	1	1	55
007	30-BH102M_0.5-0.6	2	1	1	-
008	30-BH102M_2.0-2.1	2	1	1	-
009	30-BH102M_4.0-4.1	2	1	1	-
010	30-BH103_0.3-0.4	2	1	1	-
011	30-BH103_0.9-1.0	2	1	1	-
012	30-BH104_0.4-0.5	2	1	1	55
013	30-BH104_2.0-2.1	2	1	1	-
014	30-BH104_2.7-2.5	2	1	1	-
015	30-BH105_0.4-0.5	2	1	1	-
016	30-BH106M_0.3-0.4	2	1	1	55
017	30-BH106M_1.1-1.2	2	1	1	-
018	30-BH106M_1.9-2.0	2	1	1	-
019	30-BH106M_3.4-3.5	2	1	1	-
020	30-BH107_0.3-0.4	2	1	1	-
021	30-BH107_0.9-1.0	2	1	1	-
022	30-BH107_2.3-2.4	2	1	1	-
023	30-BH108_0.2-0.3	2	1	1	-
024	30-BH108_0.4-0.5	2	1	1	-

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

SE218963

CLIENT DETAILS

Client EI AUSTRALIA

Project E25077 82 Hughes Ave, Ermington, 30-32 W

SUMMARY OF ANALYSIS

No.	Sample ID	Fibre Identification in soil	Mercury in Soil	Moisture Content
025	30-BH108_1.2-1.3	2	1	1
026	30-BH108_2.7-2.8	2	1	1
027	30-BH109_0.3-0.4	2	1	1
028	30-BH110M_0.2-0.3	2	1	1
029	30-BH110M_1.4-1.5	2	1	1

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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 .

Yin, Emily (Sydney)

From: Andrew Ibrahim - EIAustralia <andrew.ibrahim@eiaustralia.com.au>
Sent: Monday, 10 May 2021 3:16 PM
To: AU.SampleReceipt.Sydney (Sydney); AU.Environmental.Sydney (Sydney)
Subject: [EXTERNAL] RE: Report Job SE218963, your reference E25077 Hughes,Waratah,Wharf Melrose Pk, order number E25077

Hi SGS,

30 31

Please test samples 30-BH101_2.9-3.0 & 30-BH101_5.4-5.5

For Lead & TCLP Lead and Arsenic & TCLP Arsenic on 24 hrs TAT.

Thank you.

Kind regards,

SGS EHS Alexandria Laboratory
SE218963B COC
Received: 10 – May – 2021

Andrew Ibrahim
MEng. (Env), BEng. (Che)
Chemical / Environmental Engineer
T 02 9516 0722 M 0451224922
E andrew.ibrahim@eiaustralia.com.au
Suite 6.01, 55 Miller Street
Pyrmont, NSW 2009
www.eiaustralia.com.au

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Environmental | Geotechnical | Structural | Civil | Hazardous Materials

---

From: AU.Samplereceipt.Sydney@SGS.com [mailto:AU.Samplereceipt.Sydney@SGS.com]
Sent: Tuesday, 4 May 2021 12:13 PM
To: Andrew Ibrahim - EIAustralia; Andrew Schmidt - EIAustralia; Laboratory Results - EIAustralia
Subject: Report Job SE218963, your reference E25077 Hughes,Waratah,Wharf Melrose Pk, order number E25077

Dear Valued Customer,

Please find attached the report for SGS job SE218963, your reference E25077 Hughes,Waratah,Wharf Melrose Pk, order number E25077.

How are we doing? Please take a quick online Survey

SAMPLE RECEIPT ADVICE

SE218963B

CLIENT DETAILS

Contact	Andrew Ibrahim
Client	EI AUSTRALIA
Address	SUITE 6.01 55 MILLER STREET PYRMONT NSW 2009
Telephone	61 2 95160722
Facsimile	(Not specified)
Email	andrew.ibrahim@eiaustralia.com.au
Project	**E25077 Hughes,Waratah,Wharf Melrose Pk**
Order Number	**E25077**
Samples	31

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	Mon 10/5/2021
Report Due	Tue 11/5/2021
SGS Reference	**SE218963B**

SUBMISSION DETAILS

This is to confirm that 31 samples were received on Monday 10/5/2021. Results are expected to be ready by COB Tuesday 11/5/2021. Please quote SGS reference SE218963B when making enquiries. Refer below for details relating to sample integrity upon receipt.

Samples clearly labelled	Yes	Complete documentation received	Yes
Sample container provider	SGS	Sample cooling method	Ice Bricks
Samples received in correct containers	Yes	Sample counts by matrix	2 Soil
Date documentation received	10/5/2021@3:16pm	Type of documentation received	Email
Samples received in good order	Yes	Samples received without headspace	N/A
Sample temperature upon receipt	10.0°C	Sufficient sample for analysis	Yes
Turnaround time requested	Next Day		

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

SAMPLE RECEIPT ADVICE

SE218963B

CLIENT DETAILS

Client EI AUSTRALIA

Project E25077 Hughes,Waratah,Wharf Melrose Pk

SUMMARY OF ANALYSIS

No.	Sample ID	Metals in TCLP Extract by ICPOES	Moisture Content	TCLP (Toxicity Characteristic Leaching	Total Recoverable Elements in Soil/Waste
030	30-BH101_2.9-3.0	2	1	6	2
031	30-BH101_5.4-5.5	2	1	6	2

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 .

E-MAILED
26/4/21 @ 3.35pm

Sheet 1 of 13

Site:	Project No:
82 Hughes Ave, Ermington, 30-32 Waratah St and 112 Wharf Rd, Melrose Park	E25077

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	Sample Matrix: WATER	SOIL	OTHER	Analysis: HM A /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM A /TRH/BTEX/PAHs	HM A /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	OCPs/OPPs/PCBs	sPOCAS	PFAS	Sulphates	Chlorides		TCLP HM A/ PAH
30-BH110M_0.2-0.3	1	2xJ, 2ZLB	21/4/21	am/pm		X			X				X										
_0.9-3.0		↓	↓	↓		↓																	
_3.4-3.5																							
_4.1-4.2																							
30-BH111M_0.2-0.3	2								X				X										
_0.5-0.6																							
_1.4-1.5																							
_2.2-2.3																							
_2.9-3.0																							
_3.5-3.6																							
_4.8-4.9																							
30-BH117_0.2-0.3	3	↓	↓	↓		↓			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

SGS EHS Sydney COC
SE218964

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

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: Andrew Schmidt	Print:
Signature:	Signature:
Date: 23/04/2021	Date: 23/4 @ 2.15

Sampler's Comments:
Please cc:
Andrew.Ibrahim@eiaustralia.com.au

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

Sheet 2 of

Site: 82 Hughes Ave, Ermington, 30-32 Waratah St and 112 Wharf Rd, Melrose Park

Project No: E25077

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	Sample Matrix: WATER	SOIL	OTHER	Analysis: HM A /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM A /TRH/BTEX/PAHs	HM A /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	[redacted] OCPs/OPPs/PCBs	sPOCAS	PFAS	Sulphates	Chlorides		TCLP HM A / PAH
112-BH10L0.3-0.4	4	2x S/ 2GB	22/4/21	am/pm		X			X				X										
_0.6-0.7																							
112-BH102.4-0.5	5								X				X				X		X				
_0.7-0.8																							
112-BH103_0.2-0.3	6		21/4/21	am/pm		X			X				X										
_0.5-0.6																							
112-BH104_0.2-0.3	7								X				X				X						
_0.7-0.8																							
112-BH105_0.2-0.3	8								X				X				X		X				
_0.6-0.7																							
112-BH106M_0.2-0.3	9								X				X				X		X				
_0.7-1.0																							

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

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 botlle
P = natural HDPE plastic bottle
VC = glass vial, Tefton Septum
ZLB = Zip-Lock Bag

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: Andrew Schmidt	Print:
Signature:	Signature:
Date: 23/04/2021	Date: 27/4 @ 2:30

Sampler's Comments:
cc: Please cc:
Andrew.Ibrahim@eiaustralia.com.au

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

Sheet 9 of 1

Site: 82 Hughes Ave, Ermington, 30-32 Waratah St and 112 Wharf Rd, Melrose Park

Project No: E25077

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	Sample Matrix: WATER	SOIL	OTHER	Analysis: HM A /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM A /TRH/BTEX/PAHs	HM A /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	[redacted] OCPs/OPPs/PCBs	sPOCAS	PFAS	Sulphates	Chlorides		TCLP HM A / PAH
112-BH106M_1.4-1.5	10	2AJ, 2ZLB	21/4/21	am/pm		X			X				X										
-1.9-2.0																							
112-BH107_0.2-0.3	11								X				X				X						
-0.9-1.0																							
112-BH108_0.2-0.3	12								X				X										
-0.7-0.8	13								X				X										
-1.1-1.2																							
112-BH109_0.3-0.4	14								X				X				X		X				
-0.7-0.8	15								X				X										
-1.4-1.5																							
-1.9-2.0																							
112-BH110M_0.2-0.3	16	↓	↓	↓		↓			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

LABORATORY TURNAROUND

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

Container Type:
J = solvent washed, acid rinsed, Tefton sealed glass jar
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VC = glass vial, Tefton Septum
ZLB = Zip-Lock Bag

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: Andrew Schmidt	Print:
Signature: A.Schmidt	Signature:
Date: 23/04/2021	Date: 23/4 @ 2-30

Sampler's Comments:
cc: Please cc:
Andrew.Ibrahim@eiaustralia.com.au

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

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

Sheet 10 of

Site: 82 Hughes Ave, Ermington, 30-32 Waratah St and 112 Wharf Rd, Melrose Park

Project No: E25077

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	Sample Matrix: WATER	SOIL	OTHER	Analysis: HM A /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM A /TRH/BTEX/PAHs	HM A /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	[redacted] OCPs/OPPs/PCBs	sPOCAS	PFAS	Sulphates	Chlorides		TCLP HM A/ / PAH
112-BH110M_0.7-0.8		2xJ, ZLB	21/4/21	am/pm		X																	
_1.3-1.4		↓	↓	↓		↓																	
112-BH111_0.2-0.3	17		22/4/21	am/pm					X				X										
_0.6-0.7	18								X				X										
_1.1-1.2																							
112-BH112M_0.4-0.5	19								X				X				X		X				
_0.9-1.0																							
112-BH113M_0.2-0.3	20								X				X				X		X				
_0.8-0.9																							
_3.1-3.2																							
32-BH101_0.1-0.2	21								X				X				X		X				
_0.5-0.6		↓	↓	↓		↓																	

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

LABORATORY TURNAROUND

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

Container Type:
J = solvent washed, acid rinsed, Tefton sealed glass jar
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VC = glass vial, Tefton Septum
ZLB = Zip-Lock Bag

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: Andrew Schmidt	Print:
Signature: A.Schmidt	Signature:
Date: 23/04/2021	Date: 23/4/21 30

Sampler's Comments:
cc: Please cc:
Andrew.Ibrahim@eiaustralia.com.au

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

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PYRMONT NSW 2009
Ph: 9516 0722
lab@eiaustralia.com.au

Sheet 11 of 13

Site:	Project No:
82 Hughes Ave, Ermington, 30-32 Waratah St and 112 Wharf Rd, Melrose Park	E25077

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	Sample Matrix: WATER	SOIL	OTHER	Analysis: HM A /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM A /TRH/BTEX/PAHs	HM A /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	OCs/OPPs/PCBs	sPOCAS	PFAS	Sulphates	Chlorides		TCLP HM A/ / PAH
32-BH102_0.2-0.3	22	2J, 2VS	22/4/21	am/pm		X			X				X				X						
_0.9-1.0																							
2 BH103 0.3-0.4	23								X				X				X						
_0.9-1.0	24								X				X										
_1.4-1.5																							
32-BH104M-0.2-0.3	25								X				X				X		X				
_1.0-1.1																							
32-BH105_0.2-0.3	26								X				X				X						
_0.5-0.6																							
_1.2-1.3																							
32-BH106_0.2-0.3	27								X				X										
_0.9-1.0																							

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

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

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: Andrew Schmidt	Print:
Signature:	Signature:
Date: 23/04/2021	Date: 23/4/21 2:50

Sampler's Comments:
Please cc:
Andrew.Ibrahim@eiaustralia.com.au

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

Sheet 12 of 13

Site:	Project No:
82 Hughes Ave, Ermington, 30-32 Waratah St and 112 Wharf Rd, Melrose Park	E25077

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	Sample Matrix: WATER	SOIL	OTHER	Analysis: HM [A] /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM [A] /TRH/BTEX/PAHs	HM [A] /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	[redacted]OCPs/OPPs/PCBs	sPOCAS	PFAS	Sulphates	Chlorides		TCLP HM A/ PAH
32-BH106-1.4-1.5	28	2x S, 2 ZLB	22/4/21	am/pm		X			X				X										
-1.9-2.0		↓	↓	↓		↓																	
32-BH107M_0.2-0.3	29								X				X				X		X				
-1.0-1.1																							
-2.0-2.1		↓	↓	↓		↓																	

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

LABORATORY TURNAROUND

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

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

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: Andrew Schmidt	Print: Emily [illegible]
Signature: [signature]	Signature: [signature]
Date: 23/04/2021	Date: 23/4 @ 1.50

Sampler's Comments:
Please cc:
Andrew.Ibrahim@eiaustralia.com.au

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

Sheet 13 of 13

Site:	Project No:
82 Hughes Ave, Ermington, 30-32 Waratah St and 112 Wharf Rd, Melrose Park	E25077

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	Sample Matrix: WATER	SOIL	OTHER	Analysis: HM [A] /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM [A] /TRH/BTEX/PAHs	HM [A] /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	Dewatering Suite	sPOCAS	PFAS	Sulphates	Chlorides		TCLP HM A/ / PAH
QD1	30	J	20/2/21	am/pm		X			X														
QD2	31	↓	22/2/21	↓		↓			X														
QD3	32	↓	↓	↓		↓																	
QD4	33	↓	↓	↓		↓																	
QR1	34	S,2xVC, P	22/2/21	am/pm	X				X														
QRB1		↓	↓	↓	↓																		
QTB1	35	VC	Lab Prepared	↓		X					X												
QTS1	36	↓	↓	↓		↓					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

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 botlle
P = natural HDPE plastic bottle
VC = glass vial, Tefton Septum
ZLB = Zip-Lock Bag

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: Andrew Schmidt	Print:
Signature:	Signature:
Date: 23/04/2021	Date: 23/4/21

Sampler's Comments:
Please cc:
Andrew.Ibrahim@eiaustralia.com.au

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

Yin, Emily (Sydney)

From: AU.Environmental.Sydney (Sydney)
Sent: Monday, 26 April 2021 3:39 PM
To: AU.SampleReceipt.Sydney (Sydney)
Subject: FW: [EXTERNAL] E25077.E02 - Melrose Park
Attachments: 26042021153123-0001.pdf

Hi Emily

Please do this

Regards,

Paul Harley
Industries and Environment
Client Manager
Phone: +61 (0)2 8594 0400
Direct: +61 (0)2 8594 0449
Mobile: +61 (0)4 0797 2867
(Please note my new working hours of Mon-Fri 7:00am-3:00pm)

From: Andrew Ibrahim - EIAustralia <andrew.ibrahim@eiaustralia.com.au>
Sent: Monday, 26 April 2021 3:35 PM
To: AU.Environmental.Sydney (Sydney) <AU.Environmental.Sydney@sgs.com>; Harley, Paul (Sydney) <Paul.Harley@sgs.com>; Crawford, Huong (Sydney) <Huong.Crawford@sgs.com>
Subject: [EXTERNAL] E25077.E02 - Melrose Park

Hi SGS team,

Please find attached COCs for the samples delivered last Friday.

As per our discussion, please sub-sample the following to be tested as duplicate samples

SE218963
30-BH103_0.3-0.4 ---------- the subsample to have the ID of QD3

SE218964
112-BH101_0.3-0.4 -------- the subsample to have the ID of QD4

~~QD3 & QD4~~ to be tested for (HMs, TRH, BTEX and PAHs) on a standard TAT.

Thank you.

Kind regards,

SAMPLE RECEIPT ADVICE

SE218964

CLIENT DETAILS

Contact	Andrew Ibrahim
Client	EI AUSTRALIA
Address	SUITE 6.01 55 MILLER STREET PYRMONT NSW 2009
Telephone	61 2 95160722
Facsimile	(Not specified)
Email	andrew.ibrahim@eiaustralia.com.au
Project	**E25077 Hughes,Waratah,Wharf Melrose Pk**
Order Number	**E25077**
Samples	36

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	Fri 23/4/2021
Report Due	Mon 3/5/2021
SGS Reference	**SE218964**

SUBMISSION DETAILS

This is to confirm that 36 samples were received on Friday 23/4/2021. Results are expected to be ready by COB Monday 3/5/2021. Please quote SGS reference SE218964 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Samples clearly labelled	Yes	Complete documentation received	Yes
Sample container provider	SGS	Sample cooling method	Ice Bricks
Samples received in correct containers	Yes	Sample counts by matrix	35 Soil, 1 water
Date documentation received	26/4/2021@3:35pm	Type of documentation received	COC
Samples received in good order	Yes	Samples received without headspace	Yes
Sample temperature upon receipt	10.0C	Sufficient sample for analysis	Yes
Turnaround time requested	Standard		

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 Numbe. 2562/14420.
36 Soil and 1 Water samples have been placed on hold as no tests have been assigned for them by the client . These samples will not be processed.

SAMPLE RECEIPT ADVICE

SE218964

CLIENT DETAILS

Client EI AUSTRALIA

Project E25077 Hughes,Waratah,Wharf Melrose Pk

SUMMARY OF ANALYSIS

No.	Sample ID	OC Pesticides in Soil	OP Pesticides in Soil	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	PCBs in Soil	Total Recoverable Elements in Soil/Waste	TRH (Total Recoverable Hydrocarbons) in Soil	VOC's in Soil	Volatile Petroleum Hydrocarbons in Soil
001	30-BH110M_2.2-2.3	-	-	26	-	7	10	11	7
002	30-BH111M_0.2-0.3	-	-	26	-	7	10	11	7
003	30-BH117_0.2-0.3	-	-	26	-	7	10	11	7
004	112-BH101_0.3-0.4	-	-	26	-	7	10	11	7
005	112-BH102_0.4-0.5	29	14	26	11	7	10	11	7
006	112-BH103_0.2-0.3	-	-	26	-	7	10	11	7
007	112-BH104_0.2-0.3	29	14	26	11	7	10	11	7
008	112-BH105_0.2-0.3	29	14	26	11	7	10	11	7
009	112-BH106M_0.2-0.3	29	14	26	11	7	10	11	7
010	112-BH106M_1.4-1.5	-	-	26	-	7	10	11	7
011	112-BH107_0.2-0.3	29	14	26	11	7	10	11	7
012	112-BH108_0.2-0.3	-	-	26	-	7	10	11	7
013	112-BH108_0.7-0.8	-	-	26	-	7	10	11	7
014	112-BH109_0.3-0.4	29	14	26	11	7	10	11	7
015	112-BH109_0.7-0.8	-	-	26	-	7	10	11	7
016	112-BH110M_0.2-0.3	29	14	26	11	7	10	11	7
017	112-BH111_0.2-0.3	-	-	26	-	7	10	11	7
018	112-BH111_0.6-0.7	-	-	26	-	7	10	11	7
019	112-BH112M_0.4-0.5	29	14	26	11	7	10	11	7
020	112-BH113M_0.2-0.3	29	14	26	11	7	10	11	7
021	32-BH101_0.1-0.2	29	14	26	11	7	10	11	7
022	32-BH102_0.2-0.3	29	14	26	11	7	10	11	7
023	2-BH103_0.3-0.4	29	14	26	11	7	10	11	7
024	2-BH103_0.9-1.0	-	-	26	-	7	10	11	7

CONTINUED OVERLEAF

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

SAMPLE RECEIPT ADVICE

SE218964

CLIENT DETAILS

Client EI AUSTRALIA

Project E25077 Hughes,Waratah,Wharf Melrose Pk

SUMMARY OF ANALYSIS

No.	Sample ID	OC Pesticides in Soil	OP Pesticides in Soil	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	PCBs in Soil	Total Recoverable Elements in Soil/Waste	TRH (Total Recoverable Hydrocarbons) in Soil	VOC's in Soil	Volatile Petroleum Hydrocarbons in Soil
025	32-BH104M_0.2-0.3	29	14	26	11	7	10	11	7
026	32-BH105_0.2-0.3	29	14	26	11	7	10	11	7
027	32-BH106_0.2-0.3	-	-	26	-	7	10	11	7
028	32-BH106_1.4-1.5	-	-	26	-	7	10	11	7
029	32-BH107M_0.2-0.3	29	14	26	11	7	10	11	7
030	QD1	-	-	26	-	7	10	11	7
031	QD2	-	-	26	-	7	10	11	7
032	QD3	-	-	26	-	7	10	11	7
033	QD4	-	-	26	-	7	10	11	7
035	QTB1	-	-	-	-	-	-	11	-
036	QTS1	-	-	-	-	-	-	11	-

CONTINUED OVERLEAF

The above table represents SGS' interpretation of the client-supplied Chain Of Custody document.
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Testing as per this table shall commence immediately unless the client intervenes with a correction .

SAMPLE RECEIPT ADVICE

SE218964

CLIENT DETAILS

Client EI AUSTRALIA

Project E25077 Hughes,Waratah,Wharf Melrose Pk

SUMMARY OF ANALYSIS

No.	Sample ID	Fibre Identification in soil	Mercury in Soil	Moisture Content	Per- and Polyfluoroalkyl Substances (PFAS) in
001	30-BH110M_2.2-2.3	2	1	1	-
002	30-BH111M_0.2-0.3	2	1	1	-
003	30-BH117_0.2-0.3	2	1	1	-
004	112-BH101_0.3-0.4	2	1	1	-
005	112-BH102_0.4-0.5	2	1	1	55
006	112-BH103_0.2-0.3	2	1	1	-
007	112-BH104_0.2-0.3	2	1	1	-
008	112-BH105_0.2-0.3	2	1	1	55
009	112-BH106M_0.2-0.3	2	1	1	55
010	112-BH106M_1.4-1.5	2	1	1	-
011	112-BH107_0.2-0.3	2	1	1	-
012	112-BH108_0.2-0.3	2	1	1	-
013	112-BH108_0.7-0.8	2	1	1	-
014	112-BH109_0.3-0.4	2	1	1	55
015	112-BH109_0.7-0.8	2	1	1	-
016	112-BH110M_0.2-0.3	2	1	1	-
017	112-BH111_0.2-0.3	2	1	1	-
018	112-BH111_0.6-0.7	2	1	1	-
019	112-BH112M_0.4-0.5	2	1	1	55
020	112-BH113M_0.2-0.3	2	1	1	55
021	32-BH101_0.1-0.2	2	1	1	55
022	32-BH102_0.2-0.3	2	1	1	-
023	2-BH103_0.3-0.4	2	1	1	-
024	2-BH103_0.9-1.0	2	1	1	-

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

SE218964

CLIENT DETAILS

Client EI AUSTRALIA

Project E25077 Hughes,Waratah,Wharf Melrose Pk

SUMMARY OF ANALYSIS

No.	Sample ID	Fibre Identification in soil	Mercury in Soil	Moisture Content	Per- and Polyfluoroalkyl Substances (PFAS) in
025	32-BH104M_0.2-0.3	2	1	1	55
026	32-BH105_0.2-0.3	2	1	1	-
027	32-BH106_0.2-0.3	2	1	1	-
028	32-BH106_1.4-1.5	2	1	1	-
029	32-BH107M_0.2-0.3	2	1	1	55
030	QD1	-	1	1	-
031	QD2	-	1	1	-
032	QD3	-	1	1	-
033	QD4	-	1	1	-
035	QTB1	-	-	1	-

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

SE218964

CLIENT DETAILS

Client EI AUSTRALIA

Project E25077 Hughes,Waratah,Wharf Melrose Pk

SUMMARY OF ANALYSIS

No.	Sample ID	Mercury (dissolved) in Water	Trace Metals (Dissolved) in Water by ICPMS	TRH (Total Recoverable Hydrocarbons) in Water	VOCs in Water	Volatile Petroleum Hydrocarbons in Water
034	QR1	1	7	9	11	7

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

SE218963A

CLIENT DETAILS

Contact	Andrew Ibrahim
Client	EI AUSTRALIA
Address	SUITE 6.01 55 MILLER STREET PYRMONT NSW 2009
Telephone	61 2 95160722
Facsimile	(Not specified)
Email	andrew.ibrahim@eiaustralia.com.au
Project	**E25077 Hughes,Waratah,Wharf Melrose Pk**
Order Number	**E25077**
Samples	29

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	Fri 7/5/2021
Report Due	Mon 10/5/2021
SGS Reference	**SE218963A**

SUBMISSION DETAILS

This is to confirm that 29 samples were received on Friday 7/5/2021. Results are expected to be ready by COB Monday 10/5/2021. Please quote SGS reference SE218963A when making enquiries. Refer below for details relating to sample integrity upon receipt.

Samples clearly labelled	Yes	Complete documentation received	Yes
Sample container provider	SGS	Sample cooling method	Ice Bricks
Samples received in correct containers	Yes	Sample counts by matrix	4 Soil
Date documentation received	7/5/2021@4:09pm	Type of documentation received	Email
Samples received in good order	Yes	Samples received without headspace	N/A
Sample temperature upon receipt	10.0°C	Sufficient sample for analysis	Yes
Turnaround time requested	Next Day		

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

SAMPLE RECEIPT ADVICE

SE218963A

CLIENT DETAILS

Client EI AUSTRALIA

Project E25077 Hughes,Waratah,Wharf Melrose Pk

SUMMARY OF ANALYSIS

No.	Sample ID	Metals in TCLP Extract by ICPOES	PAH (Polynuclear Aromatic Hydrocarbons) in TCLP	TCLP (Toxicity Characteristic Leaching	TCLP (Toxicity Characteristic Leaching
005	30-BH101_4.4-4.5	2	-	6	-
012	30-BH104_0.4-0.5	-	4	-	6
017	30-BH106M_1.1-1.2	1	-	6	-
019	30-BH106M_3.4-3.5	1	-	6	-

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

SE218963ARE

CLIENT DETAILS

Contact	Andrew Ibrahim
Client	EI AUSTRALIA
Address	SUITE 6.01 55 MILLER STREET PYRMONT NSW 2009
Telephone	61 2 95160722
Facsimile	(Not specified)
Email	andrew.ibrahim@eiaustralia.com.au
Project	**E25077 Hughes,Waratah,Wharf Melrose Pk**
Order Number	**E25077**
Samples	29

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	Mon 10/5/2021
Report Due	Tue 11/5/2021
SGS Reference	**SE218963ARE**

SUBMISSION DETAILS

This is to confirm that 29 samples were received on Monday 10/5/2021. Results are expected to be ready by COB Tuesday 11/5/2021. Please quote SGS reference SE218963ARE when making enquiries. Refer below for details relating to sample integrity upon receipt.

Samples clearly labelled	Yes	Complete documentation received	Yes
Sample container provider	SGS	Sample cooling method	Ice Bricks
Samples received in correct containers	Yes	Sample counts by matrix	4 Soil
Date documentation received	10/5/2021	Type of documentation received	Email
Samples received in good order	Yes	Samples received without headspace	N/A
Sample temperature upon receipt	10.0°C	Sufficient sample for analysis	Yes
Turnaround time requested	Next Day		

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

SAMPLE RECEIPT ADVICE

SE218963ARE

CLIENT DETAILS

Client EI AUSTRALIA

Project E25077 Hughes,Waratah,Wharf Melrose Pk

SUMMARY OF ANALYSIS

No.	Sample ID	Metals in TCLP Extract by ICPOES	PAH (Polynuclear Aromatic Hydrocarbons) in TCLP	TCLP (Toxicity Characteristic Leaching	TCLP (Toxicity Characteristic Leaching
005	30-BH101_4.4-4.5	2	-	6	-
012	30-BH104_0.4-0.5	-	4	-	6
017	30-BH106M_1.1-1.2	1	-	6	-
019	30-BH106M_3.4-3.5	1	-	6	-

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

SE218964A

CLIENT DETAILS

Contact	Andrew Ibrahim
Client	EI AUSTRALIA
Address	SUITE 6.01 55 MILLER STREET PYRMONT NSW 2009
Telephone	61 2 95160722
Facsimile	(Not specified)
Email	andrew.ibrahim@eiaustralia.com.au
Project	**E25077 Hughes,Waratah,Wharf Melrose Pk**
Order Number	**E25077**
Samples	36

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	Fri 7/5/2021
Report Due	Mon 10/5/2021
SGS Reference	**SE218964A**

SUBMISSION DETAILS

This is to confirm that 36 samples were received on Friday 7/5/2021. Results are expected to be ready by COB Monday 10/5/2021. Please quote SGS reference SE218964A when making enquiries. Refer below for details relating to sample integrity upon receipt.

Samples clearly labelled	Yes	Complete documentation received	Yes
Sample container provider	SGS	Sample cooling method	Ice Bricks
Samples received in correct containers	Yes	Sample counts by matrix	5 Soil
Date documentation received	7/5/2021@4:10pm	Type of documentation received	Email
Samples received in good order	Yes	Samples received without headspace	Yes
Sample temperature upon receipt	10.0C	Sufficient sample for analysis	Yes
Turnaround time requested	Next Day		

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

SAMPLE RECEIPT ADVICE

SE218964A

CLIENT DETAILS

Client EI AUSTRALIA

Project E25077 Hughes,Waratah,Wharf Melrose Pk

SUMMARY OF ANALYSIS

No.	Sample ID	Metals in TCLP Extract by ICPOES	TCLP (Toxicity Characteristic Leaching
005	112-BH102_0.4-0.5	1	6
007	112-BH104_0.2-0.3	1	6

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

SE218964A

CLIENT DETAILS

Client EI AUSTRALIA

Project E25077 Hughes,Waratah,Wharf Melrose Pk

SUMMARY OF ANALYSIS

No.	Sample ID	Mercury in TCLP Extract	Metals in TCLP Extract by ICPOES	TCLP (Toxicity Characteristic Leaching
026	32-BH105_0.2-0.3	-	1	6
027	32-BH106_0.2-0.3	1	-	6
033	QD4	-	1	6

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 .

Sheet 1 of 1

Site:	Project No:
82 Hughes Ave, Ermington, 30-32 Waratah St and 112 Wharf Rd, Melrose Park	E25077

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	Sample Matrix: WATER	SOIL	OTHER
30-BH101_6.9-7.0	1	2x2LB	20/4/21	am/pm		X	
82-BH102M_5.4-5.5	2	↓	↓			↓	
30-BH106M_6.3-6.4	3		21/4/21				
30-BH110M_7.0-7.1	4		↓				
30-BH111M_6.9-7.0	5	↓	↓	↓		↓	

Analysis

HM A /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM A /TRH/BTEX/PAHs	HM A /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	Dewatering Suite	sPOCAS	PFAS	Sulphates	Chlorides	pH/pH Peroxide	TCLP HM A / PAH
														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

SGS EHS Sydney COC
SE218931

LABORATORY TURNAROUND
- ☐ 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

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: Andrew Schmidt	Print:
Signature:	Signature:
Date: 23/04/2021	Date: 23/4/21 2:50

Sampler's Comments:
Please cc:
Andrew.Ibrahim@eiaustralia.com.au

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

SE218931

CLIENT DETAILS

Contact	Andrew Ibrahim
Client	EI AUSTRALIA
Address	SUITE 6.01 55 MILLER STREET PYRMONT NSW 2009
Telephone	61 2 95160722
Facsimile	(Not specified)
Email	andrew.ibrahim@eiaustralia.com.au
Project	**E25077 Hughes, Waratah, Wharf Melrose Pk**
Order Number	**E25077**
Samples	5

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	Fri 23/4/2021
Report Due	Tue 27/4/2021
SGS Reference	**SE218931**

SUBMISSION DETAILS

This is to confirm that 5 samples were received on Friday 23/4/2021. Results are expected to be ready by COB Tuesday 27/4/2021. Please quote SGS reference SE218931 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Samples clearly labelled	Yes	Complete documentation received	Yes
Sample container provider	Client	Sample cooling method	Ice Bricks
Samples received in correct containers	Yes	Sample counts by matrix	5 Soil
Date documentation received	23/4/2021	Type of documentation received	COC
Samples received in good order	Yes	Samples received without headspace	N/A
Sample temperature upon receipt	2°C	Sufficient sample for analysis	Yes
Turnaround time requested	Two Days		

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

SAMPLE RECEIPT ADVICE

SE218931

CLIENT DETAILS

Client EI AUSTRALIA

Project E25077 Hughes, Waratah, Wharf Melrose Pk

SUMMARY OF ANALYSIS

No.	Sample ID	Field pH for Acid Sulphate Soil
001	30-BH101_6.9-7.0	4
002	82-BH102M_5.4-5.5	4
003	30-BH106M_6.3-6.4	4
004	30-BH110M_7.0-7.1	4
005	30-BH111M_6.9-7.0	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 .

Yin, Emily (Sydney)

From: Andrew Ibrahim - EIAustralia <andrew.ibrahim@eiaustralia.com.au>
Sent: Wednesday, 28 April 2021 1:04 PM
To: AU.SampleReceipt.Sydney (Sydney); AU.Environmental.Sydney (Sydney)
Subject: [EXTERNAL] RE: Report Job SE218931, your reference E25077 Hughes, Waratah, Wharf Melrose Pk, order number E25077

Hi SGS team,

Please test the following samples for SPOCAS on standard TAT:

1 ▪ 30-BH101_6.9-7.0
2 ▪ 82-BH102M_5.4-5.5
3 ▪ 30-BH106M_6.3-6.4
4 ▪ 30-BH110M_7.0-7.1

Thank you.

Kind regards,

Andrew Ibrahim
MEng. (Env), BEng. (Che)
Chemical / Environmental Engineer
T 02 9516 0722 M 0451224922
E andrew.ibrahim@eiaustralia.com.au
Suite 6.01, 55 Miller Street
Pyrmont, NSW 2009
www.eiaustralia.com.au

From: AU.Samplereceipt.Sydney@SGS.com [mailto:AU.Samplereceipt.Sydney@SGS.com]
Sent: Tuesday, 27 April 2021 12:20 PM
To: Andrew Ibrahim - EIAustralia; Andrew Schmidt - EIAustralia; Laboratory Results - EIAustralia
Subject: Report Job SE218931, your reference E25077 Hughes, Waratah, Wharf Melrose Pk, order number E25077

Dear Valued Customer,

Please find attached the report for SGS job SE218931, your reference E25077 Hughes, Waratah, Wharf Melrose Pk, order number E25077.

SAMPLE RECEIPT ADVICE

SE218931A

CLIENT DETAILS

Contact	Andrew Ibrahim
Client	EI AUSTRALIA
Address	SUITE 6.01 55 MILLER STREET PYRMONT NSW 2009
Telephone	61 2 95160722
Facsimile	(Not specified)
Email	andrew.ibrahim@eiaustralia.com.au
Project	**E25077 Hughes, Waratah, Wharf Melrose Pk**
Order Number	**E25077**
Samples	5

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 28/4/2021
Report Due	Thu 6/5/2021
SGS Reference	**SE218931A**

SUBMISSION DETAILS

This is to confirm that 5 samples were received on Wednesday 28/4/2021. Results are expected to be ready by COB Thursday 6/5/2021.
Please quote SGS reference SE218931A when making enquiries. Refer below for details relating to sample integrity upon receipt.

Samples clearly labelled	Yes	Complete documentation received	Yes
Sample container provider	Client	Sample cooling method	Ice Bricks
Samples received in correct containers	Yes	Sample counts by matrix	4 Soil
Date documentation received	28/4/2021@1:04pm	Type of documentation received	COC
Samples received in good order	Yes	Samples received without headspace	N/A
Sample temperature upon receipt	2°C	Sufficient sample for analysis	Yes
Turnaround time requested	Standard		

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

SPOCAS subcontracted to SGS Cairns, 2/58 Comport St, Portsmith QLD 4870, NATA Accreditation Number: 2562, Site Number: 3146. Repoprt Number CE152374

SAMPLE RECEIPT ADVICE

SE218931A

CLIENT DETAILS

Client EI AUSTRALIA

Project E25077 Hughes, Waratah, Wharf Melrose Pk

SUMMARY OF ANALYSIS

No.	Sample ID	Moisture Content	SPOCAS Net Acidity Calculations	TAA (Titratable Actual Acidity)	TPA (Titratable Peroxide Acidity)
001	30-BH101_6.9-7.0	1	6	7	21
002	82-BH102M_5.4-5.5	1	6	7	21
003	30-BH106M_6.3-6.4	1	6	7	21
004	30-BH110M_7.0-7.1	1	6	7	21

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 .

Sheet 1 of 2

Site: 82 Hughes Ave, 30-32 Waratah St, 112 Wharf Rd, Melrose Park NSW

Project No: E25077

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	Sample Matrix: WATER	SOIL	OTHER	HM A /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM A /TRH/BTEX/PAHs	HM A /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	Dewatering Suite	sPOCAS	PFAS	Sulphates	Chlorides	1,4-Dioxane	TCLP HM A / PAH
GW-B2-BH102M-1	1	S,P, VnVC	30/4/21	am/pm	X				X			X										X	
GW-E1-MW01-1	2	↓	↓	↓	↓				↓			↓										↓	
GW-E1-MW03-1	3																						
GW-30-BH102M-1	4																						
GW-30-BH106M-1	5																						
GW-30-BH110M-1	6																						
GW-30-BH111M-1	7																						
GW-112-BH113M-1	8	↓																					
GW-QD1	9	S,P,2xVC								X													
GW-QR1	10	S,P,2xVC								X													
GW-QRB1		↓	↓	↓																			
GW-QTB1	11	VC	Lab Prepared		↓						X												

SGS EHS Sydney COC
SE219196

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

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

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: Andrew Schmidt	Print: M Bousquet
Signature: A.Schmidt	Signature:
Date: 3/05/2021	Date: 3-5-21 3:20

Sampler's Comments:
Please cc:
Andrew.Ibrahim@eiaustralia.com.au

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 March 2018 FORM v.4 - SGS

E-MAILED
4-5-21 10:06AM

Sheet 2 of 2

Site:	Project No:
82 Hughes Ave, 30-32 Waratah St, 112 Wharf Rd, Melrose Park NSW	E25077

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	Sample Matrix: WATER	SOIL	OTHER	Analysis: HM [A] /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM [A] /TRH/BTEX/PAHs	HM [A] /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	Dewatering Suite	sPOCAS	PFAS	Sulphates	Chlorides		TCLP HM A / PAH
GW-QTS1	12	VC	Lab Prepared		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

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 botlle
P = natural HDPE plastic bottle
VC = glass vial, Tefton Septum
ZLB = Zip-Lock Bag

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: Andrew Schmidt	Print: M.Boursaget
Signature:	Signature:
Date: 3/05/2021	Date: 3.5.21 3:20

Sampler's Comments:
Please cc:
Andrew.Ibrahim@eiaustralia.com.au

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

SE219196

CLIENT DETAILS

Contact	Andrew Schmidt
Client	EI AUSTRALIA
Address	SUITE 6.01 55 MILLER STREET PYRMONT NSW 2009
Telephone	61 2 95160722
Facsimile	(Not specified)
Email	andrew.schmidt@eiaustralia.com.au
Project	**E25077 82 Hughes Ave, 30-32 Waratah St,**
Order Number	**E25077**
Samples	12

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	Mon 3/5/2021
Report Due	Mon 10/5/2021
SGS Reference	**SE219196**

SUBMISSION DETAILS

This is to confirm that 12 samples were received on Monday 3/5/2021. Results are expected to be ready by COB Monday 10/5/2021. Please quote SGS reference SE219196 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Samples clearly labelled	Yes	Complete documentation received	Yes
Sample container provider	SGS	Sample cooling method	Ice Bricks
Samples received in correct containers	Yes	Sample counts by matrix	12 Water`
Date documentation received	4/5/2021@10:06am	Type of documentation received	COC
Samples received in good order	Yes	Samples received without headspace	Yes
Sample temperature upon receipt	10.0°C	Sufficient sample for analysis	Yes
Turnaround time requested	Standard		

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

1,4-Dioxan subcontracted to SGS Melbourne, 10/585 Blackburn Road, Notting Hill, VIC, NATA Accreditation Numbe. 2562/14420.

SAMPLE RECEIPT ADVICE

SE219196

CLIENT DETAILS

Client EI AUSTRALIA

Project E25077 82 Hughes Ave, 30-32 Waratah St,

SUMMARY OF ANALYSIS

No.	Sample ID	Mercury (dissolved) in Water	PAH (Polynuclear Aromatic Hydrocarbons) in Water	Trace Metals (Dissolved) in Water by ICPMS	TRH (Total Recoverable Hydrocarbons) in Water	VOCs in Water	Volatile Petroleum Hydrocarbons in Water
001	GW-82_BH102M-1	1	22	7	9	78	7
002	GW-Ei_MW01-1	1	22	7	9	78	7
003	GW-Ei_MW03-1	1	22	7	9	78	7
004	GW-30_BH102M-1	1	22	7	9	78	7
005	GW-30_BH106M-1	1	22	7	9	78	7
006	GW-30_BH110M-1	1	22	7	9	78	7
007	GW-30_BH111M-1	1	22	7	9	78	7
008	GW-112_BH113M-1	1	22	7	9	78	7
009	GW_QD1	1	-	7	9	11	7
010	GW_QR1	1	-	7	9	11	7
011	GW_QTB1	-	-	-	-	11	-
012	GW_QTS1	-	-	-	-	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

SE219196

CLIENT DETAILS

Client EI AUSTRALIA

Project E25077 82 Hughes Ave, 30-32 Waratah St,

SUMMARY OF ANALYSIS

No.	Sample ID	USEPA 8260B Additional VOCs in water
001	GW-82_BH102M-1	1
002	GW-Ei_MW01-1	1
003	GW-Ei_MW03-1	1
004	GW-30_BH102M-1	1
005	GW-30_BH106M-1	1
006	GW-30_BH110M-1	1
007	GW-30_BH111M-1	1
008	GW-112_BH113M-1	1

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

Sheet 1 of 1

Site:	Project No:
82 Hughes Ave, 30-32 Waratah St, 112 Wharf Rd, Melrose Park NSW	E25077

Laboratory: Eurofins Environment Testing Aust. P/L
6 / 16 Mars Road,
Lane Cove NSW 2066
P: 02 9900 8400

Sample ID	Laboratory ID	Container Type	Sampling Date	Sampling Time	Sample Matrix: WATER	SOIL	OTHERS (i.e. Fibro, Paint, etc.)	Analysis: HM [A] /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM [A] /TRH/BTEX/PAHs	HM [A] /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	Dewatering Suite	sPOCAS	PFAS				TCLP HM [B] / PAH
GW-32-BH102M-1		P	30/4/21	am/pm	X													•	X				
GW-EI-MW01-1		↓	↓	↓	↓														↓				
GW-EI-MW03-1																							
GW-30-BH102M-1																							
GW-30-BH106M-1																							
GW-30-BH110M-1																		•					
GW-30-BH111M-1																							
GW-32-BH104M-1																							
GW-112-BH113M-1		↓	↓	↓	↓														↓				
																		•					

Comments

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

HM [B]
Arsenic
Cadmium
Chromium
Lead
Mercury
Nickel

Dewatering Suite
pH & EC
TDS / Turbidity NTU
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

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 (Eurofins):
Print: Andrew Schmidt	Print:
Signature:	Signature:
Date: 3/05/2021	Date:

Sampler's Comments:
Please cc:
Andrew.Ibrahim@eiaustralia.com.au

Date/Time: 7.5.21 9:30
Chilled: Yes / No
Temp: 8.6
Correction: 0.2
Final Temp: 8.8

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

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

793536

eurofins | Environment Testing

ABN: 50 005 085 521 www.eurofins.com.au EnviroSales@eurofins.com

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
46-48 Banksia Road
Welshpool WA 6106
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Sample Receipt Advice

Company name:	EI Australia
Contact name:	Andrew Ibrahim
Project name:	Not provided
Project ID:	E25077
Turnaround time:	5 Day
Date/Time received	May 7, 2021 9:30 AM
Eurofins reference	793536

Sample Information

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

Notes

Contact

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

Elvis Dsouza on phone : or by email: ElvisDsouza@eurofins.com

Results will be delivered electronically via email to Andrew Ibrahim - andrew.ibrahim@eiaustralia.com.au.

Global Leader - Results you can trust

Sheet 1 of 1

Site:	Project No:
82 Hughes Ave, 30-32 Waratah St, 112 Wharf Rd, Melrose Park NSW	E25077

Laboratory: Eurofins Environment Testing Aust. P/L
6 / 16 Mars Road,
Lane Cove NSW 2066
P: 02 9900 8400

Sample ID	Laboratory ID	Container Type	Sampling Date	Sampling Time	Sample Matrix: WATER	SOIL	OTHERS (i.e. Fibro, Paint, etc.)	Analysis: HM [A] /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM [A] /TRH/BTEX/PAHs	HM [A] /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	Dewatering Suite	sPOCAS	PFAS				TCLP HM [B] / PAH
GW-32-BH102M-1		P	30/4/21	am/pm	X													•	X				
GW-EI-MW01-1		↓	↓	↓	↓														↓				
GW-EI-MW03-1																							
GW-30-BH102M-1																							
GW-30-BH106M-1																							
GW-30-BH110M-1																		•					
GW-30-BH111M-1																							
GW-32-BH104M-1																							
GW-112-BH113M-1		↓	↓	↓	↓														↓				
																		•					

Comments

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

HM [B]
Arsenic
Cadmium
Chromium
Lead
Mercury
Nickel

Dewatering Suite
pH & EC
TDS / Turbidity NTU
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

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 (Eurofins):
Print: Andrew Schmidt	Print:
Signature:	Signature:
Date: 3/05/2021	Date:

Sampler's Comments:
Please cc:
Andrew.Ibrahim@eiaustralia.com.au

Date/Time: 7.5.21 9:30
Chilled: Yes / No
Temp: 8.6
Correction: 0.2
Final Temp: 8.8

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

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

793536

eurofins | Environment Testing

ABN: 50 005 085 521 www.eurofins.com.au EnviroSales@eurofins.com

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
46-48 Banksia Road
Welshpool WA 6106
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Sample Receipt Advice

Company name:	EI Australia
Contact name:	Andrew Ibrahim
Project name:	Not provided
Project ID:	E25077
Turnaround time:	5 Day
Date/Time received	May 7, 2021 9:30 AM
Eurofins reference	793536

Sample Information

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

Notes

Contact

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

Elvis Dsouza on phone : or by email: ElvisDsouza@eurofins.com

Results will be delivered electronically via email to Andrew Ibrahim - andrew.ibrahim@eiaustralia.com.au.

Global Leader - Results you can trust

COC received: 26/4/21, 1600

Sheet 1 of 1

Site: 82 Hughes Ave, Ermington, 30-32 Waratah St and 112 Wharf Rd, Melrose Park

Project No: E25077

Laboratory: **Envirolab Services**
12 Ashley Street,
CHATSWOOD NSW 2067
P: 02 9910 6200

Sample ID	Laboratory ID	Container Type	Sampling Date	Sampling Time	Sample Matrix: WATER	SOIL	OTHERS (i.e. Fibro, Paint, etc.)	Analysis: HM [A] /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM [A] /TRH/BTEX/PAHs	HM [A] /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	Dewatering Suite	sPOCAS	PFAS				TCLP HM [B] / PAH
QT1	1	J	20/4/21	am/pm		X			X														
QT2	2	"	22/4/21	"		"			X														
QT3	3	"	"	"		"												•					
QT4	4	"	"	"		"																	

Comments

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

HM [B]
Arsenic
Cadmium
Chromium
Lead
Mercury
Nickel

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

ENVIROLAB Services
Chatswood NSW
Ph: (02) 9910
Job No: 267639
Date Received: 23/4/21
Time Received: 1610
Received By: AB
Temp: Cool/Ambient
Cooling: Ice/Icepack
Sec

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

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 (Envirolab)
Print: Andrew Schmidt	Print: A-BUI
Signature:	Signature:
Date: 23/04/21	Date: 23/4/21

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

Sampler's Comments:
Please cc:
Andrew.Ibrahim@eiaustralia.com.au

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

Sheet 1 of 1

Site: 82 Hughes Ave, 30-32 Waratah St, 112 Wharf Rd, Melrose Park NSW

Project No: E25077

Laboratory: **Envirolab Services**
12 Ashley Street,
CHATSWOOD NSW 2067
P: 02 9910 6200

Sample ID	Laboratory ID	Container Type	Sampling Date	Sampling Time	Sample Matrix: WATER	SOIL	OTHERS (i.e. Fibro, Paint, etc.)	Analysis: HM [A] /TRH/BTEX/PAHs OCP/OP/PCB/Asbestos	HM [A] /TRH/BTEX/PAHs	HM [A] /TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	Dewatering Suite	sPOCAS	PFAS				TCLP HM [B] / PAH
GW-BT1	1	S/P, 4xVC	30/4/21	am/pm	X					X													

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 208247

Date Received: 14/05/2021
Time Received: 1000
Received By: MT
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Comments

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

HM [B]
Arsenic
Cadmium
Chromium
Lead
Mercury
Nickel

Dewatering Suite
pH & EC
TDS / Turbidity NTU
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

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 (Envirolab)
Print: Andrew Schmidt	Print: Ming Yan Zo
Signature:	Signature: MT.
Date: 3/05/2021	Date: 04/05/2021.

Sampler's Comments:
Please cc:
Andrew.Ibrahim@eiaustralia.com.au

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

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	EI Australia
Attention	Lab Email

Sample Login Details

Your reference	E25077, Melrose Park
Envirolab Reference	268247
Date Sample Received	04/05/2021
Date Instructions Received	04/05/2021
Date Results Expected to be Reported	11/05/2021

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	1 Water
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	16.0
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

Sample ID	vTRH(C6-C10)/BTEXN in Water	svTRH (C10-C40) in Water	HM in water - dissolved
GW-QT1	✓	✓	✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.
Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.
TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

Appendix J - Laboratory Analytical Reports

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Andrew Ibrahim
Client	EI AUSTRALIA
Address	SUITE 6.01 55 MILLER STREET PYRMONT NSW 2009
Telephone	61 2 95160722
Facsimile	(Not specified)
Email	andrew.ibrahim@eiaustralia.com.au
Project	**E25077 Hughes,Waratah,Wharf Melrose Pk**
Order Number	**E25077**
Samples	29

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	**SE218963 R0**
Date Received	23/4/2021
Date Reported	4/5/2021

COMMENTS

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

PFAS subcontracted to SGS Melbourne, Unit 10/585 Blackburn Road Notting Hill VIC 3168, NATA Accreditation Number 2562, Site number 14420. Final report No: ME320181

No respirable fibres detected in all soil samples using trace analysis technique.

Asbestos analysed by Approved Identifier Ravee Sivasubramaniam .

SIGNATORIES

Akheeqar BENIAMEEN
Chemist

Bennet LO
Senior Organic Chemist/Metals Chemist

Dong LIANG
Metals/Inorganics Team Leader

Huong CRAWFORD
Production Manager

Ly Kim HA
Organic Section Head

Ravee SIVASUBRAMANIAM
Hygiene Team Leader

VOC's in Soil [AN433] Tested: 27/4/2021

PARAMETER	UOM	LOR	82_BH102M_0.4-0.6 SOIL - 20/4/2021 SE218963.001	30-BH101_0.2-0.3 SOIL - 20/4/2021 SE218963.002	30-BH101_0.5-0.6 SOIL - 20/4/2021 SE218963.003	30-BH101_0.9-1.0 SOIL - 20/4/2021 SE218963.004	30-BH101_4.4-4.5 SOIL - 20/4/2021 SE218963.005
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	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	30-BH102M_0.2-0.3 SOIL - 20/4/2021 SE218963.006	30-BH102M_0.5-0.6 SOIL - 20/4/2021 SE218963.007	30-BH102M_2.0-2.1 SOIL - 20/4/2021 SE218963.008	30-BH102M_4.0-4.1 SOIL - 20/4/2021 SE218963.009	30-BH103_0.3-0.4 SOIL - 20/4/2021 SE218963.010
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	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	30-BH103_0.9-1.0 SOIL - 20/4/2021 SE218963.011	30-BH104_0.4-0.5 SOIL - 20/4/2021 SE218963.012	30-BH104_2.0-2.1 SOIL - 20/4/2021 SE218963.013	30-BH104_2.7-2.5 SOIL - 20/4/2021 SE218963.014	30-BH105_0.4-0.5 SOIL - 20/4/2021 SE218963.015
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	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	30-BH106M_0.3-0.4 SOIL - 21/4/2021 SE218963.016	30-BH106M_1.1-1.2 SOIL - 21/4/2021 SE218963.017	30-BH106M_1.9-2.0 SOIL - 21/4/2021 SE218963.018	30-BH106M_3.4-3.5 SOIL - 21/4/2021 SE218963.019	30-BH107_0.3-0.4 SOIL - 21/4/2021 SE218963.020
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	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

VOC's in Soil [AN433] Tested: 27/4/2021 (continued)

PARAMETER	UOM	LOR	30-BH107_0.9-1.0 SOIL - 21/4/2021 SE218963.021	30-BH107_2.3-2.4 SOIL - 21/4/2021 SE218963.022	30-BH108_0.2-0.3 SOIL - 21/4/2021 SE218963.023	30-BH108_0.4-0.5 SOIL - 21/4/2021 SE218963.024	30-BH108_1.2-1.3 SOIL - 21/4/2021 SE218963.025
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	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	30-BH108_2.7-2.8 SOIL - 21/4/2021 SE218963.026	30-BH109_0.3-0.4 SOIL - 21/4/2021 SE218963.027	30-BH110M_0.2-0.3 SOIL - 21/4/2021 SE218963.028	30-BH110M_1.4-1.5 SOIL - 21/4/2021 SE218963.029
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	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
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
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	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1

Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 27/4/2021

PARAMETER	UOM	LOR	82_BH102M_0.4-0.6 SOIL - 20/4/2021 SE218963.001	30-BH101_0.2-0.3 SOIL - 20/4/2021 SE218963.002	30-BH101_0.5-0.6 SOIL - 20/4/2021 SE218963.003	30-BH101_0.9-1.0 SOIL - 20/4/2021 SE218963.004	30-BH101_4.4-4.5 SOIL - 20/4/2021 SE218963.005
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	30-BH102M_0.2-0.3 SOIL - 20/4/2021 SE218963.006	30-BH102M_0.5-0.6 SOIL - 20/4/2021 SE218963.007	30-BH102M_2.0-2.1 SOIL - 20/4/2021 SE218963.008	30-BH102M_4.0-4.1 SOIL - 20/4/2021 SE218963.009	30-BH103_0.3-0.4 SOIL - 20/4/2021 SE218963.010
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	30-BH103_0.9-1.0 SOIL - 20/4/2021 SE218963.011	30-BH104_0.4-0.5 SOIL - 20/4/2021 SE218963.012	30-BH104_2.0-2.1 SOIL - 20/4/2021 SE218963.013	30-BH104_2.7-2.5 SOIL - 20/4/2021 SE218963.014	30-BH105_0.4-0.5 SOIL - 20/4/2021 SE218963.015
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	30-BH106M_0.3-0.4 SOIL - 21/4/2021 SE218963.016	30-BH106M_1.1-1.2 SOIL - 21/4/2021 SE218963.017	30-BH106M_1.9-2.0 SOIL - 21/4/2021 SE218963.018	30-BH106M_3.4-3.5 SOIL - 21/4/2021 SE218963.019	30-BH107_0.3-0.4 SOIL - 21/4/2021 SE218963.020
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	30-BH107_0.9-1.0 SOIL - 21/4/2021 SE218963.021	30-BH107_2.3-2.4 SOIL - 21/4/2021 SE218963.022	30-BH108_0.2-0.3 SOIL - 21/4/2021 SE218963.023	30-BH108_0.4-0.5 SOIL - 21/4/2021 SE218963.024	30-BH108_1.2-1.3 SOIL - 21/4/2021 SE218963.025
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	30-BH108_2.7-2.8 SOIL - 21/4/2021 SE218963.026	30-BH109_0.3-0.4 SOIL - 21/4/2021 SE218963.027	30-BH110M_0.2-0.3 SOIL - 21/4/2021 SE218963.028	30-BH110M_1.4-1.5 SOIL - 21/4/2021 SE218963.029
TRH C6-C9	mg/kg	20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 27/4/2021

PARAMETER	UOM	LOR	82_BH102M_0.4-0.6 SOIL - 20/4/2021 SE218963.001	30-BH101_0.2-0.3 SOIL - 20/4/2021 SE218963.002	30-BH101_0.5-0.6 SOIL - 20/4/2021 SE218963.003	30-BH101_0.9-1.0 SOIL - 20/4/2021 SE218963.004	30-BH101_4.4-4.5 SOIL - 20/4/2021 SE218963.005
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	30-BH102M_0.2-0.3 SOIL - 20/4/2021 SE218963.006	30-BH102M_0.5-0.6 SOIL - 20/4/2021 SE218963.007	30-BH102M_2.0-2.1 SOIL - 20/4/2021 SE218963.008	30-BH102M_4.0-4.1 SOIL - 20/4/2021 SE218963.009	30-BH103_0.3-0.4 SOIL - 20/4/2021 SE218963.010
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	**89**	<45	<45	**120**	<45
TRH C29-C36	mg/kg	45	**76**	<45	<45	**170**	<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	**240**	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	**170**	<110	<110	**290**	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	**240**	<210

PARAMETER	UOM	LOR	30-BH103_0.9-1.0 SOIL - 20/4/2021 SE218963.011	30-BH104_0.4-0.5 SOIL - 20/4/2021 SE218963.012	30-BH104_2.0-2.1 SOIL - 20/4/2021 SE218963.013	30-BH104_2.7-2.5 SOIL - 20/4/2021 SE218963.014	30-BH105_0.4-0.5 SOIL - 20/4/2021 SE218963.015
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	**81**	<45	<45	<45	<45
TRH C29-C36	mg/kg	45	**140**	<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	**170**	<90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	**150**	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	**220**	<110	<110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	**310**	<210	<210	<210	<210

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 27/4/2021 (continued)

PARAMETER	UOM	LOR	30-BH106M_0.3-0.4 SOIL - 21/4/2021 SE218963.016	30-BH106M_1.1-1.2 SOIL - 21/4/2021 SE218963.017	30-BH106M_1.9-2.0 SOIL - 21/4/2021 SE218963.018	30-BH106M_3.4-3.5 SOIL - 21/4/2021 SE218963.019	30-BH107_0.3-0.4 SOIL - 21/4/2021 SE218963.020
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	**130**	**50**	<45	<45
TRH C29-C36	mg/kg	45	<45	**110**	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	**27**	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	**27**	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	**190**	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	**240**	<110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	**220**	<210	<210	<210

PARAMETER	UOM	LOR	30-BH107_0.9-1.0 SOIL - 21/4/2021 SE218963.021	30-BH107_2.3-2.4 SOIL - 21/4/2021 SE218963.022	30-BH108_0.2-0.3 SOIL - 21/4/2021 SE218963.023	30-BH108_0.4-0.5 SOIL - 21/4/2021 SE218963.024	30-BH108_1.2-1.3 SOIL - 21/4/2021 SE218963.025
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	30-BH108_2.7-2.8 SOIL - 21/4/2021 SE218963.026	30-BH109_0.3-0.4 SOIL - 21/4/2021 SE218963.027	30-BH110M_0.2-0.3 SOIL - 21/4/2021 SE218963.028	30-BH110M_1.4-1.5 SOIL - 21/4/2021 SE218963.029
TRH C10-C14	mg/kg	20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	**88**	<45	<45	<45
TRH C29-C36	mg/kg	45	**200**	<45	<45	<45
TRH C37-C40	mg/kg	100	**170**	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	**200**	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	**260**	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	**290**	<110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	**460**	<210	<210	<210

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 27/4/2021

PARAMETER	UOM	LOR	82_BH102M_0.4-0.6 SOIL - 20/4/2021 SE218963.001	30-BH101_0.2-0.3 SOIL - 20/4/2021 SE218963.002	30-BH101_0.5-0.6 SOIL - 20/4/2021 SE218963.003	30-BH101_0.9-1.0 SOIL - 20/4/2021 SE218963.004	30-BH101_4.4-4.5 SOIL - 20/4/2021 SE218963.005
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	0.2	<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	0.8	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	0.2	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	0.8	<0.1	0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	0.8	<0.1	0.2	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	0.4	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	0.4	<0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	0.4	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	0.2	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	0.4	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.2	<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	0.2	<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	0.5	<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	0.6	<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	0.6	<0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	5.0	<0.8	<0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	5.0	<0.8	<0.8	<0.8	<0.8

PARAMETER	UOM	LOR	30-BH102M_0.2-0.3 SOIL - 20/4/2021 SE218963.006	30-BH102M_0.5-0.6 SOIL - 20/4/2021 SE218963.007	30-BH102M_2.0-2.1 SOIL - 20/4/2021 SE218963.008	30-BH102M_4.0-4.1 SOIL - 20/4/2021 SE218963.009	30-BH103_0.3-0.4 SOIL - 20/4/2021 SE218963.010
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	0.3	<0.1	0.3
Pyrene	mg/kg	0.1	0.2	<0.1	0.3	<0.1	0.4
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	0.1	<0.1	0.2
Chrysene	mg/kg	0.1	<0.1	<0.1	0.2	<0.1	0.2
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	0.2	<0.1	0.3
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	0.2
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	0.1	<0.1	0.2
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	0.2
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	<0.2	<0.2	0.2	<0.2	0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	<0.3	<0.3	0.3	<0.3	0.4
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	<0.2	<0.2	0.3	<0.2	0.3
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	1.8	<0.8	2.0
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	1.8	<0.8	2.0

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 27/4/2021 (continued)

PARAMETER	UOM	LOR	30-BH103_0.9-1.0 SOIL - 20/4/2021 SE218963.011	30-BH104_0.4-0.5 SOIL - 20/4/2021 SE218963.012	30-BH104_2.0-2.1 SOIL - 20/4/2021 SE218963.013	30-BH104_2.7-2.5 SOIL - 20/4/2021 SE218963.014	30-BH105_0.4-0.5 SOIL - 20/4/2021 SE218963.015
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	**0.3**	**0.3**	<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	**0.5**	**0.8**	**0.1**	<0.1	<0.1
Pyrene	mg/kg	0.1	**0.6**	**0.8**	**0.2**	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	**0.2**	**0.5**	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	**0.2**	**0.6**	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	**0.2**	**1.0**	**0.1**	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	**0.1**	**0.5**	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	**0.2**	**0.9**	**0.1**	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	**0.1**	**1.0**	**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**	**1.1**	**0.1**	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	**0.2**	**1.3**	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	**0.3**	**1.4**	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	**0.3**	**1.3**	**0.2**	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	**2.5**	**7.7**	**0.9**	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	**2.5**	**7.7**	**0.9**	<0.8	<0.8

PARAMETER	UOM	LOR	30-BH106M_0.3-0.4 SOIL - 21/4/2021 SE218963.016	30-BH106M_1.1-1.2 SOIL - 21/4/2021 SE218963.017	30-BH106M_1.9-2.0 SOIL - 21/4/2021 SE218963.018	30-BH106M_3.4-3.5 SOIL - 21/4/2021 SE218963.019	30-BH107_0.3-0.4 SOIL - 21/4/2021 SE218963.020
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	**0.5**	<0.1	<0.1	<0.1	**0.1**
Pyrene	mg/kg	0.1	**0.5**	<0.1	<0.1	<0.1	**0.2**
Benzo(a)anthracene	mg/kg	0.1	**0.3**	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	**0.3**	<0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	**0.3**	<0.1	<0.1	<0.1	**0.1**
Benzo(k)fluoranthene	mg/kg	0.1	**0.2**	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	**0.3**	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	**0.2**	<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	**0.2**	<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	**0.4**	<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	**0.5**	<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	**0.5**	<0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	**3.0**	<0.8	<0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	**3.0**	<0.8	<0.8	<0.8	<0.8

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 27/4/2021 (continued)

PARAMETER	UOM	LOR	30-BH107_0.9-1.0 SOIL - 21/4/2021 SE218963.021	30-BH107_2.3-2.4 SOIL - 21/4/2021 SE218963.022	30-BH108_0.2-0.3 SOIL - 21/4/2021 SE218963.023	30-BH108_0.4-0.5 SOIL - 21/4/2021 SE218963.024	30-BH108_1.2-1.3 SOIL - 21/4/2021 SE218963.025
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	30-BH108_2.7-2.8 SOIL - 21/4/2021 SE218963.026	30-BH109_0.3-0.4 SOIL - 21/4/2021 SE218963.027	30-BH110M_0.2-0.3 SOIL - 21/4/2021 SE218963.028	30-BH110M_1.4-1.5 SOIL - 21/4/2021 SE218963.029
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	**0.1**	**0.3**	**0.1**	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	**0.3**	**1.2**	**0.2**	<0.1
Pyrene	mg/kg	0.1	**0.4**	**1.3**	**0.3**	<0.1
Benzo(a)anthracene	mg/kg	0.1	**0.1**	**0.6**	**0.1**	<0.1
Chrysene	mg/kg	0.1	**0.2**	**0.7**	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	**0.2**	**1.1**	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	**0.1**	**0.5**	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	**0.2**	**0.8**	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	**0.1**	**0.7**	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	**0.1**	**0.8**	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	**0.2**	**1.1**	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	**0.3**	**1.2**	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	**0.3**	**1.1**	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	**1.8**	**7.9**	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	**1.8**	**7.9**	<0.8	<0.8

OC Pesticides in Soil [AN420] Tested: 27/4/2021

PARAMETER	UOM	LOR	30-BH101_0.2-0.3 SOIL - 20/4/2021 SE218963.002	30-BH102M_0.2-0.3 SOIL - 20/4/2021 SE218963.006	30-BH103_0.3-0.4 SOIL - 20/4/2021 SE218963.010	30-BH104_0.4-0.5 SOIL - 20/4/2021 SE218963.012	30-BH105_0.4-0.5 SOIL - 20/4/2021 SE218963.015
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	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

OC Pesticides in Soil [AN420] Tested: 27/4/2021 (continued)

PARAMETER	UOM	LOR	30-BH106M_0.3-0.4 SOIL - 21/4/2021 SE218963.016	30-BH108_0.2-0.3 SOIL - 21/4/2021 SE218963.023
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1
Lindane	mg/kg	0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1
o,p'-DDE	mg/kg	0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1
trans-Nonachlor	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
Endrin	mg/kg	0.2	<0.2	<0.2
o,p'-DDD	mg/kg	0.1	<0.1	<0.1
o,p'-DDT	mg/kg	0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1
Endrin Ketone	mg/kg	0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<1

OP Pesticides in Soil [AN420] Tested: 27/4/2021

PARAMETER	UOM	LOR	30-BH101_0.2-0.3 SOIL - 20/4/2021 SE218963.002	30-BH102M_0.2-0.3 SOIL - 20/4/2021 SE218963.006	30-BH103_0.3-0.4 SOIL - 20/4/2021 SE218963.010	30-BH104_0.4-0.5 SOIL - 20/4/2021 SE218963.012	30-BH105_0.4-0.5 SOIL - 20/4/2021 SE218963.015
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	30-BH106M_0.3-0.4 SOIL - 21/4/2021 SE218963.016	30-BH108_0.2-0.3 SOIL - 21/4/2021 SE218963.023
Dichlorvos	mg/kg	0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7

PCBs in Soil [AN420] Tested: 27/4/2021

PARAMETER	UOM	LOR	30-BH101_0.2-0.3 SOIL - 20/4/2021 SE218963.002	30-BH102M_0.2-0.3 SOIL - 20/4/2021 SE218963.006	30-BH103_0.3-0.4 SOIL - 20/4/2021 SE218963.010	30-BH104_0.4-0.5 SOIL - 20/4/2021 SE218963.012	30-BH105_0.4-0.5 SOIL - 20/4/2021 SE218963.015
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	30-BH106M_0.3-0.4 SOIL - 21/4/2021 SE218963.016	30-BH108_0.2-0.3 SOIL - 21/4/2021 SE218963.023
Arochlor 1016	mg/kg	0.2	<0.2	<0.2
Arochlor 1221	mg/kg	0.2	<0.2	<0.2
Arochlor 1232	mg/kg	0.2	<0.2	<0.2
Arochlor 1242	mg/kg	0.2	<0.2	<0.2
Arochlor 1248	mg/kg	0.2	<0.2	<0.2
Arochlor 1254	mg/kg	0.2	<0.2	<0.2
Arochlor 1260	mg/kg	0.2	<0.2	<0.2
Arochlor 1262	mg/kg	0.2	<0.2	<0.2
Arochlor 1268	mg/kg	0.2	<0.2	<0.2
Total PCBs (Arochlors)	mg/kg	1	<1	<1

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 30/4/2021

PARAMETER	UOM	LOR	82_BH102M_0.4-0.6 SOIL - 20/4/2021 SE218963.001	30-BH101_0.2-0.3 SOIL - 20/4/2021 SE218963.002	30-BH101_0.5-0.6 SOIL - 20/4/2021 SE218963.003	30-BH101_0.9-1.0 SOIL - 20/4/2021 SE218963.004	30-BH101_4.4-4.5 SOIL - 20/4/2021 SE218963.005
Arsenic, As	mg/kg	1	5	4	5	9	2300
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	16	0.5	17
Chromium, Cr	mg/kg	0.5	10	18	22	17	95
Copper, Cu	mg/kg	0.5	24	8.2	120	6.4	1400
Lead, Pb	mg/kg	1	42	11	740	190	1600
Nickel, Ni	mg/kg	0.5	5.7	12	21	6.7	32
Zinc, Zn	mg/kg	2	55	20	360	99	1300

PARAMETER	UOM	LOR	30-BH102M_0.2-0.3 SOIL - 20/4/2021 SE218963.006	30-BH102M_0.5-0.6 SOIL - 20/4/2021 SE218963.007	30-BH102M_2.0-2.1 SOIL - 20/4/2021 SE218963.008	30-BH102M_4.0-4.1 SOIL - 20/4/2021 SE218963.009	30-BH103_0.3-0.4 SOIL - 20/4/2021 SE218963.010
Arsenic, As	mg/kg	1	20	14	200	15	5
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	1.9	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	4.1	27	7.4	9.0	2.4
Copper, Cu	mg/kg	0.5	18	12	130	52	5.7
Lead, Pb	mg/kg	1	66	98	490	110	19
Nickel, Ni	mg/kg	0.5	1.5	4.8	3.5	9.1	1.0
Zinc, Zn	mg/kg	2	35	54	140	120	15

PARAMETER	UOM	LOR	30-BH103_0.9-1.0 SOIL - 20/4/2021 SE218963.011	30-BH104_0.4-0.5 SOIL - 20/4/2021 SE218963.012	30-BH104_2.0-2.1 SOIL - 20/4/2021 SE218963.013	30-BH104_2.7-2.5 SOIL - 20/4/2021 SE218963.014	30-BH105_0.4-0.5 SOIL - 20/4/2021 SE218963.015
Arsenic, As	mg/kg	1	6	2	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	11	7.6	15	10	9.5
Copper, Cu	mg/kg	0.5	16	18	12	19	23
Lead, Pb	mg/kg	1	120	75	110	280	53
Nickel, Ni	mg/kg	0.5	3.4	4.5	5.7	7.4	13
Zinc, Zn	mg/kg	2	83	110	82	140	100

PARAMETER	UOM	LOR	30-BH106M_0.3-0.4 SOIL - 21/4/2021 SE218963.016	30-BH106M_1.1-1.2 SOIL - 21/4/2021 SE218963.017	30-BH106M_1.9-2.0 SOIL - 21/4/2021 SE218963.018	30-BH106M_3.4-3.5 SOIL - 21/4/2021 SE218963.019	30-BH107_0.3-0.4 SOIL - 21/4/2021 SE218963.020
Arsenic, As	mg/kg	1	4	10	6	10	12
Cadmium, Cd	mg/kg	0.3	0.9	1.3	1.2	0.7	0.9
Chromium, Cr	mg/kg	0.5	79	130	110	160	13
Copper, Cu	mg/kg	0.5	72	600	130	290	19
Lead, Pb	mg/kg	1	140	530	530	200	92
Nickel, Ni	mg/kg	0.5	50	58	38	40	8.5
Zinc, Zn	mg/kg	2	520	2700	700	410	820

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 30/4/2021 (continued)

PARAMETER	UOM	LOR	30-BH107_0.9-1.0 SOIL - 21/4/2021 SE218963.021	30-BH107_2.3-2.4 SOIL - 21/4/2021 SE218963.022	30-BH108_0.2-0.3 SOIL - 21/4/2021 SE218963.023	30-BH108_0.4-0.5 SOIL - 21/4/2021 SE218963.024	30-BH108_1.2-1.3 SOIL - 21/4/2021 SE218963.025
Arsenic, As	mg/kg	1	4	6	7	7	5
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	12	16	14	27	12
Copper, Cu	mg/kg	0.5	33	30	15	12	15
Lead, Pb	mg/kg	1	29	96	21	18	25
Nickel, Ni	mg/kg	0.5	28	10	5.9	1.4	6.6
Zinc, Zn	mg/kg	2	63	99	28	14	180

PARAMETER	UOM	LOR	30-BH108_2.7-2.8 SOIL - 21/4/2021 SE218963.026	30-BH109_0.3-0.4 SOIL - 21/4/2021 SE218963.027	30-BH110M_0.2-0.3 SOIL - 21/4/2021 SE218963.028	30-BH110M_1.4-1.5 SOIL - 21/4/2021 SE218963.029
Arsenic, As	mg/kg	1	8	18	3	5
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	17	11	7.7	10
Copper, Cu	mg/kg	0.5	12	24	5.9	9.2
Lead, Pb	mg/kg	1	140	38	10	20
Nickel, Ni	mg/kg	0.5	4.6	2.7	3.1	1.7
Zinc, Zn	mg/kg	2	110	42	15	14

Mercury in Soil [AN312] Tested: 30/4/2021

PARAMETER	UOM	LOR	82_BH102M_0.4-0.6 SOIL - 20/4/2021 SE218963.001	30-BH101_0.2-0.3 SOIL - 20/4/2021 SE218963.002	30-BH101_0.5-0.6 SOIL - 20/4/2021 SE218963.003	30-BH101_0.9-1.0 SOIL - 20/4/2021 SE218963.004	30-BH101_4.4-4.5 SOIL - 20/4/2021 SE218963.005
Mercury	mg/kg	0.05	**0.12**	<0.05	**0.14**	<0.05	**0.11**

PARAMETER	UOM	LOR	30-BH102M_0.2-0.3 SOIL - 20/4/2021 SE218963.006	30-BH102M_0.5-0.6 SOIL - 20/4/2021 SE218963.007	30-BH102M_2.0-2.1 SOIL - 20/4/2021 SE218963.008	30-BH102M_4.0-4.1 SOIL - 20/4/2021 SE218963.009	30-BH103_0.3-0.4 SOIL - 20/4/2021 SE218963.010
Mercury	mg/kg	0.05	<0.05	<0.05	**0.10**	<0.05	<0.05

PARAMETER	UOM	LOR	30-BH103_0.9-1.0 SOIL - 20/4/2021 SE218963.011	30-BH104_0.4-0.5 SOIL - 20/4/2021 SE218963.012	30-BH104_2.0-2.1 SOIL - 20/4/2021 SE218963.013	30-BH104_2.7-2.5 SOIL - 20/4/2021 SE218963.014	30-BH105_0.4-0.5 SOIL - 20/4/2021 SE218963.015
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	**0.06**	<0.05

PARAMETER	UOM	LOR	30-BH106M_0.3-0.4 SOIL - 21/4/2021 SE218963.016	30-BH106M_1.1-1.2 SOIL - 21/4/2021 SE218963.017	30-BH106M_1.9-2.0 SOIL - 21/4/2021 SE218963.018	30-BH106M_3.4-3.5 SOIL - 21/4/2021 SE218963.019	30-BH107_0.3-0.4 SOIL - 21/4/2021 SE218963.020
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	**0.05**

PARAMETER	UOM	LOR	30-BH107_0.9-1.0 SOIL - 21/4/2021 SE218963.021	30-BH107_2.3-2.4 SOIL - 21/4/2021 SE218963.022	30-BH108_0.2-0.3 SOIL - 21/4/2021 SE218963.023	30-BH108_0.4-0.5 SOIL - 21/4/2021 SE218963.024	30-BH108_1.2-1.3 SOIL - 21/4/2021 SE218963.025
Mercury	mg/kg	0.05	<0.05	**0.12**	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	30-BH108_2.7-2.8 SOIL - 21/4/2021 SE218963.026	30-BH109_0.3-0.4 SOIL - 21/4/2021 SE218963.027	30-BH110M_0.2-0.3 SOIL - 21/4/2021 SE218963.028	30-BH110M_1.4-1.5 SOIL - 21/4/2021 SE218963.029
Mercury	mg/kg	0.05	**0.13**	<0.05	<0.05	<0.05

Moisture Content [AN002] Tested: 27/4/2021

PARAMETER	UOM	LOR	82_BH102M_0.4-0.6 SOIL - 20/4/2021 SE218963.001	30-BH101_0.2-0.3 SOIL - 20/4/2021 SE218963.002	30-BH101_0.5-0.6 SOIL - 20/4/2021 SE218963.003	30-BH101_0.9-1.0 SOIL - 20/4/2021 SE218963.004	30-BH101_4.4-4.5 SOIL - 20/4/2021 SE218963.005
% Moisture	%w/w	1	14.5	9.4	10.9	4.2	21.2

PARAMETER	UOM	LOR	30-BH102M_0.2-0.3 SOIL - 20/4/2021 SE218963.006	30-BH102M_0.5-0.6 SOIL - 20/4/2021 SE218963.007	30-BH102M_2.0-2.1 SOIL - 20/4/2021 SE218963.008	30-BH102M_4.0-4.1 SOIL - 20/4/2021 SE218963.009	30-BH103_0.3-0.4 SOIL - 20/4/2021 SE218963.010
% Moisture	%w/w	1	10.0	16.3	10.8	13.4	9.9

PARAMETER	UOM	LOR	30-BH103_0.9-1.0 SOIL - 20/4/2021 SE218963.011	30-BH104_0.4-0.5 SOIL - 20/4/2021 SE218963.012	30-BH104_2.0-2.1 SOIL - 20/4/2021 SE218963.013	30-BH104_2.7-2.5 SOIL - 20/4/2021 SE218963.014	30-BH105_0.4-0.5 SOIL - 20/4/2021 SE218963.015
% Moisture	%w/w	1	16.0	12.2	17.9	17.5	7.0

PARAMETER	UOM	LOR	30-BH106M_0.3-0.4 SOIL - 21/4/2021 SE218963.016	30-BH106M_1.1-1.2 SOIL - 21/4/2021 SE218963.017	30-BH106M_1.9-2.0 SOIL - 21/4/2021 SE218963.018	30-BH106M_3.4-3.5 SOIL - 21/4/2021 SE218963.019	30-BH107_0.3-0.4 SOIL - 21/4/2021 SE218963.020
% Moisture	%w/w	1	8.7	12.4	13.3	23.4	12.4

PARAMETER	UOM	LOR	30-BH107_0.9-1.0 SOIL - 21/4/2021 SE218963.021	30-BH107_2.3-2.4 SOIL - 21/4/2021 SE218963.022	30-BH108_0.2-0.3 SOIL - 21/4/2021 SE218963.023	30-BH108_0.4-0.5 SOIL - 21/4/2021 SE218963.024	30-BH108_1.2-1.3 SOIL - 21/4/2021 SE218963.025
% Moisture	%w/w	1	19.8	14.5	14.6	12.6	17.1

PARAMETER	UOM	LOR	30-BH108_2.7-2.8 SOIL - 21/4/2021 SE218963.026	30-BH109_0.3-0.4 SOIL - 21/4/2021 SE218963.027	30-BH110M_0.2-0.3 SOIL - 21/4/2021 SE218963.028	30-BH110M_1.4-1.5 SOIL - 21/4/2021 SE218963.029
% Moisture	%w/w	1	19.6	16.7	10.2	18.3

Fibre Identification in soil [AN602] Tested: 3/5/2021

PARAMETER	UOM	LOR	30-BH101_0.2-0.3 SOIL - 20/4/2021 SE218963.002	30-BH101_0.5-0.6 SOIL - 20/4/2021 SE218963.003	30-BH101_0.9-1.0 SOIL - 20/4/2021 SE218963.004	30-BH101_4.4-4.5 SOIL - 20/4/2021 SE218963.005	30-BH102M_0.2-0.3 SOIL - 20/4/2021 SE218963.006
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

PARAMETER	UOM	LOR	30-BH102M_0.5-0.6 SOIL - 20/4/2021 SE218963.007	30-BH102M_2.0-2.1 SOIL - 20/4/2021 SE218963.008	30-BH102M_4.0-4.1 SOIL - 20/4/2021 SE218963.009	30-BH103_0.3-0.4 SOIL - 20/4/2021 SE218963.010	30-BH103_0.9-1.0 SOIL - 20/4/2021 SE218963.011
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

PARAMETER	UOM	LOR	30-BH104_0.4-0.5 SOIL - 20/4/2021 SE218963.012	30-BH104_2.0-2.1 SOIL - 20/4/2021 SE218963.013	30-BH104_2.7-2.5 SOIL - 20/4/2021 SE218963.014	30-BH105_0.4-0.5 SOIL - 20/4/2021 SE218963.015	30-BH106M_0.3-0.4 SOIL - 21/4/2021 SE218963.016
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

PARAMETER	UOM	LOR	30-BH106M_1.1-1.2 SOIL - 21/4/2021 SE218963.017	30-BH106M_1.9-2.0 SOIL - 21/4/2021 SE218963.018	30-BH106M_3.4-3.5 SOIL - 21/4/2021 SE218963.019	30-BH107_0.3-0.4 SOIL - 21/4/2021 SE218963.020	30-BH107_0.9-1.0 SOIL - 21/4/2021 SE218963.021
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

PARAMETER	UOM	LOR	30-BH107_2.3-2.4 SOIL - 21/4/2021 SE218963.022	30-BH108_0.2-0.3 SOIL - 21/4/2021 SE218963.023	30-BH108_0.4-0.5 SOIL - 21/4/2021 SE218963.024	30-BH108_1.2-1.3 SOIL - 21/4/2021 SE218963.025	30-BH108_2.7-2.8 SOIL - 21/4/2021 SE218963.026
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

PARAMETER	UOM	LOR	30-BH109_0.3-0.4 SOIL - 21/4/2021 SE218963.027	30-BH110M_0.2-0.3 SOIL - 21/4/2021 SE218963.028	30-BH110M_1.4-1.5 SOIL - 21/4/2021 SE218963.029
Asbestos Detected	No unit	-	No	No	No
Estimated Fibres*	%w/w	0.01	<0.01	<0.01	<0.01

Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples [MA-1523] Tested: 3/5/2021

PARAMETER	UOM	LOR	30-BH101_0.2-0.3 SOIL - 20/4/2021 SE218963.002	30-BH102M_0.2-0.3 SOIL - 20/4/2021 SE218963.006	30-BH104_0.4-0.5 SOIL - 20/4/2021 SE218963.012	30-BH106M_0.3-0.4 SOIL - 21/4/2021 SE218963.016
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	**0.0019**
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
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
Perfluorooctane sulfonamide (PFOSA)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016
N-Methylperfluorooctane sulfonamide (N-MeFOSA)	mg/kg	0.008	<0.008	<0.008	<0.008	<0.008
N-Ethylperfluorooctane 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

METHOD	METHODOLOGY SUMMARY
AN002	The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.
AN040/AN320	A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.
AN040	A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analysis by ASS or ICP as per USEPA Method 200.8.
AN312	Mercury by Cold Vapour AAS in Soils: After digestion with nitric acid, hydrogen peroxide and hydrochloric acid, mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500
AN403	Total Recoverable Hydrocarbons: Determination of Hydrocarbons by gas chromatography after a solvent extraction. Detection is by flame ionisation detector (FID) that produces an electronic signal in proportion to the combustible matter passing through it. Total Recoverable Hydrocarbons (TRH) are routinely reported as four alkane groupings based on the carbon chain length of the compounds: C6-C9, C10-C14, C15-C28 and C29-C36 and in recognition of the NEPM 1999 (2013), >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). F2 is reported directly and also corrected by subtracting Naphthalene (from VOC method AN433) where available.
AN403	Additionally, the volatile C6-C9 fraction may be determined by a purge and trap technique and GC/MS because of the potential for volatiles loss. Total Recoverable Hydrocarbons - Silica (TRH-Si) follows the same method of analysis after silica gel cleanup of the solvent extract. Aliphatic/Aromatic Speciation follows the same method of analysis after fractionation of the solvent extract over silica with differential polarity of the eluent solvents .
AN403	The GC/FID method is not well suited to the analysis of refined high boiling point materials (ie lubricating oils or greases) but is particularly suited for measuring diesel, kerosene and petrol if care to control volatility is taken. This method will detect naturally occurring hydrocarbons, lipids, animal fats, phenols and PAHs if they are present at sufficient levels, dependent on the use of specific cleanup/fractionation techniques. Reference USEPA 3510B, 8015B.
AN420	(SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols (etc) in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
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	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	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	AS4964.2004 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 limit 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	The sample can be reported “no asbestos found at the reporting limit 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.
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.
		NVL	Not validated.	LOR	Limit of Reporting.
**	Indicative data, theoretical holding time exceeded.	IS	Insufficient sample for analysis.	↑↓	Raised/lowered Limit of Reporting.
***	Indicates that both * and ** apply.	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-qb/environment-health-and-safety.

STATEMENT OF QA/QC PERFORMANCE

SE218963 R0

CLIENT DETAILS

Contact	Andrew Ibrahim
Client	EI AUSTRALIA
Address	SUITE 6.01 55 MILLER STREET PYRMONT NSW 2009
Telephone	61 2 95160722
Facsimile	(Not specified)
Email	andrew.ibrahim@eiaustralia.com.au
Project	**E25077 Hughes,Waratah,Wharf Melrose Pk**
Order Number	**E25077**
Samples	29

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	**SE218963 R0**
Date Received	23 Apr 2021
Date Reported	04 May 2021

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:

Surrogate	Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples	1 item
	VOC's in Soil	5 items
	Volatile Petroleum Hydrocarbons in Soil	5 items
Duplicate	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	4 items
	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	1 item
Matrix Spike	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	2 items

SAMPLE SUMMARY

Samples clearly labelled	Yes	Complete documentation received	Yes
Sample container provider	SGS	Sample cooling method	Ice Bricks
Samples received in correct containers	Yes	Sample counts by matrix	29 Soil
Date documentation received	26/4/2021 @3.35PM	Type of documentation received	COC
Samples received in good order	Yes	Samples received without headspace	N/A
Sample temperature upon receipt	10.0°C	Sufficient sample for analysis	Yes
Turnaround time requested	Standard		

HOLDING TIME SUMMARY

SE218963 R0

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

Fibre Identification in soil

Method: ME-(AU)-[ENV]AN602

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
30-BH101_0.2-0.3	SE218963.002	LB223745	20 Apr 2021	23 Apr 2021	20 Apr 2022	03 May 2021	20 Apr 2022	04 May 2021
30-BH101_0.5-0.6	SE218963.003	LB223745	20 Apr 2021	23 Apr 2021	20 Apr 2022	03 May 2021	20 Apr 2022	04 May 2021
30-BH101_0.9-1.0	SE218963.004	LB223745	20 Apr 2021	23 Apr 2021	20 Apr 2022	03 May 2021	20 Apr 2022	04 May 2021
30-BH101_4.4-4.5	SE218963.005	LB223745	20 Apr 2021	23 Apr 2021	20 Apr 2022	03 May 2021	20 Apr 2022	04 May 2021
30-BH102M_0.2-0.3	SE218963.006	LB223745	20 Apr 2021	23 Apr 2021	20 Apr 2022	03 May 2021	20 Apr 2022	04 May 2021
30-BH102M_0.5-0.6	SE218963.007	LB223745	20 Apr 2021	23 Apr 2021	20 Apr 2022	03 May 2021	20 Apr 2022	04 May 2021
30-BH102M_2.0-2.1	SE218963.008	LB223745	20 Apr 2021	23 Apr 2021	20 Apr 2022	03 May 2021	20 Apr 2022	04 May 2021
30-BH102M_4.0-4.1	SE218963.009	LB223745	20 Apr 2021	23 Apr 2021	20 Apr 2022	03 May 2021	20 Apr 2022	04 May 2021
30-BH103_0.3-0.4	SE218963.010	LB223745	20 Apr 2021	23 Apr 2021	20 Apr 2022	03 May 2021	20 Apr 2022	04 May 2021
30-BH103_0.9-1.0	SE218963.011	LB223745	20 Apr 2021	23 Apr 2021	20 Apr 2022	03 May 2021	20 Apr 2022	04 May 2021
30-BH104_0.4-0.5	SE218963.012	LB223745	20 Apr 2021	23 Apr 2021	20 Apr 2022	03 May 2021	20 Apr 2022	04 May 2021
30-BH104_2.0-2.1	SE218963.013	LB223745	20 Apr 2021	23 Apr 2021	20 Apr 2022	03 May 2021	20 Apr 2022	04 May 2021
30-BH104_2.7-2.5	SE218963.014	LB223745	20 Apr 2021	23 Apr 2021	20 Apr 2022	03 May 2021	20 Apr 2022	04 May 2021
30-BH105_0.4-0.5	SE218963.015	LB223745	20 Apr 2021	23 Apr 2021	20 Apr 2022	03 May 2021	20 Apr 2022	04 May 2021
30-BH106M_0.3-0.4	SE218963.016	LB223745	21 Apr 2021	23 Apr 2021	21 Apr 2022	03 May 2021	21 Apr 2022	04 May 2021
30-BH106M_1.1-1.2	SE218963.017	LB223745	21 Apr 2021	23 Apr 2021	21 Apr 2022	03 May 2021	21 Apr 2022	04 May 2021
30-BH106M_1.9-2.0	SE218963.018	LB223745	21 Apr 2021	23 Apr 2021	21 Apr 2022	03 May 2021	21 Apr 2022	04 May 2021
30-BH106M_3.4-3.5	SE218963.019	LB223745	21 Apr 2021	23 Apr 2021	21 Apr 2022	03 May 2021	21 Apr 2022	04 May 2021
30-BH107_0.3-0.4	SE218963.020	LB223745	21 Apr 2021	23 Apr 2021	21 Apr 2022	03 May 2021	21 Apr 2022	04 May 2021
30-BH107_0.9-1.0	SE218963.021	LB223745	21 Apr 2021	23 Apr 2021	21 Apr 2022	03 May 2021	21 Apr 2022	04 May 2021
30-BH107_2.3-2.4	SE218963.022	LB223745	21 Apr 2021	23 Apr 2021	21 Apr 2022	03 May 2021	21 Apr 2022	04 May 2021
30-BH108_0.2-0.3	SE218963.023	LB223745	21 Apr 2021	23 Apr 2021	21 Apr 2022	03 May 2021	21 Apr 2022	04 May 2021
30-BH108_0.4-0.5	SE218963.024	LB223745	21 Apr 2021	23 Apr 2021	21 Apr 2022	03 May 2021	21 Apr 2022	04 May 2021
30-BH108_1.2-1.3	SE218963.025	LB223745	21 Apr 2021	23 Apr 2021	21 Apr 2022	03 May 2021	21 Apr 2022	04 May 2021
30-BH108_2.7-2.8	SE218963.026	LB223745	21 Apr 2021	23 Apr 2021	21 Apr 2022	03 May 2021	21 Apr 2022	04 May 2021
30-BH109_0.3-0.4	SE218963.027	LB223745	21 Apr 2021	23 Apr 2021	21 Apr 2022	03 May 2021	21 Apr 2022	04 May 2021
30-BH110M_0.2-0.3	SE218963.028	LB223745	21 Apr 2021	23 Apr 2021	21 Apr 2022	03 May 2021	21 Apr 2022	04 May 2021
30-BH110M_1.4-1.5	SE218963.029	LB223745	21 Apr 2021	23 Apr 2021	21 Apr 2022	03 May 2021	21 Apr 2022	04 May 2021

Mercury in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
82_BH102M_0.4-0.6	SE218963.001	LB223706	20 Apr 2021	23 Apr 2021	18 May 2021	30 Apr 2021	18 May 2021	03 May 2021
30-BH101_0.2-0.3	SE218963.002	LB223706	20 Apr 2021	23 Apr 2021	18 May 2021	30 Apr 2021	18 May 2021	03 May 2021
30-BH101_0.5-0.6	SE218963.003	LB223706	20 Apr 2021	23 Apr 2021	18 May 2021	30 Apr 2021	18 May 2021	03 May 2021
30-BH101_0.9-1.0	SE218963.004	LB223706	20 Apr 2021	23 Apr 2021	18 May 2021	30 Apr 2021	18 May 2021	03 May 2021
30-BH101_4.4-4.5	SE218963.005	LB223706	20 Apr 2021	23 Apr 2021	18 May 2021	30 Apr 2021	18 May 2021	03 May 2021
30-BH102M_0.2-0.3	SE218963.006	LB223706	20 Apr 2021	23 Apr 2021	18 May 2021	30 Apr 2021	18 May 2021	03 May 2021
30-BH102M_0.5-0.6	SE218963.007	LB223706	20 Apr 2021	23 Apr 2021	18 May 2021	30 Apr 2021	18 May 2021	03 May 2021
30-BH102M_2.0-2.1	SE218963.008	LB223706	20 Apr 2021	23 Apr 2021	18 May 2021	30 Apr 2021	18 May 2021	03 May 2021
30-BH102M_4.0-4.1	SE218963.009	LB223706	20 Apr 2021	23 Apr 2021	18 May 2021	30 Apr 2021	18 May 2021	03 May 2021
30-BH103_0.3-0.4	SE218963.010	LB223706	20 Apr 2021	23 Apr 2021	18 May 2021	30 Apr 2021	18 May 2021	03 May 2021
30-BH103_0.9-1.0	SE218963.011	LB223706	20 Apr 2021	23 Apr 2021	18 May 2021	30 Apr 2021	18 May 2021	03 May 2021
30-BH104_0.4-0.5	SE218963.012	LB223706	20 Apr 2021	23 Apr 2021	18 May 2021	30 Apr 2021	18 May 2021	03 May 2021
30-BH104_2.0-2.1	SE218963.013	LB223706	20 Apr 2021	23 Apr 2021	18 May 2021	30 Apr 2021	18 May 2021	03 May 2021
30-BH104_2.7-2.5	SE218963.014	LB223706	20 Apr 2021	23 Apr 2021	18 May 2021	30 Apr 2021	18 May 2021	03 May 2021
30-BH105_0.4-0.5	SE218963.015	LB223706	20 Apr 2021	23 Apr 2021	18 May 2021	30 Apr 2021	18 May 2021	03 May 2021
30-BH106M_0.3-0.4	SE218963.016	LB223706	21 Apr 2021	23 Apr 2021	19 May 2021	30 Apr 2021	19 May 2021	03 May 2021
30-BH106M_1.1-1.2	SE218963.017	LB223706	21 Apr 2021	23 Apr 2021	19 May 2021	30 Apr 2021	19 May 2021	03 May 2021
30-BH106M_1.9-2.0	SE218963.018	LB223706	21 Apr 2021	23 Apr 2021	19 May 2021	30 Apr 2021	19 May 2021	03 May 2021
30-BH106M_3.4-3.5	SE218963.019	LB223706	21 Apr 2021	23 Apr 2021	19 May 2021	30 Apr 2021	19 May 2021	03 May 2021
30-BH107_0.3-0.4	SE218963.020	LB223705	21 Apr 2021	23 Apr 2021	19 May 2021	30 Apr 2021	19 May 2021	03 May 2021
30-BH107_0.9-1.0	SE218963.021	LB223705	21 Apr 2021	23 Apr 2021	19 May 2021	30 Apr 2021	19 May 2021	03 May 2021
30-BH107_2.3-2.4	SE218963.022	LB223705	21 Apr 2021	23 Apr 2021	19 May 2021	30 Apr 2021	19 May 2021	03 May 2021
30-BH108_0.2-0.3	SE218963.023	LB223705	21 Apr 2021	23 Apr 2021	19 May 2021	30 Apr 2021	19 May 2021	03 May 2021
30-BH108_0.4-0.5	SE218963.024	LB223705	21 Apr 2021	23 Apr 2021	19 May 2021	30 Apr 2021	19 May 2021	03 May 2021
30-BH108_1.2-1.3	SE218963.025	LB223705	21 Apr 2021	23 Apr 2021	19 May 2021	30 Apr 2021	19 May 2021	03 May 2021
30-BH108_2.7-2.8	SE218963.026	LB223705	21 Apr 2021	23 Apr 2021	19 May 2021	30 Apr 2021	19 May 2021	03 May 2021
30-BH109_0.3-0.4	SE218963.027	LB223705	21 Apr 2021	23 Apr 2021	19 May 2021	30 Apr 2021	19 May 2021	03 May 2021
30-BH110M_0.2-0.3	SE218963.028	LB223705	21 Apr 2021	23 Apr 2021	19 May 2021	30 Apr 2021	19 May 2021	03 May 2021
30-BH110M_1.4-1.5	SE218963.029	LB223705	21 Apr 2021	23 Apr 2021	19 May 2021	30 Apr 2021	19 May 2021	03 May 2021

HOLDING TIME SUMMARY

SE218963 R0

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

Moisture Content

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
82_BH102M_0.4-0.6	SE218963.001	LB223487	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	02 May 2021	29 Apr 2021
30-BH101_0.2-0.3	SE218963.002	LB223487	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	02 May 2021	29 Apr 2021
30-BH101_0.5-0.6	SE218963.003	LB223487	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	02 May 2021	29 Apr 2021
30-BH101_0.9-1.0	SE218963.004	LB223487	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	02 May 2021	29 Apr 2021
30-BH101_4.4-4.5	SE218963.005	LB223487	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	02 May 2021	29 Apr 2021
30-BH102M_0.2-0.3	SE218963.006	LB223487	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	02 May 2021	29 Apr 2021
30-BH102M_0.5-0.6	SE218963.007	LB223487	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	02 May 2021	29 Apr 2021
30-BH102M_2.0-2.1	SE218963.008	LB223487	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	02 May 2021	29 Apr 2021
30-BH102M_4.0-4.1	SE218963.009	LB223487	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	02 May 2021	29 Apr 2021
30-BH103_0.3-0.4	SE218963.010	LB223662	20 Apr 2021	23 Apr 2021	04 May 2021	29 Apr 2021	04 May 2021	03 May 2021
30-BH103_0.9-1.0	SE218963.011	LB223662	20 Apr 2021	23 Apr 2021	04 May 2021	29 Apr 2021	04 May 2021	03 May 2021
30-BH104_0.4-0.5	SE218963.012	LB223662	20 Apr 2021	23 Apr 2021	04 May 2021	29 Apr 2021	04 May 2021	03 May 2021
30-BH104_2.0-2.1	SE218963.013	LB223662	20 Apr 2021	23 Apr 2021	04 May 2021	29 Apr 2021	04 May 2021	03 May 2021
30-BH104_2.7-2.5	SE218963.014	LB223662	20 Apr 2021	23 Apr 2021	04 May 2021	29 Apr 2021	04 May 2021	03 May 2021
30-BH105_0.4-0.5	SE218963.015	LB223662	20 Apr 2021	23 Apr 2021	04 May 2021	29 Apr 2021	04 May 2021	03 May 2021
30-BH106M_0.3-0.4	SE218963.016	LB223662	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	04 May 2021	03 May 2021
30-BH106M_1.1-1.2	SE218963.017	LB223662	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	04 May 2021	03 May 2021
30-BH106M_1.9-2.0	SE218963.018	LB223662	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	04 May 2021	03 May 2021
30-BH106M_3.4-3.5	SE218963.019	LB223662	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	04 May 2021	03 May 2021
30-BH107_0.3-0.4	SE218963.020	LB223662	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	04 May 2021	03 May 2021
30-BH107_0.9-1.0	SE218963.021	LB223662	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	04 May 2021	03 May 2021
30-BH107_2.3-2.4	SE218963.022	LB223662	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	04 May 2021	03 May 2021
30-BH108_0.2-0.3	SE218963.023	LB223662	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	04 May 2021	03 May 2021
30-BH108_0.4-0.5	SE218963.024	LB223662	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	04 May 2021	03 May 2021
30-BH108_1.2-1.3	SE218963.025	LB223662	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	04 May 2021	03 May 2021
30-BH108_2.7-2.8	SE218963.026	LB223662	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	04 May 2021	03 May 2021
30-BH109_0.3-0.4	SE218963.027	LB223662	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	04 May 2021	03 May 2021
30-BH110M_0.2-0.3	SE218963.028	LB223662	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	04 May 2021	03 May 2021
30-BH110M_1.4-1.5	SE218963.029	LB223662	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	04 May 2021	03 May 2021

OC Pesticides in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
82_BH102M_0.4-0.6	SE218963.001	LB223477	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH101_0.2-0.3	SE218963.002	LB223477	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH101_0.5-0.6	SE218963.003	LB223477	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH101_0.9-1.0	SE218963.004	LB223477	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH101_4.4-4.5	SE218963.005	LB223477	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH102M_0.2-0.3	SE218963.006	LB223477	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH102M_0.5-0.6	SE218963.007	LB223477	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH102M_2.0-2.1	SE218963.008	LB223477	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH102M_4.0-4.1	SE218963.009	LB223477	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH103_0.3-0.4	SE218963.010	LB223478	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH103_0.9-1.0	SE218963.011	LB223478	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH104_0.4-0.5	SE218963.012	LB223478	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH104_2.0-2.1	SE218963.013	LB223478	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH104_2.7-2.5	SE218963.014	LB223478	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH105_0.4-0.5	SE218963.015	LB223478	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH106M_0.3-0.4	SE218963.016	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH106M_1.1-1.2	SE218963.017	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH106M_1.9-2.0	SE218963.018	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH106M_3.4-3.5	SE218963.019	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH107_0.3-0.4	SE218963.020	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH107_0.9-1.0	SE218963.021	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH107_2.3-2.4	SE218963.022	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH108_0.2-0.3	SE218963.023	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH108_0.4-0.5	SE218963.024	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH108_1.2-1.3	SE218963.025	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH108_2.7-2.8	SE218963.026	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH109_0.3-0.4	SE218963.027	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH110M_0.2-0.3	SE218963.028	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021

HOLDING TIME SUMMARY

SE218963 R0

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

OC Pesticides in Soil (continued)

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
30-BH110M_1.4-1.5	SE218963.029	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021

OP Pesticides in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
82_BH102M_0.4-0.6	SE218963.001	LB223477	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH101_0.2-0.3	SE218963.002	LB223477	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH101_0.5-0.6	SE218963.003	LB223477	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH101_0.9-1.0	SE218963.004	LB223477	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH101_4.4-4.5	SE218963.005	LB223477	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH102M_0.2-0.3	SE218963.006	LB223477	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH102M_0.5-0.6	SE218963.007	LB223477	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH102M_2.0-2.1	SE218963.008	LB223477	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH102M_4.0-4.1	SE218963.009	LB223477	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH103_0.3-0.4	SE218963.010	LB223478	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH103_0.9-1.0	SE218963.011	LB223478	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH104_0.4-0.5	SE218963.012	LB223478	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH104_2.0-2.1	SE218963.013	LB223478	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH104_2.7-2.5	SE218963.014	LB223478	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH105_0.4-0.5	SE218963.015	LB223478	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH106M_0.3-0.4	SE218963.016	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH106M_1.1-1.2	SE218963.017	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH106M_1.9-2.0	SE218963.018	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH106M_3.4-3.5	SE218963.019	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH107_0.3-0.4	SE218963.020	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH107_0.9-1.0	SE218963.021	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH107_2.3-2.4	SE218963.022	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH108_0.2-0.3	SE218963.023	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH108_0.4-0.5	SE218963.024	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH108_1.2-1.3	SE218963.025	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH108_2.7-2.8	SE218963.026	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH109_0.3-0.4	SE218963.027	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH110M_0.2-0.3	SE218963.028	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH110M_1.4-1.5	SE218963.029	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021

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
82_BH102M_0.4-0.6	SE218963.001	LB223477	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH101_0.2-0.3	SE218963.002	LB223477	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH101_0.5-0.6	SE218963.003	LB223477	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH101_0.9-1.0	SE218963.004	LB223477	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH101_4.4-4.5	SE218963.005	LB223477	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH102M_0.2-0.3	SE218963.006	LB223477	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH102M_0.5-0.6	SE218963.007	LB223477	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH102M_2.0-2.1	SE218963.008	LB223477	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH102M_4.0-4.1	SE218963.009	LB223477	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH103_0.3-0.4	SE218963.010	LB223478	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH103_0.9-1.0	SE218963.011	LB223478	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH104_0.4-0.5	SE218963.012	LB223478	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH104_2.0-2.1	SE218963.013	LB223478	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH104_2.7-2.5	SE218963.014	LB223478	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH105_0.4-0.5	SE218963.015	LB223478	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH106M_0.3-0.4	SE218963.016	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH106M_1.1-1.2	SE218963.017	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH106M_1.9-2.0	SE218963.018	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH106M_3.4-3.5	SE218963.019	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH107_0.3-0.4	SE218963.020	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH107_0.9-1.0	SE218963.021	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH107_2.3-2.4	SE218963.022	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH108_0.2-0.3	SE218963.023	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH108_0.4-0.5	SE218963.024	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH108_1.2-1.3	SE218963.025	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021

HOLDING TIME SUMMARY

SE218963 R0

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

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
30-BH108_2.7-2.8	SE218963.026	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH109_0.3-0.4	SE218963.027	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH110M_0.2-0.3	SE218963.028	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH110M_1.4-1.5	SE218963.029	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021

PCBs in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
82_BH102M_0.4-0.6	SE218963.001	LB223477	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH101_0.2-0.3	SE218963.002	LB223477	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH101_0.5-0.6	SE218963.003	LB223477	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH101_0.9-1.0	SE218963.004	LB223477	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH101_4.4-4.5	SE218963.005	LB223477	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH102M_0.2-0.3	SE218963.006	LB223477	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH102M_0.5-0.6	SE218963.007	LB223477	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH102M_2.0-2.1	SE218963.008	LB223477	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH102M_4.0-4.1	SE218963.009	LB223477	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH103_0.3-0.4	SE218963.010	LB223478	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH103_0.9-1.0	SE218963.011	LB223478	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH104_0.4-0.5	SE218963.012	LB223478	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH104_2.0-2.1	SE218963.013	LB223478	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH104_2.7-2.5	SE218963.014	LB223478	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH105_0.4-0.5	SE218963.015	LB223478	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH106M_0.3-0.4	SE218963.016	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH106M_1.1-1.2	SE218963.017	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH106M_1.9-2.0	SE218963.018	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH106M_3.4-3.5	SE218963.019	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH107_0.3-0.4	SE218963.020	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH107_0.9-1.0	SE218963.021	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH107_2.3-2.4	SE218963.022	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH108_0.2-0.3	SE218963.023	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH108_0.4-0.5	SE218963.024	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH108_1.2-1.3	SE218963.025	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH108_2.7-2.8	SE218963.026	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH109_0.3-0.4	SE218963.027	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH110M_0.2-0.3	SE218963.028	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH110M_1.4-1.5	SE218963.029	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021

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
82_BH102M_0.4-0.6	SE218963.001	LB223701	20 Apr 2021	23 Apr 2021	17 Oct 2021	30 Apr 2021	17 Oct 2021	03 May 2021
30-BH101_0.2-0.3	SE218963.002	LB223701	20 Apr 2021	23 Apr 2021	17 Oct 2021	30 Apr 2021	17 Oct 2021	03 May 2021
30-BH101_0.5-0.6	SE218963.003	LB223701	20 Apr 2021	23 Apr 2021	17 Oct 2021	30 Apr 2021	17 Oct 2021	03 May 2021
30-BH101_0.9-1.0	SE218963.004	LB223701	20 Apr 2021	23 Apr 2021	17 Oct 2021	30 Apr 2021	17 Oct 2021	03 May 2021
30-BH101_4.4-4.5	SE218963.005	LB223701	20 Apr 2021	23 Apr 2021	17 Oct 2021	30 Apr 2021	17 Oct 2021	03 May 2021
30-BH102M_0.2-0.3	SE218963.006	LB223701	20 Apr 2021	23 Apr 2021	17 Oct 2021	30 Apr 2021	17 Oct 2021	03 May 2021
30-BH102M_0.5-0.6	SE218963.007	LB223701	20 Apr 2021	23 Apr 2021	17 Oct 2021	30 Apr 2021	17 Oct 2021	03 May 2021
30-BH102M_2.0-2.1	SE218963.008	LB223701	20 Apr 2021	23 Apr 2021	17 Oct 2021	30 Apr 2021	17 Oct 2021	03 May 2021
30-BH102M_4.0-4.1	SE218963.009	LB223701	20 Apr 2021	23 Apr 2021	17 Oct 2021	30 Apr 2021	17 Oct 2021	03 May 2021
30-BH103_0.3-0.4	SE218963.010	LB223701	20 Apr 2021	23 Apr 2021	17 Oct 2021	30 Apr 2021	17 Oct 2021	03 May 2021
30-BH103_0.9-1.0	SE218963.011	LB223701	20 Apr 2021	23 Apr 2021	17 Oct 2021	30 Apr 2021	17 Oct 2021	03 May 2021
30-BH104_0.4-0.5	SE218963.012	LB223701	20 Apr 2021	23 Apr 2021	17 Oct 2021	30 Apr 2021	17 Oct 2021	03 May 2021
30-BH104_2.0-2.1	SE218963.013	LB223701	20 Apr 2021	23 Apr 2021	17 Oct 2021	30 Apr 2021	17 Oct 2021	03 May 2021
30-BH104_2.7-2.5	SE218963.014	LB223701	20 Apr 2021	23 Apr 2021	17 Oct 2021	30 Apr 2021	17 Oct 2021	03 May 2021
30-BH105_0.4-0.5	SE218963.015	LB223701	20 Apr 2021	23 Apr 2021	17 Oct 2021	30 Apr 2021	17 Oct 2021	03 May 2021
30-BH106M_0.3-0.4	SE218963.016	LB223701	21 Apr 2021	23 Apr 2021	18 Oct 2021	30 Apr 2021	18 Oct 2021	03 May 2021
30-BH106M_1.1-1.2	SE218963.017	LB223701	21 Apr 2021	23 Apr 2021	18 Oct 2021	30 Apr 2021	18 Oct 2021	03 May 2021
30-BH106M_1.9-2.0	SE218963.018	LB223701	21 Apr 2021	23 Apr 2021	18 Oct 2021	30 Apr 2021	18 Oct 2021	03 May 2021
30-BH106M_3.4-3.5	SE218963.019	LB223701	21 Apr 2021	23 Apr 2021	18 Oct 2021	30 Apr 2021	18 Oct 2021	03 May 2021
30-BH107_0.3-0.4	SE218963.020	LB223704	21 Apr 2021	23 Apr 2021	18 Oct 2021	30 Apr 2021	18 Oct 2021	03 May 2021
30-BH107_0.9-1.0	SE218963.021	LB223704	21 Apr 2021	23 Apr 2021	18 Oct 2021	30 Apr 2021	18 Oct 2021	03 May 2021
30-BH107_2.3-2.4	SE218963.022	LB223704	21 Apr 2021	23 Apr 2021	18 Oct 2021	30 Apr 2021	18 Oct 2021	03 May 2021

HOLDING TIME SUMMARY

SE218963 R0

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

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

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
30-BH108_0.2-0.3	SE218963.023	LB223704	21 Apr 2021	23 Apr 2021	18 Oct 2021	30 Apr 2021	18 Oct 2021	03 May 2021
30-BH108_0.4-0.5	SE218963.024	LB223704	21 Apr 2021	23 Apr 2021	18 Oct 2021	30 Apr 2021	18 Oct 2021	03 May 2021
30-BH108_1.2-1.3	SE218963.025	LB223704	21 Apr 2021	23 Apr 2021	18 Oct 2021	30 Apr 2021	18 Oct 2021	03 May 2021
30-BH108_2.7-2.8	SE218963.026	LB223704	21 Apr 2021	23 Apr 2021	18 Oct 2021	30 Apr 2021	18 Oct 2021	03 May 2021
30-BH109_0.3-0.4	SE218963.027	LB223704	21 Apr 2021	23 Apr 2021	18 Oct 2021	30 Apr 2021	18 Oct 2021	03 May 2021
30-BH110M_0.2-0.3	SE218963.028	LB223704	21 Apr 2021	23 Apr 2021	18 Oct 2021	30 Apr 2021	18 Oct 2021	03 May 2021
30-BH110M_1.4-1.5	SE218963.029	LB223704	21 Apr 2021	23 Apr 2021	18 Oct 2021	30 Apr 2021	18 Oct 2021	03 May 2021

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
82_BH102M_0.4-0.6	SE218963.001	LB223477	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH101_0.2-0.3	SE218963.002	LB223477	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH101_0.5-0.6	SE218963.003	LB223477	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH101_0.9-1.0	SE218963.004	LB223477	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH101_4.4-4.5	SE218963.005	LB223477	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH102M_0.2-0.3	SE218963.006	LB223477	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH102M_0.5-0.6	SE218963.007	LB223477	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH102M_2.0-2.1	SE218963.008	LB223477	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH102M_4.0-4.1	SE218963.009	LB223477	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH103_0.3-0.4	SE218963.010	LB223478	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH103_0.9-1.0	SE218963.011	LB223478	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH104_0.4-0.5	SE218963.012	LB223478	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH104_2.0-2.1	SE218963.013	LB223478	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH104_2.7-2.5	SE218963.014	LB223478	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH105_0.4-0.5	SE218963.015	LB223478	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH106M_0.3-0.4	SE218963.016	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH106M_1.1-1.2	SE218963.017	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH106M_1.9-2.0	SE218963.018	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH106M_3.4-3.5	SE218963.019	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH107_0.3-0.4	SE218963.020	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH107_0.9-1.0	SE218963.021	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH107_2.3-2.4	SE218963.022	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH108_0.2-0.3	SE218963.023	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH108_0.4-0.5	SE218963.024	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH108_1.2-1.3	SE218963.025	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH108_2.7-2.8	SE218963.026	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH109_0.3-0.4	SE218963.027	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH110M_0.2-0.3	SE218963.028	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH110M_1.4-1.5	SE218963.029	LB223478	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021

VOC's in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
82_BH102M_0.4-0.6	SE218963.001	LB223484	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	29 Apr 2021
30-BH101_0.2-0.3	SE218963.002	LB223484	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	29 Apr 2021
30-BH101_0.5-0.6	SE218963.003	LB223484	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	29 Apr 2021
30-BH101_0.9-1.0	SE218963.004	LB223484	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	29 Apr 2021
30-BH101_4.4-4.5	SE218963.005	LB223484	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	29 Apr 2021
30-BH102M_0.2-0.3	SE218963.006	LB223484	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	29 Apr 2021
30-BH102M_0.5-0.6	SE218963.007	LB223484	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	29 Apr 2021
30-BH102M_2.0-2.1	SE218963.008	LB223484	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	29 Apr 2021
30-BH102M_4.0-4.1	SE218963.009	LB223484	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	29 Apr 2021
30-BH103_0.3-0.4	SE218963.010	LB223479	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH103_0.9-1.0	SE218963.011	LB223479	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH104_0.4-0.5	SE218963.012	LB223479	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH104_2.0-2.1	SE218963.013	LB223479	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH104_2.7-2.5	SE218963.014	LB223479	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH105_0.4-0.5	SE218963.015	LB223479	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH106M_0.3-0.4	SE218963.016	LB223479	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH106M_1.1-1.2	SE218963.017	LB223479	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH106M_1.9-2.0	SE218963.018	LB223479	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH106M_3.4-3.5	SE218963.019	LB223479	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021

HOLDING TIME SUMMARY

SE218963 R0

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

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
30-BH107_0.3-0.4	SE218963.020	LB223479	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH107_0.9-1.0	SE218963.021	LB223479	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH107_2.3-2.4	SE218963.022	LB223479	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH108_0.2-0.3	SE218963.023	LB223479	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH108_0.4-0.5	SE218963.024	LB223479	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH108_1.2-1.3	SE218963.025	LB223479	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH108_2.7-2.8	SE218963.026	LB223479	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH109_0.3-0.4	SE218963.027	LB223479	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH110M_0.2-0.3	SE218963.028	LB223479	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH110M_1.4-1.5	SE218963.029	LB223479	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
82_BH102M_0.4-0.6	SE218963.001	LB223484	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	29 Apr 2021
30-BH101_0.2-0.3	SE218963.002	LB223484	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	29 Apr 2021
30-BH101_0.5-0.6	SE218963.003	LB223484	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	29 Apr 2021
30-BH101_0.9-1.0	SE218963.004	LB223484	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	29 Apr 2021
30-BH101_4.4-4.5	SE218963.005	LB223484	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	29 Apr 2021
30-BH102M_0.2-0.3	SE218963.006	LB223484	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	29 Apr 2021
30-BH102M_0.5-0.6	SE218963.007	LB223484	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	29 Apr 2021
30-BH102M_2.0-2.1	SE218963.008	LB223484	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	29 Apr 2021
30-BH102M_4.0-4.1	SE218963.009	LB223484	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	29 Apr 2021
30-BH103_0.3-0.4	SE218963.010	LB223479	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH103_0.9-1.0	SE218963.011	LB223479	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH104_0.4-0.5	SE218963.012	LB223479	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH104_2.0-2.1	SE218963.013	LB223479	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH104_2.7-2.5	SE218963.014	LB223479	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH105_0.4-0.5	SE218963.015	LB223479	20 Apr 2021	23 Apr 2021	04 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH106M_0.3-0.4	SE218963.016	LB223479	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH106M_1.1-1.2	SE218963.017	LB223479	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH106M_1.9-2.0	SE218963.018	LB223479	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH106M_3.4-3.5	SE218963.019	LB223479	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH107_0.3-0.4	SE218963.020	LB223479	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH107_0.9-1.0	SE218963.021	LB223479	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH107_2.3-2.4	SE218963.022	LB223479	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH108_0.2-0.3	SE218963.023	LB223479	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH108_0.4-0.5	SE218963.024	LB223479	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH108_1.2-1.3	SE218963.025	LB223479	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH108_2.7-2.8	SE218963.026	LB223479	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH109_0.3-0.4	SE218963.027	LB223479	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH110M_0.2-0.3	SE218963.028	LB223479	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021
30-BH110M_1.4-1.5	SE218963.029	LB223479	21 Apr 2021	23 Apr 2021	05 May 2021	27 Apr 2021	06 Jun 2021	03 May 2021

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)	30-BH101_0.2-0.3	SE218963.002	%	60 - 130%	101
	30-BH102M_0.2-0.3	SE218963.006	%	60 - 130%	104
	30-BH103_0.3-0.4	SE218963.010	%	60 - 130%	106
	30-BH104_0.4-0.5	SE218963.012	%	60 - 130%	105
	30-BH105_0.4-0.5	SE218963.015	%	60 - 130%	106
	30-BH106M_0.3-0.4	SE218963.016	%	60 - 130%	111
	30-BH108_0.2-0.3	SE218963.023	%	60 - 130%	106

OP Pesticides in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	30-BH101_0.2-0.3	SE218963.002	%	60 - 130%	90
	30-BH102M_0.2-0.3	SE218963.006	%	60 - 130%	90
	30-BH103_0.3-0.4	SE218963.010	%	60 - 130%	93
	30-BH104_0.4-0.5	SE218963.012	%	60 - 130%	99
	30-BH105_0.4-0.5	SE218963.015	%	60 - 130%	96
	30-BH106M_0.3-0.4	SE218963.016	%	60 - 130%	91
	30-BH108_0.2-0.3	SE218963.023	%	60 - 130%	88
d14-p-terphenyl (Surrogate)	30-BH101_0.2-0.3	SE218963.002	%	60 - 130%	103
	30-BH102M_0.2-0.3	SE218963.006	%	60 - 130%	104
	30-BH103_0.3-0.4	SE218963.010	%	60 - 130%	93
	30-BH104_0.4-0.5	SE218963.012	%	60 - 130%	86
	30-BH105_0.4-0.5	SE218963.015	%	60 - 130%	99
	30-BH106M_0.3-0.4	SE218963.016	%	60 - 130%	90
	30-BH108_0.2-0.3	SE218963.023	%	60 - 130%	93

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	82_BH102M_0.4-0.6	SE218963.001	%	70 - 130%	95
	30-BH101_0.2-0.3	SE218963.002	%	70 - 130%	90
	30-BH101_0.5-0.6	SE218963.003	%	70 - 130%	92
	30-BH101_0.9-1.0	SE218963.004	%	70 - 130%	97
	30-BH101_4.4-4.5	SE218963.005	%	70 - 130%	93
	30-BH102M_0.2-0.3	SE218963.006	%	70 - 130%	90
	30-BH102M_0.5-0.6	SE218963.007	%	70 - 130%	85
	30-BH102M_2.0-2.1	SE218963.008	%	70 - 130%	100
	30-BH102M_4.0-4.1	SE218963.009	%	70 - 130%	92
	30-BH103_0.3-0.4	SE218963.010	%	70 - 130%	93
	30-BH103_0.9-1.0	SE218963.011	%	70 - 130%	94
	30-BH104_0.4-0.5	SE218963.012	%	70 - 130%	99
	30-BH104_2.0-2.1	SE218963.013	%	70 - 130%	93
	30-BH104_2.7-2.5	SE218963.014	%	70 - 130%	91
	30-BH105_0.4-0.5	SE218963.015	%	70 - 130%	96
	30-BH106M_0.3-0.4	SE218963.016	%	70 - 130%	91
	30-BH106M_1.1-1.2	SE218963.017	%	70 - 130%	80
	30-BH106M_1.9-2.0	SE218963.018	%	70 - 130%	102
	30-BH106M_3.4-3.5	SE218963.019	%	70 - 130%	94
	30-BH107_0.3-0.4	SE218963.020	%	70 - 130%	93
	30-BH107_0.9-1.0	SE218963.021	%	70 - 130%	90
	30-BH107_2.3-2.4	SE218963.022	%	70 - 130%	92
	30-BH108_0.2-0.3	SE218963.023	%	70 - 130%	88
	30-BH108_0.4-0.5	SE218963.024	%	70 - 130%	101
	30-BH108_1.2-1.3	SE218963.025	%	70 - 130%	91
	30-BH108_2.7-2.8	SE218963.026	%	70 - 130%	93
	30-BH109_0.3-0.4	SE218963.027	%	70 - 130%	94
	30-BH110M_0.2-0.3	SE218963.028	%	70 - 130%	93
	30-BH110M_1.4-1.5	SE218963.029	%	70 - 130%	91
d14-p-terphenyl (Surrogate)	82_BH102M_0.4-0.6	SE218963.001	%	70 - 130%	101
	30-BH101_0.2-0.3	SE218963.002	%	70 - 130%	103
	30-BH101_0.5-0.6	SE218963.003	%	70 - 130%	103
	30-BH101_0.9-1.0	SE218963.004	%	70 - 130%	110
	30-BH101_4.4-4.5	SE218963.005	%	70 - 130%	101
	30-BH102M_0.2-0.3	SE218963.006	%	70 - 130%	104

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 Soil (continued)

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d14-p-terphenyl (Surrogate)	30-BH102M_0.5-0.6	SE218963.007	%	70 - 130%	97
	30-BH102M_2.0-2.1	SE218963.008	%	70 - 130%	107
	30-BH102M_4.0-4.1	SE218963.009	%	70 - 130%	99
	30-BH103_0.3-0.4	SE218963.010	%	70 - 130%	93
	30-BH103_0.9-1.0	SE218963.011	%	70 - 130%	85
	30-BH104_0.4-0.5	SE218963.012	%	70 - 130%	86
	30-BH104_2.0-2.1	SE218963.013	%	70 - 130%	93
	30-BH104_2.7-2.5	SE218963.014	%	70 - 130%	98
	30-BH105_0.4-0.5	SE218963.015	%	70 - 130%	99
	30-BH106M_0.3-0.4	SE218963.016	%	70 - 130%	90
	30-BH106M_1.1-1.2	SE218963.017	%	70 - 130%	76
	30-BH106M_1.9-2.0	SE218963.018	%	70 - 130%	103
	30-BH106M_3.4-3.5	SE218963.019	%	70 - 130%	98
	30-BH107_0.3-0.4	SE218963.020	%	70 - 130%	95
	30-BH107_0.9-1.0	SE218963.021	%	70 - 130%	96
	30-BH107_2.3-2.4	SE218963.022	%	70 - 130%	100
	30-BH108_0.2-0.3	SE218963.023	%	70 - 130%	93
	30-BH108_0.4-0.5	SE218963.024	%	70 - 130%	105
	30-BH108_1.2-1.3	SE218963.025	%	70 - 130%	95
	30-BH108_2.7-2.8	SE218963.026	%	70 - 130%	93
	30-BH109_0.3-0.4	SE218963.027	%	70 - 130%	87
	30-BH110M_0.2-0.3	SE218963.028	%	70 - 130%	103
	30-BH110M_1.4-1.5	SE218963.029	%	70 - 130%	98
d5-nitrobenzene (Surrogate)	82_BH102M_0.4-0.6	SE218963.001	%	70 - 130%	97
	30-BH101_0.2-0.3	SE218963.002	%	70 - 130%	95
	30-BH101_0.5-0.6	SE218963.003	%	70 - 130%	96
	30-BH101_0.9-1.0	SE218963.004	%	70 - 130%	100
	30-BH101_4.4-4.5	SE218963.005	%	70 - 130%	96
	30-BH102M_0.2-0.3	SE218963.006	%	70 - 130%	98
	30-BH102M_0.5-0.6	SE218963.007	%	70 - 130%	92
	30-BH102M_2.0-2.1	SE218963.008	%	70 - 130%	104
	30-BH102M_4.0-4.1	SE218963.009	%	70 - 130%	97
	30-BH103_0.3-0.4	SE218963.010	%	70 - 130%	100
	30-BH103_0.9-1.0	SE218963.011	%	70 - 130%	101
	30-BH104_0.4-0.5	SE218963.012	%	70 - 130%	102
	30-BH104_2.0-2.1	SE218963.013	%	70 - 130%	97
	30-BH104_2.7-2.5	SE218963.014	%	70 - 130%	99
	30-BH105_0.4-0.5	SE218963.015	%	70 - 130%	99
	30-BH106M_0.3-0.4	SE218963.016	%	70 - 130%	94
	30-BH106M_1.1-1.2	SE218963.017	%	70 - 130%	88
	30-BH106M_1.9-2.0	SE218963.018	%	70 - 130%	114
	30-BH106M_3.4-3.5	SE218963.019	%	70 - 130%	105
	30-BH107_0.3-0.4	SE218963.020	%	70 - 130%	102
	30-BH107_0.9-1.0	SE218963.021	%	70 - 130%	102
	30-BH107_2.3-2.4	SE218963.022	%	70 - 130%	100
	30-BH108_0.2-0.3	SE218963.023	%	70 - 130%	92
	30-BH108_0.4-0.5	SE218963.024	%	70 - 130%	102
	30-BH108_1.2-1.3	SE218963.025	%	70 - 130%	101
	30-BH108_2.7-2.8	SE218963.026	%	70 - 130%	98
	30-BH109_0.3-0.4	SE218963.027	%	70 - 130%	103
	30-BH110M_0.2-0.3	SE218963.028	%	70 - 130%	104
	30-BH110M_1.4-1.5	SE218963.029	%	70 - 130%	97

PCBs in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	30-BH101_0.2-0.3	SE218963.002	%	60 - 130%	101
	30-BH102M_0.2-0.3	SE218963.006	%	60 - 130%	104
	30-BH103_0.3-0.4	SE218963.010	%	60 - 130%	106
	30-BH104_0.4-0.5	SE218963.012	%	60 - 130%	105
	30-BH105_0.4-0.5	SE218963.015	%	60 - 130%	106
	30-BH106M_0.3-0.4	SE218963.016	%	60 - 130%	111

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.

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	30-BH108_0.2-0.3	SE218963.023	%	60 - 130%	106

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
(13C2_PFTeDA) Isotopically Labelled Internal Recovery Standard	30-BH101_0.2-0.3	SE218963.002	%	0 - 130%	45
	30-BH102M_0.2-0.3	SE218963.006	%	0 - 130%	45
	30-BH104_0.4-0.5	SE218963.012	%	0 - 130%	49
	30-BH106M_0.3-0.4	SE218963.016	%	0 - 130%	41
(13C2-4:2 FTS) Isotopically Labelled Internal Recovery Standard	30-BH101_0.2-0.3	SE218963.002	%	0 - 150%	77
	30-BH102M_0.2-0.3	SE218963.006	%	0 - 150%	81
	30-BH104_0.4-0.5	SE218963.012	%	0 - 150%	76
	30-BH106M_0.3-0.4	SE218963.016	%	0 - 150%	86
(13C2-6:2 FTS) Isotopically Labelled Internal Recovery Standard	30-BH101_0.2-0.3	SE218963.002	%	0 - 150%	38
	30-BH102M_0.2-0.3	SE218963.006	%	0 - 150%	40
	30-BH104_0.4-0.5	SE218963.012	%	0 - 150%	39
	30-BH106M_0.3-0.4	SE218963.016	%	0 - 150%	41
(13C2-8:2 FTS) Isotopically Labelled Internal Recovery Standard	30-BH101_0.2-0.3	SE218963.002	%	0 - 150%	41
	30-BH102M_0.2-0.3	SE218963.006	%	0 - 150%	47
	30-BH104_0.4-0.5	SE218963.012	%	0 - 150%	48
	30-BH106M_0.3-0.4	SE218963.016	%	0 - 150%	46
(13C2-PFDoA) Isotopically Labelled Internal Recovery Standard	30-BH101_0.2-0.3	SE218963.002	%	0 - 150%	95
	30-BH102M_0.2-0.3	SE218963.006	%	0 - 150%	86
	30-BH104_0.4-0.5	SE218963.012	%	0 - 150%	86
	30-BH106M_0.3-0.4	SE218963.016	%	0 - 150%	88
(13C2-PFHxDA) Isotopically Labelled Internal Recovery Standard	30-BH101_0.2-0.3	SE218963.002	%	0 - 150%	22
	30-BH102M_0.2-0.3	SE218963.006	%	0 - 150%	12
	30-BH104_0.4-0.5	SE218963.012	%	0 - 150%	18
	30-BH106M_0.3-0.4	SE218963.016	%	0 - 150%	14
(13C3-PFBS) Isotopically Labelled Internal Recovery Standard	30-BH101_0.2-0.3	SE218963.002	%	0 - 150%	107
	30-BH102M_0.2-0.3	SE218963.006	%	0 - 150%	115
	30-BH104_0.4-0.5	SE218963.012	%	0 - 150%	112
	30-BH106M_0.3-0.4	SE218963.016	%	0 - 150%	122
(13C3-PFHxS) Isotopically Labelled Internal Recovery Standard	30-BH101_0.2-0.3	SE218963.002	%	0 - 150%	97
	30-BH102M_0.2-0.3	SE218963.006	%	0 - 150%	105
	30-BH104_0.4-0.5	SE218963.012	%	0 - 150%	98
	30-BH106M_0.3-0.4	SE218963.016	%	0 - 150%	107
(13C4_PFOA) Isotopically Labelled Internal Recovery Standard	30-BH101_0.2-0.3	SE218963.002	%	0 - 150%	111
	30-BH102M_0.2-0.3	SE218963.006	%	0 - 150%	114
	30-BH104_0.4-0.5	SE218963.012	%	0 - 150%	111
	30-BH106M_0.3-0.4	SE218963.016	%	0 - 150%	118
(13C4-PFBA) Isotopically Labelled Internal Recovery Standard	30-BH101_0.2-0.3	SE218963.002	%	0 - 150%	101
	30-BH102M_0.2-0.3	SE218963.006	%	0 - 150%	100
	30-BH104_0.4-0.5	SE218963.012	%	0 - 150%	106
	30-BH106M_0.3-0.4	SE218963.016	%	0 - 150%	102
(13C4-PFHpA) Isotopically Labelled Internal Recovery Standard	30-BH101_0.2-0.3	SE218963.002	%	0 - 150%	110
	30-BH102M_0.2-0.3	SE218963.006	%	0 - 150%	112
	30-BH104_0.4-0.5	SE218963.012	%	0 - 150%	107
	30-BH106M_0.3-0.4	SE218963.016	%	0 - 150%	120
(13C5-PFHxA) Isotopically Labelled Internal Recovery Standard	30-BH101_0.2-0.3	SE218963.002	%	0 - 150%	140
	30-BH102M_0.2-0.3	SE218963.006	%	0 - 150%	138
	30-BH104_0.4-0.5	SE218963.012	%	0 - 150%	135
	30-BH106M_0.3-0.4	SE218963.016	%	0 - 150%	163 †
(13C5-PFPeA) Isotopically Labelled Internal Recovery Standard	30-BH101_0.2-0.3	SE218963.002	%	0 - 150%	93
	30-BH102M_0.2-0.3	SE218963.006	%	0 - 150%	92
	30-BH104_0.4-0.5	SE218963.012	%	0 - 150%	99
	30-BH106M_0.3-0.4	SE218963.016	%	0 - 150%	94
(13C6-PFDA) Isotopically Labelled Internal Recovery Standard	30-BH101_0.2-0.3	SE218963.002	%	0 - 150%	111
	30-BH102M_0.2-0.3	SE218963.006	%	0 - 150%	110
	30-BH104_0.4-0.5	SE218963.012	%	0 - 150%	100
	30-BH106M_0.3-0.4	SE218963.016	%	0 - 150%	106
(13C7-PFUdA) Isotopically Labelled Internal Recovery Standard	30-BH101_0.2-0.3	SE218963.002	%	0 - 150%	103

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 Solid Samples (continued)

Method: MA-1523

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
(13C7-PFUdA) Isotopically Labelled Internal Recovery Standard	30-BH102M_0.2-0.3	SE218963.006	%	0 - 150%	92
	30-BH104_0.4-0.5	SE218963.012	%	0 - 150%	89
	30-BH106M_0.3-0.4	SE218963.016	%	0 - 150%	84
(13C8-PFOS) Isotopically Labelled Internal Recovery Standard	30-BH101_0.2-0.3	SE218963.002	%	0 - 150%	101
	30-BH102M_0.2-0.3	SE218963.006	%	0 - 150%	109
	30-BH104_0.4-0.5	SE218963.012	%	0 - 150%	109
	30-BH106M_0.3-0.4	SE218963.016	%	0 - 150%	106
(13C8-PFOSA) Isotopically Labelled Internal Recovery Standard	30-BH101_0.2-0.3	SE218963.002	%	0 - 150%	80
	30-BH102M_0.2-0.3	SE218963.006	%	0 - 150%	74
	30-BH104_0.4-0.5	SE218963.012	%	0 - 150%	86
	30-BH106M_0.3-0.4	SE218963.016	%	0 - 150%	87
(13C9-PFNA) Isotopically Labelled Internal Recovery Standard	30-BH101_0.2-0.3	SE218963.002	%	0 - 150%	105
	30-BH102M_0.2-0.3	SE218963.006	%	0 - 150%	112
	30-BH104_0.4-0.5	SE218963.012	%	0 - 150%	115
	30-BH106M_0.3-0.4	SE218963.016	%	0 - 150%	90
(D3-N-MeFOSA) Isotopically Labelled Internal Recovery Standard	30-BH101_0.2-0.3	SE218963.002	%	0 - 150%	49
	30-BH102M_0.2-0.3	SE218963.006	%	0 - 150%	37
	30-BH104_0.4-0.5	SE218963.012	%	0 - 150%	61
	30-BH106M_0.3-0.4	SE218963.016	%	0 - 150%	55
(D3-N-MeFOSAA) Isotopically Labelled Internal Recovery Standard	30-BH101_0.2-0.3	SE218963.002	%	0 - 150%	59
	30-BH102M_0.2-0.3	SE218963.006	%	0 - 150%	60
	30-BH104_0.4-0.5	SE218963.012	%	0 - 150%	59
	30-BH106M_0.3-0.4	SE218963.016	%	0 - 150%	48
(D5-N-EtFOSA) Isotopically Labelled Internal Recovery Standard	30-BH101_0.2-0.3	SE218963.002	%	0 - 150%	31
	30-BH102M_0.2-0.3	SE218963.006	%	0 - 150%	26
	30-BH104_0.4-0.5	SE218963.012	%	0 - 150%	37
	30-BH106M_0.3-0.4	SE218963.016	%	0 - 150%	48
(D5-N-EtFOSAA) Isotopically Labelled Internal Recovery Standard	30-BH101_0.2-0.3	SE218963.002	%	0 - 150%	49
	30-BH102M_0.2-0.3	SE218963.006	%	0 - 150%	53
	30-BH104_0.4-0.5	SE218963.012	%	0 - 150%	65
	30-BH106M_0.3-0.4	SE218963.016	%	0 - 150%	42
(D7-N-MeFOSE) Isotopically Labelled Internal Recovery Standard	30-BH101_0.2-0.3	SE218963.002	%	0 - 150%	78
	30-BH102M_0.2-0.3	SE218963.006	%	0 - 150%	74
	30-BH104_0.4-0.5	SE218963.012	%	0 - 150%	79
	30-BH106M_0.3-0.4	SE218963.016	%	0 - 150%	88
(D9-N-EtFOSE) Isotopically Labelled Internal Recovery Standard	30-BH101_0.2-0.3	SE218963.002	%	0 - 150%	56
	30-BH102M_0.2-0.3	SE218963.006	%	0 - 150%	51
	30-BH104_0.4-0.5	SE218963.012	%	0 - 150%	54
	30-BH106M_0.3-0.4	SE218963.016	%	0 - 150%	67

VOC's in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	82_BH102M_0.4-0.6	SE218963.001	%	60 - 130%	76
	30-BH101_0.2-0.3	SE218963.002	%	60 - 130%	75
	30-BH101_0.5-0.6	SE218963.003	%	60 - 130%	69
	30-BH101_0.9-1.0	SE218963.004	%	60 - 130%	74
	30-BH101_4.4-4.5	SE218963.005	%	60 - 130%	58 ①
	30-BH102M_0.2-0.3	SE218963.006	%	60 - 130%	61
	30-BH102M_0.5-0.6	SE218963.007	%	60 - 130%	64
	30-BH102M_2.0-2.1	SE218963.008	%	60 - 130%	64
	30-BH102M_4.0-4.1	SE218963.009	%	60 - 130%	63
	30-BH103_0.3-0.4	SE218963.010	%	60 - 130%	109
	30-BH103_0.9-1.0	SE218963.011	%	60 - 130%	115
	30-BH104_0.4-0.5	SE218963.012	%	60 - 130%	120
	30-BH104_2.0-2.1	SE218963.013	%	60 - 130%	117
	30-BH104_2.7-2.5	SE218963.014	%	60 - 130%	111
	30-BH105_0.4-0.5	SE218963.015	%	60 - 130%	118
	30-BH106M_0.3-0.4	SE218963.016	%	60 - 130%	119
	30-BH106M_1.1-1.2	SE218963.017	%	60 - 130%	124
	30-BH106M_1.9-2.0	SE218963.018	%	60 - 130%	117
	30-BH106M_3.4-3.5	SE218963.019	%	60 - 130%	116

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.

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	30-BH107_0.3-0.4	SE218963.020	%	60 - 130%	121
	30-BH107_0.9-1.0	SE218963.021	%	60 - 130%	62
	30-BH107_2.3-2.4	SE218963.022	%	60 - 130%	68
	30-BH108_0.2-0.3	SE218963.023	%	60 - 130%	72
	30-BH108_0.4-0.5	SE218963.024	%	60 - 130%	69
	30-BH108_1.2-1.3	SE218963.025	%	60 - 130%	69
	30-BH108_2.7-2.8	SE218963.026	%	60 - 130%	64
	30-BH109_0.3-0.4	SE218963.027	%	60 - 130%	67
	30-BH110M_0.2-0.3	SE218963.028	%	60 - 130%	66
	30-BH110M_1.4-1.5	SE218963.029	%	60 - 130%	68
d4-1,2-dichloroethane (Surrogate)	82_BH102M_0.4-0.6	SE218963.001	%	60 - 130%	137 ⓘ
	30-BH101_0.2-0.3	SE218963.002	%	60 - 130%	140 ⓘ
	30-BH101_0.5-0.6	SE218963.003	%	60 - 130%	118
	30-BH101_0.9-1.0	SE218963.004	%	60 - 130%	139 †
	30-BH101_4.4-4.5	SE218963.005	%	60 - 130%	101
	30-BH102M_0.2-0.3	SE218963.006	%	60 - 130%	113
	30-BH102M_0.5-0.6	SE218963.007	%	60 - 130%	114
	30-BH102M_2.0-2.1	SE218963.008	%	60 - 130%	112
	30-BH102M_4.0-4.1	SE218963.009	%	60 - 130%	115
	30-BH103_0.3-0.4	SE218963.010	%	60 - 130%	115
	30-BH103_0.9-1.0	SE218963.011	%	60 - 130%	120
	30-BH104_0.4-0.5	SE218963.012	%	60 - 130%	126
	30-BH104_2.0-2.1	SE218963.013	%	60 - 130%	123
	30-BH104_2.7-2.5	SE218963.014	%	60 - 130%	116
	30-BH105_0.4-0.5	SE218963.015	%	60 - 130%	124
	30-BH106M_0.3-0.4	SE218963.016	%	60 - 130%	120
	30-BH106M_1.1-1.2	SE218963.017	%	60 - 130%	114
	30-BH106M_1.9-2.0	SE218963.018	%	60 - 130%	107
	30-BH106M_3.4-3.5	SE218963.019	%	60 - 130%	123
	30-BH107_0.3-0.4	SE218963.020	%	60 - 130%	116
	30-BH107_0.9-1.0	SE218963.021	%	60 - 130%	70
	30-BH107_2.3-2.4	SE218963.022	%	60 - 130%	80
	30-BH108_0.2-0.3	SE218963.023	%	60 - 130%	83
	30-BH108_0.4-0.5	SE218963.024	%	60 - 130%	80
	30-BH108_1.2-1.3	SE218963.025	%	60 - 130%	83
	30-BH108_2.7-2.8	SE218963.026	%	60 - 130%	76
	30-BH109_0.3-0.4	SE218963.027	%	60 - 130%	85
	30-BH110M_0.2-0.3	SE218963.028	%	60 - 130%	82
	30-BH110M_1.4-1.5	SE218963.029	%	60 - 130%	85
d8-toluene (Surrogate)	82_BH102M_0.4-0.6	SE218963.001	%	60 - 130%	114
	30-BH101_0.2-0.3	SE218963.002	%	60 - 130%	115
	30-BH101_0.5-0.6	SE218963.003	%	60 - 130%	99
	30-BH101_0.9-1.0	SE218963.004	%	60 - 130%	114
	30-BH101_4.4-4.5	SE218963.005	%	60 - 130%	80
	30-BH102M_0.2-0.3	SE218963.006	%	60 - 130%	89
	30-BH102M_0.5-0.6	SE218963.007	%	60 - 130%	95
	30-BH102M_2.0-2.1	SE218963.008	%	60 - 130%	94
	30-BH102M_4.0-4.1	SE218963.009	%	60 - 130%	93
	30-BH103_0.3-0.4	SE218963.010	%	60 - 130%	111
	30-BH103_0.9-1.0	SE218963.011	%	60 - 130%	118
	30-BH104_0.4-0.5	SE218963.012	%	60 - 130%	124
	30-BH104_2.0-2.1	SE218963.013	%	60 - 130%	121
	30-BH104_2.7-2.5	SE218963.014	%	60 - 130%	120
	30-BH105_0.4-0.5	SE218963.015	%	60 - 130%	129
	30-BH106M_0.3-0.4	SE218963.016	%	60 - 130%	133 ⓘ
	30-BH106M_1.1-1.2	SE218963.017	%	60 - 130%	121
	30-BH106M_1.9-2.0	SE218963.018	%	60 - 130%	120
	30-BH106M_3.4-3.5	SE218963.019	%	60 - 130%	114
	30-BH107_0.3-0.4	SE218963.020	%	60 - 130%	129
	30-BH107_0.9-1.0	SE218963.021	%	60 - 130%	72
	30-BH107_2.3-2.4	SE218963.022	%	60 - 130%	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.

VOC's in Soil (continued)

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d8-toluene (Surrogate)	30-BH108_0.2-0.3	SE218963.023	%	60 - 130%	89
	30-BH108_0.4-0.5	SE218963.024	%	60 - 130%	85
	30-BH108_1.2-1.3	SE218963.025	%	60 - 130%	86
	30-BH108_2.7-2.8	SE218963.026	%	60 - 130%	78
	30-BH109_0.3-0.4	SE218963.027	%	60 - 130%	88
	30-BH110M_0.2-0.3	SE218963.028	%	60 - 130%	85
	30-BH110M_1.4-1.5	SE218963.029	%	60 - 130%	89

Volatile Petroleum Hydrocarbons in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	82_BH102M_0.4-0.6	SE218963.001	%	60 - 130%	76
	30-BH101_0.2-0.3	SE218963.002	%	60 - 130%	75
	30-BH101_0.5-0.6	SE218963.003	%	60 - 130%	69
	30-BH101_0.9-1.0	SE218963.004	%	60 - 130%	74
	30-BH101_4.4-4.5	SE218963.005	%	60 - 130%	58 ①
	30-BH102M_0.2-0.3	SE218963.006	%	60 - 130%	61
	30-BH102M_0.5-0.6	SE218963.007	%	60 - 130%	64
	30-BH102M_2.0-2.1	SE218963.008	%	60 - 130%	64
	30-BH102M_4.0-4.1	SE218963.009	%	60 - 130%	63
	30-BH103_0.3-0.4	SE218963.010	%	60 - 130%	109
	30-BH103_0.9-1.0	SE218963.011	%	60 - 130%	115
	30-BH104_0.4-0.5	SE218963.012	%	60 - 130%	120
	30-BH104_2.0-2.1	SE218963.013	%	60 - 130%	117
	30-BH104_2.7-2.5	SE218963.014	%	60 - 130%	111
	30-BH105_0.4-0.5	SE218963.015	%	60 - 130%	118
	30-BH106M_0.3-0.4	SE218963.016	%	60 - 130%	119
	30-BH106M_1.1-1.2	SE218963.017	%	60 - 130%	124
	30-BH106M_1.9-2.0	SE218963.018	%	60 - 130%	117
	30-BH106M_3.4-3.5	SE218963.019	%	60 - 130%	116
	30-BH107_0.3-0.4	SE218963.020	%	60 - 130%	121
	30-BH107_0.9-1.0	SE218963.021	%	60 - 130%	62
	30-BH107_2.3-2.4	SE218963.022	%	60 - 130%	68
	30-BH108_0.2-0.3	SE218963.023	%	60 - 130%	72
	30-BH108_0.4-0.5	SE218963.024	%	60 - 130%	69
	30-BH108_1.2-1.3	SE218963.025	%	60 - 130%	69
	30-BH108_2.7-2.8	SE218963.026	%	60 - 130%	64
	30-BH109_0.3-0.4	SE218963.027	%	60 - 130%	67
	30-BH110M_0.2-0.3	SE218963.028	%	60 - 130%	66
	30-BH110M_1.4-1.5	SE218963.029	%	60 - 130%	68
d4-1,2-dichloroethane (Surrogate)	82_BH102M_0.4-0.6	SE218963.001	%	60 - 130%	137 ①
	30-BH101_0.2-0.3	SE218963.002	%	60 - 130%	140 ①
	30-BH101_0.5-0.6	SE218963.003	%	60 - 130%	118
	30-BH101_0.9-1.0	SE218963.004	%	60 - 130%	139 ①
	30-BH101_4.4-4.5	SE218963.005	%	60 - 130%	101
	30-BH102M_0.2-0.3	SE218963.006	%	60 - 130%	113
	30-BH102M_0.5-0.6	SE218963.007	%	60 - 130%	114
	30-BH102M_2.0-2.1	SE218963.008	%	60 - 130%	112
	30-BH102M_4.0-4.1	SE218963.009	%	60 - 130%	115
	30-BH103_0.3-0.4	SE218963.010	%	60 - 130%	115
	30-BH103_0.9-1.0	SE218963.011	%	60 - 130%	120
	30-BH104_0.4-0.5	SE218963.012	%	60 - 130%	126
	30-BH104_2.0-2.1	SE218963.013	%	60 - 130%	123
	30-BH104_2.7-2.5	SE218963.014	%	60 - 130%	116
	30-BH105_0.4-0.5	SE218963.015	%	60 - 130%	124
	30-BH106M_0.3-0.4	SE218963.016	%	60 - 130%	120
	30-BH106M_1.1-1.2	SE218963.017	%	60 - 130%	114
	30-BH106M_1.9-2.0	SE218963.018	%	60 - 130%	107
	30-BH106M_3.4-3.5	SE218963.019	%	60 - 130%	123
	30-BH107_0.3-0.4	SE218963.020	%	60 - 130%	116
	30-BH107_0.9-1.0	SE218963.021	%	60 - 130%	70
	30-BH107_2.3-2.4	SE218963.022	%	60 - 130%	80

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.

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d4-1,2-dichloroethane (Surrogate)	30-BH108_0.2-0.3	SE218963.023	%	60 - 130%	83
	30-BH108_0.4-0.5	SE218963.024	%	60 - 130%	80
	30-BH108_1.2-1.3	SE218963.025	%	60 - 130%	83
	30-BH108_2.7-2.8	SE218963.026	%	60 - 130%	76
	30-BH109_0.3-0.4	SE218963.027	%	60 - 130%	85
	30-BH110M_0.2-0.3	SE218963.028	%	60 - 130%	82
	30-BH110M_1.4-1.5	SE218963.029	%	60 - 130%	85
d8-toluene (Surrogate)	82_BH102M_0.4-0.6	SE218963.001	%	60 - 130%	114
	30-BH101_0.2-0.3	SE218963.002	%	60 - 130%	115
	30-BH101_0.5-0.6	SE218963.003	%	60 - 130%	99
	30-BH101_0.9-1.0	SE218963.004	%	60 - 130%	114
	30-BH101_4.4-4.5	SE218963.005	%	60 - 130%	80
	30-BH102M_0.2-0.3	SE218963.006	%	60 - 130%	89
	30-BH102M_0.5-0.6	SE218963.007	%	60 - 130%	95
	30-BH102M_2.0-2.1	SE218963.008	%	60 - 130%	94
	30-BH102M_4.0-4.1	SE218963.009	%	60 - 130%	93
	30-BH103_0.3-0.4	SE218963.010	%	60 - 130%	111
	30-BH103_0.9-1.0	SE218963.011	%	60 - 130%	118
	30-BH104_0.4-0.5	SE218963.012	%	60 - 130%	124
	30-BH104_2.0-2.1	SE218963.013	%	60 - 130%	121
	30-BH104_2.7-2.5	SE218963.014	%	60 - 130%	120
	30-BH105_0.4-0.5	SE218963.015	%	60 - 130%	129
	30-BH106M_0.3-0.4	SE218963.016	%	60 - 130%	133 ⓘ
	30-BH106M_1.1-1.2	SE218963.017	%	60 - 130%	121
	30-BH106M_1.9-2.0	SE218963.018	%	60 - 130%	120
	30-BH106M_3.4-3.5	SE218963.019	%	60 - 130%	114
	30-BH107_0.3-0.4	SE218963.020	%	60 - 130%	129
	30-BH107_0.9-1.0	SE218963.021	%	60 - 130%	72
	30-BH107_2.3-2.4	SE218963.022	%	60 - 130%	83
	30-BH108_0.2-0.3	SE218963.023	%	60 - 130%	89
	30-BH108_0.4-0.5	SE218963.024	%	60 - 130%	85
	30-BH108_1.2-1.3	SE218963.025	%	60 - 130%	86
	30-BH108_2.7-2.8	SE218963.026	%	60 - 130%	78
	30-BH109_0.3-0.4	SE218963.027	%	60 - 130%	88
	30-BH110M_0.2-0.3	SE218963.028	%	60 - 130%	85
	30-BH110M_1.4-1.5	SE218963.029	%	60 - 130%	89

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

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

Mercury in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB223705.001	Mercury	mg/kg	0.05	<0.05
LB223706.001	Mercury	mg/kg	0.05	<0.05

OC Pesticides in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB223477.001		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
		Alpha BHC	mg/kg	0.1	<0.1
		Lindane	mg/kg	0.1	<0.1
		Heptachlor	mg/kg	0.1	<0.1
		Aldrin	mg/kg	0.1	<0.1
		Beta BHC	mg/kg	0.1	<0.1
		Delta BHC	mg/kg	0.1	<0.1
		Heptachlor epoxide	mg/kg	0.1	<0.1
		Alpha Endosulfan	mg/kg	0.2	<0.2
		Gamma Chlordane	mg/kg	0.1	<0.1
		Alpha Chlordane	mg/kg	0.1	<0.1
		p,p'-DDE	mg/kg	0.1	<0.1
		Dieldrin	mg/kg	0.2	<0.2
		Endrin	mg/kg	0.2	<0.2
		Beta Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDD	mg/kg	0.1	<0.1
		p,p'-DDT	mg/kg	0.1	<0.1
		Endosulfan sulphate	mg/kg	0.1	<0.1
		Endrin Aldehyde	mg/kg	0.1	<0.1
		Methoxychlor	mg/kg	0.1	<0.1
		Endrin Ketone	mg/kg	0.1	<0.1
		Isodrin	mg/kg	0.1	<0.1
		Mirex	mg/kg	0.1	<0.1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	97
LB223478.001		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
		Alpha BHC	mg/kg	0.1	<0.1
		Lindane	mg/kg	0.1	<0.1
		Heptachlor	mg/kg	0.1	<0.1
		Aldrin	mg/kg	0.1	<0.1
		Beta BHC	mg/kg	0.1	<0.1
		Delta BHC	mg/kg	0.1	<0.1
		Heptachlor epoxide	mg/kg	0.1	<0.1
		Alpha Endosulfan	mg/kg	0.2	<0.2
		Gamma Chlordane	mg/kg	0.1	<0.1
		Alpha Chlordane	mg/kg	0.1	<0.1
		p,p'-DDE	mg/kg	0.1	<0.1
		Dieldrin	mg/kg	0.2	<0.2
		Endrin	mg/kg	0.2	<0.2
		Beta Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDD	mg/kg	0.1	<0.1
		p,p'-DDT	mg/kg	0.1	<0.1
		Endosulfan sulphate	mg/kg	0.1	<0.1
		Endrin Aldehyde	mg/kg	0.1	<0.1
		Methoxychlor	mg/kg	0.1	<0.1
		Endrin Ketone	mg/kg	0.1	<0.1
		Isodrin	mg/kg	0.1	<0.1
		Mirex	mg/kg	0.1	<0.1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	99

OP Pesticides in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB223477.001	Dichlorvos	mg/kg	0.5	<0.5
	Dimethoate	mg/kg	0.5	<0.5
	Diazinon (Dimpylate)	mg/kg	0.5	<0.5
	Fenitrothion	mg/kg	0.2	<0.2
	Malathion	mg/kg	0.2	<0.2

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

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

OP Pesticides in Soil (continued)

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

Sample Number		Parameter	Units	LOR	Result
LB223477.001		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2
		Bromophos Ethyl	mg/kg	0.2	<0.2
		Methidathion	mg/kg	0.5	<0.5
		Ethion	mg/kg	0.2	<0.2
		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2
	Surrogates	2-fluorobiphenyl (Surrogate)	%	-	98
		d14-p-terphenyl (Surrogate)	%	-	94
LB223478.001		Dichlorvos	mg/kg	0.5	<0.5
		Dimethoate	mg/kg	0.5	<0.5
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5
		Fenitrothion	mg/kg	0.2	<0.2
		Malathion	mg/kg	0.2	<0.2
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2
		Bromophos Ethyl	mg/kg	0.2	<0.2
		Methidathion	mg/kg	0.5	<0.5
		Ethion	mg/kg	0.2	<0.2
		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2
	Surrogates	2-fluorobiphenyl (Surrogate)	%	-	98
		d14-p-terphenyl (Surrogate)	%	-	100

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB223477.001		Naphthalene	mg/kg	0.1	<0.1
		2-methylnaphthalene	mg/kg	0.1	<0.1
		1-methylnaphthalene	mg/kg	0.1	<0.1
		Acenaphthylene	mg/kg	0.1	<0.1
		Acenaphthene	mg/kg	0.1	<0.1
		Fluorene	mg/kg	0.1	<0.1
		Phenanthrene	mg/kg	0.1	<0.1
		Anthracene	mg/kg	0.1	<0.1
		Fluoranthene	mg/kg	0.1	<0.1
		Pyrene	mg/kg	0.1	<0.1
		Benzo(a)anthracene	mg/kg	0.1	<0.1
		Chrysene	mg/kg	0.1	<0.1
		Benzo(a)pyrene	mg/kg	0.1	<0.1
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1
		Benzo(ghi)perylene	mg/kg	0.1	<0.1
		Total PAH (18)	mg/kg	0.8	<0.8
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	104
		2-fluorobiphenyl (Surrogate)	%	-	98
		d14-p-terphenyl (Surrogate)	%	-	94
LB223478.001		Naphthalene	mg/kg	0.1	<0.1
		2-methylnaphthalene	mg/kg	0.1	<0.1
		1-methylnaphthalene	mg/kg	0.1	<0.1
		Acenaphthylene	mg/kg	0.1	<0.1
		Acenaphthene	mg/kg	0.1	<0.1
		Fluorene	mg/kg	0.1	<0.1
		Phenanthrene	mg/kg	0.1	<0.1
		Anthracene	mg/kg	0.1	<0.1
		Fluoranthene	mg/kg	0.1	<0.1
		Pyrene	mg/kg	0.1	<0.1
		Benzo(a)anthracene	mg/kg	0.1	<0.1
		Chrysene	mg/kg	0.1	<0.1
		Benzo(a)pyrene	mg/kg	0.1	<0.1
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1
		Benzo(ghi)perylene	mg/kg	0.1	<0.1
		Total PAH (18)	mg/kg	0.8	<0.8

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
LB223478.001	Surrogates	d5-nitrobenzene (Surrogate)	%	-	105
		2-fluorobiphenyl (Surrogate)	%	-	98
		d14-p-terphenyl (Surrogate)	%	-	100

PCBs in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB223477.001		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	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	97
LB223478.001		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	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	99

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

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

Sample Number	Parameter	Units	LOR	Result
LB223701.001	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
LB223704.001	Arsenic, As	mg/kg	1	<1
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.5	<0.5
	Copper, Cu	mg/kg	0.5	<0.5
	Nickel, Ni	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1
	Zinc, Zn	mg/kg	2	<2.0

TRH (Total Recoverable Hydrocarbons) in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB223477.001	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
LB223478.001	TRH C10-C14	mg/kg	20	<20
	TRH C15-C28	mg/kg	45	<45
	TRH C29-C36	mg/kg	45	<45
	TRH C37-C40	mg/kg	100	<100
	TRH C10-C36 Total	mg/kg	110	<110

VOC's in Soil

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

Sample Number	Parameter	Units	LOR

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
LB223479.001	Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.1	<0.1
		Toluene	mg/kg	0.1	<0.1
		Ethylbenzene	mg/kg	0.1	<0.1
		m/p-xylene	mg/kg	0.2	<0.2
		o-xylene	mg/kg	0.1	<0.1
	Polycyclic VOCs	Naphthalene	mg/kg	0.1	<0.1
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	81
		d8-toluene (Surrogate)	%	-	80
		Bromofluorobenzene (Surrogate)	%	-	92
	Totals	Total BTEX	mg/kg	0.6	<0.6
LB223484.001	Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.1	<0.1
		Toluene	mg/kg	0.1	<0.1
		Ethylbenzene	mg/kg	0.1	<0.1
		m/p-xylene	mg/kg	0.2	<0.2
		o-xylene	mg/kg	0.1	<0.1
	Polycyclic VOCs	Naphthalene	mg/kg	0.1	<0.1
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	130
		d8-toluene (Surrogate)	%	-	106
		Bromofluorobenzene (Surrogate)	%	-	97
	Totals	Total BTEX	mg/kg	0.6	<0.6

Volatile Petroleum Hydrocarbons in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB223479.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	81
LB223484.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	130

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

Mercury in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE218963.010	LB223706.014	Mercury	mg/kg	0.05	<0.05	<0.05	200	0
SE218963.019	LB223706.024	Mercury	mg/kg	0.05	<0.05	<0.05	200	0
SE218963.020	LB223705.014	Mercury	mg/kg	0.05	0.05	<0.05	141	8
SE218963.029	LB223705.024	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 %
SE218952.001	LB223487.011	% Moisture	%w/w	1	11.9	14.6	38	20
SE218963.009	LB223487.022	% Moisture	%w/w	1	13.4	14.1	37	5
SE218963.019	LB223662.011	% Moisture	%w/w	1	23.4	23.3	34	0
SE218963.029	LB223662.022	% Moisture	%w/w	1	18.3	18.8	35	3

OC Pesticides in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE218952.001	LB223477.014		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane	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
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDE	mg/kg	0.1	<0.1	<0.1	148	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	148	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
			trans-Nonachlor	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
			o,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT	mg/kg	0.1	<0.1	<0.1	144	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	144	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	196	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin Ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.15	0.15	30	1
SE218963.023	LB223478.029		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane	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
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDE	mg/kg	0.1	<0.1	<0.1	165	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	165	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
			trans-Nonachlor	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
			o,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	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

OC Pesticides in Soil (continued)

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE218963.023	LB223478.029		p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	179	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin Ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.16	0.16	30	2

OP Pesticides in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE218952.001	LB223477.027		Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
			Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
			Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
			Malathion	mg/kg	0.2	<0.2	<0.2	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
			Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
			Ethion	mg/kg	0.2	<0.2	<0.2	200	0
			Azinphos-methyl (Guthion)	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	-	0.5	0.5	30	4
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	6

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE218952.001	LB223477.014		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	200	0
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	0.1	<0.1	135	0
			Pyrene	mg/kg	0.1	0.1	0.1	125	10
			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	184	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	197	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	mg/kg	0.3	<0.3	<0.3	134	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	mg/kg	0.2	<0.2	<0.2	175	0
			Total PAH (18)	mg/kg	0.8	<0.8	<0.8	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.6	0.5	30	7
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.6	0.5	30	8
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	10
SE218963.009	LB223477.028		Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
			Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0

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

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE218963.009	LB223477.028		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	195	0
			Chrysene	mg/kg	0.1	<0.1	<0.1	183	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
				TEQ (mg/kg)	0.2	<0.2	<0.2	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR	mg/kg	0.3	<0.3	<0.3	134	0
				TEQ (mg/kg)	0.3	<0.3	<0.3	134	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	mg/kg	0.2	<0.2	<0.2	175	0
				TEQ (mg/kg)	0.2	<0.2	<0.2	175	0
			Total PAH (18)	mg/kg	0.8	<0.8	<0.8	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.6	30	20
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.6	30	24
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.6	30	26
SE218963.020	LB223478.027		Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
			Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	0.1	0.1	99	7
			Pyrene	mg/kg	0.1	0.2	0.2	92	10
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	169	0
			Chrysene	mg/kg	0.1	<0.1	<0.1	162	0
			Benzo(b&j)fluoranthene	mg/kg	0.1	0.1	<0.1	132	4
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	137	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	194	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	174	0
			Carcinogenic PAHs, BaP TEQ <LOR=0	mg/kg	0.2	<0.2	<0.2	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR	mg/kg	0.3	<0.3	<0.3	134	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	mg/kg	0.2	<0.2	<0.2	175	0
			Total PAH (18)	mg/kg	0.8	<0.8	<0.8	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	4
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.4	30	4
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	2
SE218963.028	LB223478.028		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	0.3	80	66
			Anthracene	mg/kg	0.1	<0.1	<0.1	183	0
			Fluoranthene	mg/kg	0.1	0.2	0.3	67	25
			Pyrene	mg/kg	0.1	0.3	0.3	66	14
			Benzo(a)anthracene	mg/kg	0.1	0.1	0.1	113	21
			Chrysene	mg/kg	0.1	<0.1	0.1	115	31
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	0.1	116	39
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	160	0
			Benzo(a)pyrene	mg/kg	0.1	<0.1	0.1	135	2

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

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE218963.028	LB223478.028		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	196	0
			Carcinogenic PAHs, BaP TEQ <LOR=0	mg/kg	0.2	<0.2	<0.2	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR	mg/kg	0.3	<0.3	<0.3	132	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	mg/kg	0.2	<0.2	<0.2	135	0
			Total PAH (18)	mg/kg	0.8	<0.8	1.4	104	57
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	4
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	3
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.4	30	16

PCBs in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE218952.001	LB223477.014		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	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0	0	30	1
SE218963.023	LB223478.029		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	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0	0	30	2

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 %
SE218963.010	LB223701.014	Arsenic, As	mg/kg	1	5	5	51	8
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	2.4	2.6	50	7
		Copper, Cu	mg/kg	0.5	5.7	5.8	39	3
		Nickel, Ni	mg/kg	0.5	1.0	1.2	74	17
		Lead, Pb	mg/kg	1	19	20	35	6
		Zinc, Zn	mg/kg	2	15	18	42	14
SE218963.019	LB223701.024	Arsenic, As	mg/kg	1	10	9	41	8
		Cadmium, Cd	mg/kg	0.3	0.7	1.8	54	84 ②
		Chromium, Cr	mg/kg	0.5	160	63	30	85 ②
		Copper, Cu	mg/kg	0.5	290	400	30	32 ②
		Nickel, Ni	mg/kg	0.5	40	30	31	29
		Lead, Pb	mg/kg	1	200	250	30	24
		Zinc, Zn	mg/kg	2	410	560	30	32 ②
SE218963.029	LB223704.024	Arsenic, As	mg/kg	1	5	5	50	7
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	10	5.9	36	52 ②
		Copper, Cu	mg/kg	0.5	9.2	9.4	35	2
		Nickel, Ni	mg/kg	0.5	1.7	0.9	69	58
		Lead, Pb	mg/kg	1	20	22	35	10
		Zinc, Zn	mg/kg	2	14	12	45	14

TRH (Total Recoverable Hydrocarbons) in Soil

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

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

TRH (Total Recoverable Hydrocarbons) in Soil (continued)

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE218952.001	LB223477.014		TRH C10-C14	mg/kg	20	<20	<20	200	0
			TRH C15-C28	mg/kg	45	51	<45	129	13
			TRH C29-C36	mg/kg	45	110	91	76	14
			TRH C37-C40	mg/kg	100	<100	<100	200	0
			TRH C10-C36 Total	mg/kg	110	160	<110	119	35
			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	120	96	113	23
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0
SE218963.009	LB223477.025		TRH C10-C14	mg/kg	20	<20	<20	200	0
			TRH C15-C28	mg/kg	45	120	95	72	22
			TRH C29-C36	mg/kg	45	170	130	60	28
			TRH C37-C40	mg/kg	100	<100	<100	200	0
			TRH C10-C36 Total	mg/kg	110	290	230	73	25
			TRH >C10-C40 Total (F bands)	mg/kg	210	240	<210	130	12
		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	240	180	73	25
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0
SE218963.020	LB223478.027		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
SE218963.028	LB223478.028		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

VOC's in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE218952.001	LB223484.014	Monocyclic Aromatic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
			Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	11.3	11.6	50	2
			d8-toluene (Surrogate)	mg/kg	-	9.2	9.4	50	2
			Bromofluorobenzene (Surrogate)	mg/kg	-	6.6	6.7	50	2
		Totals	Total Xylenes	mg/kg	0.3	<0.3	<0.3	200	0
			Total BTEX	mg/kg	0.6	<0.6	<0.6	200	0
SE218963.009	LB223484.025	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	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	11.5	12.5	50	8

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

VOC's in Soil (continued)

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE218963.009	LB223484.025	Surrogates	d8-toluene (Surrogate)	mg/kg	-	9.3	10.1	50	8
			Bromofluorobenzene (Surrogate)	mg/kg	-	6.3	6.6	50	4
		Totals	Total Xylenes	mg/kg	0.3	<0.3	<0.3	200	0
			Total BTEX	mg/kg	0.6	<0.6	<0.6	200	0
SE218963.019	LB223479.014	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	12.3	12.9	50	5
			d8-toluene (Surrogate)	mg/kg	-	11.4	12.2	50	6
			Bromofluorobenzene (Surrogate)	mg/kg	-	11.6	12.4	50	6
		Totals	Total Xylenes	mg/kg	0.3	<0.3	<0.3	200	0
			Total BTEX	mg/kg	0.6	<0.6	<0.6	200	0
SE218963.029	LB223479.025	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.5	8.3	50	2
			d8-toluene (Surrogate)	mg/kg	-	8.9	8.8	50	1
			Bromofluorobenzene (Surrogate)	mg/kg	-	6.8	6.6	50	3
		Totals	Total Xylenes	mg/kg	0.3	<0.3	<0.3	200	0
			Total BTEX	mg/kg	0.6	<0.6	<0.6	200	0

Volatile Petroleum Hydrocarbons in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE218952.001	LB223484.014		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	11.3	11.6	30	2
			d8-toluene (Surrogate)	mg/kg	-	9.2	9.4	30	2
			Bromofluorobenzene (Surrogate)	mg/kg	-	6.6	6.7	30	2
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0
SE218963.009	LB223484.025		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	-	11.5	12.5	30	8
			d8-toluene (Surrogate)	mg/kg	-	9.3	10.1	30	8
			Bromofluorobenzene (Surrogate)	mg/kg	-	6.3	6.6	30	4
		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
SE218963.019	LB223479.014		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	12.3	12.9	30	5
			d8-toluene (Surrogate)	mg/kg	-	11.4	12.2	30	6
			Bromofluorobenzene (Surrogate)	mg/kg	-	11.6	12.4	30	6
		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
SE218963.029	LB223479.025		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.5	8.3	30	2
			d8-toluene (Surrogate)	mg/kg	-	8.9	8.8	30	1
			Bromofluorobenzene (Surrogate)	mg/kg	-	6.8	6.6	30	3
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0

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

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

Mercury in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB223705.002	Mercury	mg/kg	0.05	0.19	0.2	70 - 130	94
LB223706.002	Mercury	mg/kg	0.05	0.20	0.2	70 - 130	100

OC Pesticides in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB223477.002		Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	88
		Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	83
		Delta BHC	mg/kg	0.1	0.2	0.2	60 - 140	81
		Dieldrin	mg/kg	0.2	<0.2	0.2	60 - 140	81
		Endrin	mg/kg	0.2	<0.2	0.2	60 - 140	88
		p,p'-DDT	mg/kg	0.1	0.1	0.2	60 - 140	63
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.14	0.15	40 - 130	95
LB223478.002		Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	100
		Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	100
		Delta BHC	mg/kg	0.1	0.2	0.2	60 - 140	102
		Dieldrin	mg/kg	0.2	0.2	0.2	60 - 140	100
		Endrin	mg/kg	0.2	0.2	0.2	60 - 140	111
		p,p'-DDT	mg/kg	0.1	0.2	0.2	60 - 140	103
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.15	0.15	40 - 130	99

OP Pesticides in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB223477.002		Dichlorvos	mg/kg	0.5	1.6	2	60 - 140	80
		Diazinon (Dimpylate)	mg/kg	0.5	2.4	2	60 - 140	121
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	2.0	2	60 - 140	99
		Ethion	mg/kg	0.2	1.8	2	60 - 140	88
	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	104
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	102
LB223478.002		Dichlorvos	mg/kg	0.5	2.2	2	60 - 140	108
		Diazinon (Dimpylate)	mg/kg	0.5	2.4	2	60 - 140	122
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	2.6	2	60 - 140	131
		Ethion	mg/kg	0.2	2.0	2	60 - 140	99
	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	96
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	99

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB223477.002		Naphthalene	mg/kg	0.1	4.5	4	60 - 140	111
		Acenaphthylene	mg/kg	0.1	4.8	4	60 - 140	120
		Acenaphthene	mg/kg	0.1	4.8	4	60 - 140	121
		Phenanthrene	mg/kg	0.1	4.6	4	60 - 140	115
		Anthracene	mg/kg	0.1	4.3	4	60 - 140	108
		Fluoranthene	mg/kg	0.1	4.3	4	60 - 140	107
		Pyrene	mg/kg	0.1	4.6	4	60 - 140	115
		Benzo(a)pyrene	mg/kg	0.1	4.7	4	60 - 140	117
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	106
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	104
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	102
LB223478.002		Naphthalene	mg/kg	0.1	4.5	4	60 - 140	112
		Acenaphthylene	mg/kg	0.1	4.0	4	60 - 140	101
		Acenaphthene	mg/kg	0.1	4.7	4	60 - 140	117
		Phenanthrene	mg/kg	0.1	4.7	4	60 - 140	117
		Anthracene	mg/kg	0.1	4.7	4	60 - 140	118
		Fluoranthene	mg/kg	0.1	4.4	4	60 - 140	110
		Pyrene	mg/kg	0.1	4.9	4	60 - 140	124
		Benzo(a)pyrene	mg/kg	0.1	4.1	4	60 - 140	102
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	104
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	96
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	99

PCBs in Soil

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

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.

PCBs in Soil (continued)

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB223477.002	Arochlor 1260	mg/kg	0.2	0.4	0.4	60 - 140	100
LB223478.002	Arochlor 1260	mg/kg	0.2	0.5	0.4	60 - 140	118

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 %
LB223701.002	Arsenic, As	mg/kg	1	350	318.22	80 - 120	109
	Cadmium, Cd	mg/kg	0.3	4.3	4.81	70 - 130	90
	Chromium, Cr	mg/kg	0.5	41	38.31	80 - 120	107
	Copper, Cu	mg/kg	0.5	300	290	80 - 120	105
	Nickel, Ni	mg/kg	0.5	190	187	80 - 120	101
	Lead, Pb	mg/kg	1	92	89.9	80 - 120	102
	Zinc, Zn	mg/kg	2	280	273	80 - 120	103
LB223704.002	Arsenic, As	mg/kg	1	350	318.22	80 - 120	111
	Cadmium, Cd	mg/kg	0.3	4.3	4.81	70 - 130	90
	Chromium, Cr	mg/kg	0.5	42	38.31	80 - 120	110
	Copper, Cu	mg/kg	0.5	310	290	80 - 120	109
	Nickel, Ni	mg/kg	0.5	200	187	80 - 120	105
	Lead, Pb	mg/kg	1	94	89.9	80 - 120	105
	Zinc, Zn	mg/kg	2	290	273	80 - 120	104

TRH (Total Recoverable Hydrocarbons) in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB223477.002		TRH C10-C14	mg/kg	20	42	40	60 - 140	105
		TRH C15-C28	mg/kg	45	<45	40	60 - 140	110
		TRH C29-C36	mg/kg	45	<45	40	60 - 140	90
	TRH F Bands	TRH >C10-C16	mg/kg	25	40	40	60 - 140	100
		TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	115
		TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	80
LB223478.002		TRH C10-C14	mg/kg	20	44	40	60 - 140	110
		TRH C15-C28	mg/kg	45	<45	40	60 - 140	103
		TRH C29-C36	mg/kg	45	<45	40	60 - 140	93
	TRH F Bands	TRH >C10-C16	mg/kg	25	42	40	60 - 140	105
		TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	103
		TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	85

VOC's in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB223479.002	Monocyclic Aromatic	Benzene	mg/kg	0.1	3.4	5	60 - 140	69
		Toluene	mg/kg	0.1	3.6	5	60 - 140	73
		Ethylbenzene	mg/kg	0.1	3.6	5	60 - 140	71
		m/p-xylene	mg/kg	0.2	7.1	10	60 - 140	71
		o-xylene	mg/kg	0.1	3.7	5	60 - 140	74
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.3	10	70 - 130	83
		d8-toluene (Surrogate)	mg/kg	-	8.2	10	70 - 130	82
		Bromofluorobenzene (Surrogate)	mg/kg	-	8.9	10	70 - 130	89
LB223484.002	Monocyclic Aromatic	Benzene	mg/kg	0.1	4.6	5	60 - 140	92
		Toluene	mg/kg	0.1	4.8	5	60 - 140	95
		Ethylbenzene	mg/kg	0.1	6.6	5	60 - 140	132
		m/p-xylene	mg/kg	0.2	13	10	60 - 140	132
		o-xylene	mg/kg	0.1	6.7	5	60 - 140	133
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	12.6	10	70 - 130	126
		d8-toluene (Surrogate)	mg/kg	-	10.8	10	70 - 130	108
		Bromofluorobenzene (Surrogate)	mg/kg	-	8.4	10	70 - 130	84

Volatile Petroleum Hydrocarbons in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB223479.002		TRH C6-C10	mg/kg	25	72	92.5	60 - 140	78
		TRH C6-C9	mg/kg	20	59	80	60 - 140	74
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.3	10	70 - 130	83
		Bromofluorobenzene (Surrogate)	mg/kg	-	8.9	10	70 - 130	89
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	51	62.5	60 - 140	81
LB223484.002		TRH C6-C10	mg/kg	25	80	92.5	60 - 140	86

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

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

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB223484.002		TRH C6-C9	mg/kg	20	53	80	60 - 140	66
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	12.6	10	70 - 130	126
		Bromofluorobenzene (Surrogate)	mg/kg	-	8.4	10	70 - 130	84
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	44	62.5	60 - 140	70

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 in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE218853A.009	LB223705.004	Mercury	mg/kg	0.05	0.25	<0.05	0.2	101
SE218963.001	LB223706.004	Mercury	mg/kg	0.05	0.26	0.12	0.2	74

OC Pesticides in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE219002.001	LB223477.004		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha BHC	mg/kg	0.1	<0.1	<0.1	-	-
			Lindane	mg/kg	0.1	<0.1	<0.1	-	-
			Heptachlor	mg/kg	0.1	0.2	<0.1	0.2	95
			Aldrin	mg/kg	0.1	0.2	<0.1	0.2	89
			Beta BHC	mg/kg	0.1	<0.1	<0.1	-	-
			Delta BHC	mg/kg	0.1	0.2	<0.1	0.2	88
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	-	-
			o,p'-DDE	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
			trans-Nonachlor	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	85
			Endrin	mg/kg	0.2	<0.2	<0.2	0.2	92
			o,p'-DDD	mg/kg	0.1	<0.1	<0.1	-	-
			o,p'-DDT	mg/kg	0.1	<0.1	<0.1	-	-
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	-	-
			p,p'-DDT	mg/kg	0.1	0.1	<0.1	0.2	72
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	-	-
			Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	-	-
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	-	-
			Endrin Ketone	mg/kg	0.1	<0.1	<0.1	-	-
			Isodrin	mg/kg	0.1	<0.1	<0.1	-	-
			Mirex	mg/kg	0.1	<0.1	<0.1	-	-
			Total CLP OC Pesticides	mg/kg	1	1	<1	-	-
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.15	0.16	-	98

OP Pesticides in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE219002.001	LB223477.004		Dichlorvos	mg/kg	0.5	1.6	<0.5	2	79
			Dimethoate	mg/kg	0.5	<0.5	<0.5	-	-
			Diazinon (Dimpylate)	mg/kg	0.5	2.6	<0.5	2	129
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	-	-
			Malathion	mg/kg	0.2	<0.2	<0.2	-	-
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	2.3	<0.2	2	113
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	-	-
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	-	-
			Methidathion	mg/kg	0.5	<0.5	<0.5	-	-
			Ethion	mg/kg	0.2	2.2	<0.2	2	110
			Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	-	-
			Total OP Pesticides*	mg/kg	1.7	8.6	<1.7	-	-
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	100
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	102

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE218963.010	LB223478.004	Naphthalene	mg/kg	0.1	4.5	<0.1	4	112
		2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
		1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
		Acenaphthylene	mg/kg	0.1	4.1	<0.1	4	102
		Acenaphthene	mg/kg	0.1	4.9	<0.1	4	122
		Fluorene	mg/kg	0.1	<0.1	<0.1	-	-
		Phenanthrene	mg/kg	0.1	4.3	<0.1	4	105

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%
SE218963.010	LB223478.004		Anthracene	mg/kg	0.1	4.3	<0.1	4	107
			Fluoranthene	mg/kg	0.1	4.4	0.3	4	104
			Pyrene	mg/kg	0.1	4.7	0.4	4	107
			Benzo(a)anthracene	mg/kg	0.1	0.2	0.2	-	-
			Chrysene	mg/kg	0.1	0.2	0.2	-	-
			Benzo(b&j)fluoranthene	mg/kg	0.1	0.3	0.3	-	-
			Benzo(k)fluoranthene	mg/kg	0.1	0.1	0.1	-	-
			Benzo(a)pyrene	mg/kg	0.1	4.3	0.2	4	103
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.2	0.2	-	-
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(ghi)perylene	mg/kg	0.1	0.2	0.2	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	4.4	0.3	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	4.5	0.4	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	4.5	0.3	-	-
			Total PAH (18)	mg/kg	0.8	37	2.0	-	-
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	-	91
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	91
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	-	85
SE219002.001	LB223477.004		Naphthalene	mg/kg	0.1	5.0	<0.1	4	124
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
			Acenaphthylene	mg/kg	0.1	4.2	<0.1	4	105
			Acenaphthene	mg/kg	0.1	4.4	<0.1	4	110
			Fluorene	mg/kg	0.1	<0.1	<0.1	-	-
			Phenanthrene	mg/kg	0.1	5.1	<0.1	4	125
			Anthracene	mg/kg	0.1	4.9	<0.1	4	122
			Fluoranthene	mg/kg	0.1	4.1	0.2	4	97
			Pyrene	mg/kg	0.1	4.7	0.3	4	110
			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	0.2	0.2	-	-
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	0.2	-	-
			Benzo(a)pyrene	mg/kg	0.1	5.2	0.1	4	126
			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	5.2	<0.2	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	5.3	<0.3	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	5.2	<0.2	-	-
			Total PAH (18)	mg/kg	0.8	38	1.0	-	-
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	-	106
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	100
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	102

PCBs in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE219002.001	LB223477.004		Arochlor 1016	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1221	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1232	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1242	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1248	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1254	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1260	mg/kg	0.2	0.4	<0.2	0.4	104
			Arochlor 1262	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1268	mg/kg	0.2	<0.2	<0.2	-	-
			Total PCBs (Arochlors)	mg/kg	1	<1	<1	-	-
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0	0	-	98

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

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

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.

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

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE218853A.009	LB223704.004	Arsenic, As	mg/kg	1	45	8	50	75
		Cadmium, Cd	mg/kg	0.3	38	<0.3	50	75
		Chromium, Cr	mg/kg	0.5	54	23	50	63 ④
		Copper, Cu	mg/kg	0.5	47	5.6	50	83
		Nickel, Ni	mg/kg	0.5	46	7.5	50	76
		Lead, Pb	mg/kg	1	55	24	50	63 ④
		Zinc, Zn	mg/kg	2	59	22	50	75

TRH (Total Recoverable Hydrocarbons) in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE218963.010	LB223478.004		TRH C10-C14	mg/kg	20	41	<20	40	103
			TRH C15-C28	mg/kg	45	<45	<45	40	103
			TRH C29-C36	mg/kg	45	<45	<45	40	88
			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	39	<25	40	98
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	34	<25	-	-
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	40	108
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	-	-
SE219002.001	LB223477.004		TRH C10-C14	mg/kg	20	41	<20	40	103
			TRH C15-C28	mg/kg	45	51	<45	40	100
			TRH C29-C36	mg/kg	45	<45	<45	40	108
			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	39	<25	40	98
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	39	<25	-	-
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	40	100
			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%
SE218963.010	LB223479.004	Monocyclic Aromatic	Benzene	mg/kg	0.1	3.2	<0.1	5	65
			Toluene	mg/kg	0.1	3.5	<0.1	5	70
			Ethylbenzene	mg/kg	0.1	3.5	<0.1	5	70
			m/p-xylene	mg/kg	0.2	7.0	<0.2	10	70
			o-xylene	mg/kg	0.1	3.6	<0.1	5	72
		Polycyclic	Naphthalene	mg/kg	0.1	<0.1	<0.1	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.2	11.5	10	82
			d8-toluene (Surrogate)	mg/kg	-	8.1	11.1	10	81
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.8	10.9	10	88
		Totals	Total Xylenes	mg/kg	0.3	11	<0.3	-	-
			Total BTEX	mg/kg	0.6	21	<0.6	-	-
SE219002.001	LB223484.004	Monocyclic Aromatic	Benzene	mg/kg	0.1	3.8	<0.1	5	76
			Toluene	mg/kg	0.1	4.2	<0.1	5	84
			Ethylbenzene	mg/kg	0.1	6.0	<0.1	5	120
			m/p-xylene	mg/kg	0.2	12	<0.2	10	120
			o-xylene	mg/kg	0.1	6.2	<0.1	5	123
		Polycyclic	Naphthalene	mg/kg	0.1	<0.1	<0.1	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	11.4	10.7	10	114
			d8-toluene (Surrogate)	mg/kg	-	9.9	8.5	10	99
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.2	7.3	10	72
		Totals	Total Xylenes	mg/kg	0.3	18	<0.3	-	-
			Total BTEX	mg/kg	0.6	32	<0.6	-	-

Volatile Petroleum Hydrocarbons in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE218963.010	LB223479.004		TRH C6-C10	mg/kg	25	68	<25	92.5	73
			TRH C6-C9	mg/kg	20	55	<20	80	69
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.2	11.5	10	82
			d8-toluene (Surrogate)	mg/kg	-	8.1	11.1	10	81

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.

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE218963.010	LB223479.004	Surrogates	Bromofluorobenzene (Surrogate)	mg/kg	-	8.8	10.9	-	88
		VPH F	Benzene (F0)	mg/kg	0.1	3.2	<0.1	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	47	<25	62.5	75
SE219002.001	LB223484.004		TRH C6-C10	mg/kg	25	72	<25	92.5	78
			TRH C6-C9	mg/kg	20	52	<20	80	65
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	11.4	10.7	10	114
			d8-toluene (Surrogate)	mg/kg	-	9.9	8.5	10	99
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.2	7.3	-	72
		VPH F	Benzene (F0)	mg/kg	0.1	3.8	<0.1	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	40	<25	62.5	64

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

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.

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Andrew Ibrahim
Client	EI AUSTRALIA
Address	SUITE 6.01 55 MILLER STREET PYRMONT NSW 2009
Telephone	61 2 95160722
Facsimile	(Not specified)
Email	andrew.ibrahim@eiaustralia.com.au
Project	**E25077 Hughes,Waratah,Wharf Melrose Pk**
Order Number	**E25077**
Samples	28

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	**SE218963 R0**
Date Received	23 Apr 2021
Date Reported	04 May 2021

COMMENTS

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

PFAS subcontracted to SGS Melbourne, Unit 10/585 Blackburn Road Notting Hill VIC 3168, NATA Accreditation Number 2562, Site number 14420. Final report No: ME320181

No respirable fibres detected in all soil samples using trace analysis technique.

Asbestos analysed by Approved Identifier Ravee Sivasubramaniam .

SIGNATORIES

Akheeqar BENIAMEEN
Chemist

Bennet LO
Senior Organic Chemist/Metals Chemis

Huong CRAWFORD
Production Manager

Ly Kim HA
Organic Section Head

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*
SE218963.002	30-BH101_0.2-0.3	Soil	173g Clay, Sand, Rocks	20 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE218963.003	30-BH101_0.5-0.6	Soil	126g Clay, Sand, Rocks	20 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE218963.004	30-BH101_0.9-1.0	Soil	189g Sand, Rocks	20 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE218963.005	30-BH101_4.4-4.5	Soil	169g Clay, Sand, Soil, Rocks, Plaster	20 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg Organic Fibres Detected	<0.01
SE218963.006	30-BH102M_0.2-0.3	Soil	227g Sand, Shells	20 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE218963.007	30-BH102M_0.5-0.6	Soil	235g Clay	20 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE218963.008	30-BH102M_2.0-2.1	Soil	147g Clay, Sand, Soil, Rocks	20 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg Synthetic Mineral Fibres Detected	<0.01
SE218963.009	30-BH102M_4.0-4.1	Soil	194g Clay, Sand, Rocks	20 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE218963.010	30-BH103_0.3-0.4	Soil	217g Sand, Rocks	20 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE218963.011	30-BH103_0.9-1.0	Soil	237g Clay, Sand, Rocks	20 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE218963.012	30-BH104_0.4-0.5	Soil	144g Sand, Rocks, Cement mixture	20 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE218963.013	30-BH104_2.0-2.1	Soil	252g Clay, Sand, Rocks	20 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE218963.014	30-BH104_2.7-2.5	Soil	184g Clay, Sand, Rocks	20 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE218963.015	30-BH105_0.4-0.5	Soil	163g Clay, Sand, Rocks	20 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE218963.016	30-BH106M_0.3-0.4	Soil	188g Clay, Sand, Rocks	21 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE218963.017	30-BH106M_1.1-1.2	Soil	211g Clay, Sand, Rocks	21 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE218963.018	30-BH106M_1.9-2.0	Soil	180g Clay, Sand, Rocks	21 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE218963.019	30-BH106M_3.4-3.5	Soil	157g Clay, Sand, Rocks	21 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE218963.020	30-BH107_0.3-0.4	Soil	198g Clay, Sand, Rocks	21 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE218963.021	30-BH107_0.9-1.0	Soil	234g Clay, Sand, Rocks	21 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE218963.022	30-BH107_2.3-2.4	Soil	204g Clay, Sand, Rocks	21 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE218963.023	30-BH108_0.2-0.3	Soil	161g Clay	21 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE218963.024	30-BH108_0.4-0.5	Soil	208g Clay, Sand, Rocks	21 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE218963.025	30-BH108_1.2-1.3	Soil	208g Clay	21 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE218963.026	30-BH108_2.7-2.8	Soil	240g Clay, Sand, Rocks	21 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01

RESULTS

Fibre Identification in soil — Method AN602

Laboratory Reference	Client Reference	Matrix	Sample Description	Date Sampled	Fibre Identification	Est.%w/w*
SE218963.027	30-BH109_0.3-0.4	Soil	148g Clay, Sand, Soil, Rocks	21 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg Organic Fibres Detected	<0.01
SE218963.028	30-BH110M_0.2-0.3	Soil	188g Clay, Sand, Rocks	21 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE218963.029	30-BH110M_1.4-1.5	Soil	216g Clay	21 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01

METHOD SUMMARY

METHOD	METHODOLOGY SUMMARY
AN602	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	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	AS4964.2004 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 limit 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	The sample can be reported “no asbestos found at the reporting limit 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	**E25077 82 Hughes Ave, Ermington, 30-32 W**	SGS Reference	**ME320181 R0**
Order Number	**SE218963**	Date Received	28 Apr 2021
Samples	29	Date Reported	03 May 2021

COMMENTS

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

PFAS samples was analysed from GLASS jar instead of plastic. Also, ME320181.012 was broken upon arrival. Contents were trasnferred to a plastic jar.
MA1523 : Some surrogate recovery out of range due to the sample matrix.

SIGNATORIES

Adam ATKINSON
Australian Chemistry Manager

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	ME320181.001 Soil 20 Apr 2021 SE218963.001	ME320181.002 Soil 20 Apr 2021 SE218963.002	ME320181.003 Soil 20 Apr 2021 SE218963.003	ME320181.004 Soil 20 Apr 2021 SE218963.004
Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples	**Method: MA-1523**	**Tested: 30/4/2021**					
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		-	<0.0016	-	-
Sum PFOS and PFHXS	mg/kg	0.0016		-	<0.0016	-	-
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	-	-
Perfluorooctane sulfonamide (PFOSA)	mg/kg	0.0016		-	<0.0016	-	-
N-Methylperfluorooctane sulfonamide (N-MeFOSA)	mg/kg	0.008		-	<0.008	-	-
N-Ethylperfluorooctane 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	-	-
(13C4-PFBA) Isotopically Labelled Internal Recovery	%	-		-	**101**	-	-
(13C5-PFPeA) Isotopically Labelled Internal Recovery	%	-		-	**93**	-	-
(13C5-PFHxA) Isotopically Labelled Internal Recovery	%	-		-	**140**	-	-
(13C4-PFHpA) Isotopically Labelled Internal Recovery	%	-		-	**110**	-	-
(13C4_PFOA) Isotopically Labelled Internal Recovery	%	-		-	**111**	-	-
(13C9-PFNA) Isotopically Labelled Internal Recovery	%	-		-	**105**	-	-
(13C6-PFDA) Isotopically Labelled Internal Recovery	%	-		-	**111**	-	-
(13C7-PFUdA) Isotopically Labelled Internal Recovery	%	-		-	**103**	-	-
(13C2-PFDoA) Isotopically Labelled Internal Recovery	%	-		-	**95**	-	-
(13C2_PFTeDA) Isotopically Labelled Internal Recovery	%	-		-	**45**	-	-
(13C2-PFHxDA) Isotopically Labelled Internal Recovery	%	-		-	**22**	-	-
(13C3-PFBS) Isotopically Labelled Internal Recovery	%	-		-	**107**	-	-
(13C3-PFHxS) Isotopically Labelled Internal Recovery	%	-		-	**97**	-	-
(13C8-PFOS) Isotopically Labelled Internal Recovery	%	-		-	**101**	-	-
(13C2-4:2 FTS) Isotopically Labelled Internal Recovery	%	-		-	**77**	-	-
(13C2-6:2 FTS) Isotopically Labelled Internal Recovery	%	-		-	**38**	-	-
(13C2-8:2 FTS) Isotopically Labelled Internal Recovery	%	-		-	**41**	-	-
(13C8-PFOSA) Isotopically Labelled Internal Recovery	%	-		-	**80**	-	-
(D3-N-MeFOSA) Isotopically Labelled Internal Recovery	%	-		-	**49**	-	-
(D5-N-EtFOSA) Isotopically Labelled Internal Recovery	%	-		-	**31**	-	-
(D7-N-MeFOSE) Isotopically Labelled Internal Recovery	%	-		-	**78**	-	-
(D9-N-EtFOSE) Isotopically Labelled Internal Recovery	%	-		-	**56**	-	-
(D3-N-MeFOSAA) Isotopically Labelled Internal Recovery	%	-		-	**59**	-	-
(D5-N-EtFOSAA) Isotopically Labelled Internal Recovery	%	-		-	**49**	-	-
Moisture Content	**Method: AN002**	**Tested: 30/4/2021**					

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name ME320181.001 Soil 20 Apr 2021 SE218963.001	ME320181.002 Soil 20 Apr 2021 SE218963.002	ME320181.003 Soil 20 Apr 2021 SE218963.003	ME320181.004 Soil 20 Apr 2021 SE218963.004
Moisture Content Method: AN002 Tested: 30/4/2021 (continued)						
% Moisture*	%w/w	1	-	**9.8**	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	ME320181.005 Soil 20 Apr 2021 SE218963.005	ME320181.006 Soil 20 Apr 2021 SE218963.006	ME320181.007 Soil 20 Apr 2021 SE218963.007	ME320181.008 Soil 20 Apr 2021 SE218963.008
Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples	**Method: MA-1523**	**Tested: 30/4/2021**					
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		-	<0.0016	-	-
Sum PFOS and PFHXS	mg/kg	0.0016		-	<0.0016	-	-
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	-	-
Perfluorooctane sulfonamide (PFOSA)	mg/kg	0.0016		-	<0.0016	-	-
N-Methylperfluorooctane sulfonamide (N-MeFOSA)	mg/kg	0.008		-	<0.008	-	-
N-Ethylperfluorooctane 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	-	-
(13C4-PFBA) Isotopically Labelled Internal Recovery	%	-		-	**100**	-	-
(13C5-PFPeA) Isotopically Labelled Internal Recovery	%	-		-	**92**	-	-
(13C5-PFHxA) Isotopically Labelled Internal Recovery	%	-		-	**138**	-	-
(13C4-PFHpA) Isotopically Labelled Internal Recovery	%	-		-	**112**	-	-
(13C4_PFOA) Isotopically Labelled Internal Recovery	%	-		-	**114**	-	-
(13C9-PFNA) Isotopically Labelled Internal Recovery	%	-		-	**112**	-	-
(13C6-PFDA) Isotopically Labelled Internal Recovery	%	-		-	**110**	-	-
(13C7-PFUdA) Isotopically Labelled Internal Recovery	%	-		-	**92**	-	-
(13C2-PFDoA) Isotopically Labelled Internal Recovery	%	-		-	**86**	-	-
(13C2_PFTeDA) Isotopically Labelled Internal Recovery	%	-		-	**45**	-	-
(13C2-PFHxDA) Isotopically Labelled Internal Recovery	%	-		-	**12**	-	-
(13C3-PFBS) Isotopically Labelled Internal Recovery	%	-		-	**115**	-	-
(13C3-PFHxS) Isotopically Labelled Internal Recovery	%	-		-	**105**	-	-
(13C8-PFOS) Isotopically Labelled Internal Recovery	%	-		-	**109**	-	-
(13C2-4:2 FTS) Isotopically Labelled Internal Recovery	%	-		-	**81**	-	-
(13C2-6:2 FTS) Isotopically Labelled Internal Recovery	%	-		-	**40**	-	-
(13C2-8:2 FTS) Isotopically Labelled Internal Recovery	%	-		-	**47**	-	-
(13C8-PFOSA) Isotopically Labelled Internal Recovery	%	-		-	**74**	-	-
(D3-N-MeFOSA) Isotopically Labelled Internal Recovery	%	-		-	**37**	-	-
(D5-N-EtFOSA) Isotopically Labelled Internal Recovery	%	-		-	**26**	-	-
(D7-N-MeFOSE) Isotopically Labelled Internal Recovery	%	-		-	**74**	-	-
(D9-N-EtFOSE) Isotopically Labelled Internal Recovery	%	-		-	**51**	-	-
(D3-N-MeFOSAA) Isotopically Labelled Internal Recovery	%	-		-	**60**	-	-
(D5-N-EtFOSAA) Isotopically Labelled Internal Recovery	%	-		-	**53**	-	-
Moisture Content	**Method: AN002**	**Tested: 30/4/2021**					

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name ME320181.005 Soil 20 Apr 2021 SE218963.005	ME320181.006 Soil 20 Apr 2021 SE218963.006	ME320181.007 Soil 20 Apr 2021 SE218963.007	ME320181.008 Soil 20 Apr 2021 SE218963.008
Moisture Content Method: AN002 Tested: 30/4/2021 (continued)						
% Moisture*	%w/w	1	-	**13.0**	-	-

Parameter	Units	LOR	Sample Number ME320181.009 Sample Matrix Soil Sample Date 20 Apr 2021 Sample Name SE218963.009	ME320181.010 Soil 20 Apr 2021 SE218963.010	ME320181.011 Soil 20 Apr 2021 SE218963.011	ME320181.012 Soil 20 Apr 2021 SE218963.012
Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples	**Method: MA-1523**	**Tested: 30/4/2021**				
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	-	-	-	<0.0016
Sum PFOS and PFHXS	mg/kg	0.0016	-	-	-	<0.0016
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
Perfluorooctane sulfonamide (PFOSA)	mg/kg	0.0016	-	-	-	<0.0016
N-Methylperfluorooctane sulfonamide (N-MeFOSA)	mg/kg	0.008	-	-	-	<0.008
N-Ethylperfluorooctane 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
(13C4-PFBA) Isotopically Labelled Internal Recovery	%	-	-	-	-	**106**
(13C5-PFPeA) Isotopically Labelled Internal Recovery	%	-	-	-	-	**99**
(13C5-PFHxA) Isotopically Labelled Internal Recovery	%	-	-	-	-	**135**
(13C4-PFHpA) Isotopically Labelled Internal Recovery	%	-	-	-	-	**107**
(13C4_PFOA) Isotopically Labelled Internal Recovery	%	-	-	-	-	**111**
(13C9-PFNA) Isotopically Labelled Internal Recovery	%	-	-	-	-	**115**
(13C6-PFDA) Isotopically Labelled Internal Recovery	%	-	-	-	-	**100**
(13C7-PFUdA) Isotopically Labelled Internal Recovery	%	-	-	-	-	**89**
(13C2-PFDoA) Isotopically Labelled Internal Recovery	%	-	-	-	-	**86**
(13C2_PFTeDA) Isotopically Labelled Internal Recovery	%	-	-	-	-	**49**
(13C2-PFHxDA) Isotopically Labelled Internal Recovery	%	-	-	-	-	**18**
(13C3-PFBS) Isotopically Labelled Internal Recovery	%	-	-	-	-	**112**
(13C3-PFHxS) Isotopically Labelled Internal Recovery	%	-	-	-	-	**98**
(13C8-PFOS) Isotopically Labelled Internal Recovery	%	-	-	-	-	**109**
(13C2-4:2 FTS) Isotopically Labelled Internal Recovery	%	-	-	-	-	**76**
(13C2-6:2 FTS) Isotopically Labelled Internal Recovery	%	-	-	-	-	**39**
(13C2-8:2 FTS) Isotopically Labelled Internal Recovery	%	-	-	-	-	**48**
(13C8-PFOSA) Isotopically Labelled Internal Recovery	%	-	-	-	-	**86**
(D3-N-MeFOSA) Isotopically Labelled Internal Recovery	%	-	-	-	-	**61**
(D5-N-EtFOSA) Isotopically Labelled Internal Recovery	%	-	-	-	-	**37**
(D7-N-MeFOSE) Isotopically Labelled Internal Recovery	%	-	-	-	-	**79**
(D9-N-EtFOSE) Isotopically Labelled Internal Recovery	%	-	-	-	-	**54**
(D3-N-MeFOSAA) Isotopically Labelled Internal Recovery	%	-	-	-	-	**59**
(D5-N-EtFOSAA) Isotopically Labelled Internal Recovery	%	-	-	-	-	**65**
Moisture Content	**Method: AN002**	**Tested: 30/4/2021**				

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	ME320181.009 Soil 20 Apr 2021 SE218963.009	ME320181.010 Soil 20 Apr 2021 SE218963.010	ME320181.011 Soil 20 Apr 2021 SE218963.011	ME320181.012 Soil 20 Apr 2021 SE218963.012
Moisture Content Method: AN002 Tested: 28/4/2021 (continued)							
% Moisture*	%w/w	1		-	-	-	**11.8**

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	ME320181.013 Soil 20 Apr 2021 SE218963.013	ME320181.014 Soil 20 Apr 2021 SE218963.014	ME320181.015 Soil 20 Apr 2021 SE218963.015	ME320181.016 Soil 21 Apr 2021 SE218963.016
Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples	**Method: MA-1523**	**Tested: 30/4/2021**					
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		-	-	-	**0.0019**
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		-	-	-	<0.0016
Sum PFOS and PFHXS	mg/kg	0.0016		-	-	-	<0.0016
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
Perfluorooctane sulfonamide (PFOSA)	mg/kg	0.0016		-	-	-	<0.0016
N-Methylperfluorooctane sulfonamide (N-MeFOSA)	mg/kg	0.008		-	-	-	<0.008
N-Ethylperfluorooctane 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
(13C4-PFBA) Isotopically Labelled Internal Recovery	%	-		-	-	-	**102**
(13C5-PFPeA) Isotopically Labelled Internal Recovery	%	-		-	-	-	**94**
(13C5-PFHxA) Isotopically Labelled Internal Recovery	%	-		-	-	-	**163**
(13C4-PFHpA) Isotopically Labelled Internal Recovery	%	-		-	-	-	**120**
(13C4_PFOA) Isotopically Labelled Internal Recovery	%	-		-	-	-	**118**
(13C9-PFNA) Isotopically Labelled Internal Recovery	%	-		-	-	-	**90**
(13C6-PFDA) Isotopically Labelled Internal Recovery	%	-		-	-	-	**106**
(13C7-PFUdA) Isotopically Labelled Internal Recovery	%	-		-	-	-	**84**
(13C2-PFDoA) Isotopically Labelled Internal Recovery	%	-		-	-	-	**88**
(13C2_PFTeDA) Isotopically Labelled Internal Recovery	%	-		-	-	-	**41**
(13C2-PFHxDA) Isotopically Labelled Internal Recovery	%	-		-	-	-	**14**
(13C3-PFBS) Isotopically Labelled Internal Recovery	%	-		-	-	-	**122**
(13C3-PFHxS) Isotopically Labelled Internal Recovery	%	-		-	-	-	**107**
(13C8-PFOS) Isotopically Labelled Internal Recovery	%	-		-	-	-	**106**
(13C2-4:2 FTS) Isotopically Labelled Internal Recovery	%	-		-	-	-	**86**
(13C2-6:2 FTS) Isotopically Labelled Internal Recovery	%	-		-	-	-	**41**
(13C2-8:2 FTS) Isotopically Labelled Internal Recovery	%	-		-	-	-	**46**
(13C8-PFOSA) Isotopically Labelled Internal Recovery	%	-		-	-	-	**87**
(D3-N-MeFOSA) Isotopically Labelled Internal Recovery	%	-		-	-	-	**55**
(D5-N-EtFOSA) Isotopically Labelled Internal Recovery	%	-		-	-	-	**48**
(D7-N-MeFOSE) Isotopically Labelled Internal Recovery	%	-		-	-	-	**88**
(D9-N-EtFOSE) Isotopically Labelled Internal Recovery	%	-		-	-	-	**67**
(D3-N-MeFOSAA) Isotopically Labelled Internal Recovery	%	-		-	-	-	**48**
(D5-N-EtFOSAA) Isotopically Labelled Internal Recovery	%	-		-	-	-	**42**
Moisture Content	**Method: AN002**	**Tested: 30/4/2021**					

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name ME320181.013 Soil 20 Apr 2021 SE218963.013	ME320181.014 Soil 20 Apr 2021 SE218963.014	ME320181.015 Soil 20 Apr 2021 SE218963.015	ME320181.016 Soil 21 Apr 2021 SE218963.016
Moisture Content Method: AN002 Tested: 28/4/2021 (continued)						
% Moisture*	%w/w	1	-	-	-	**9.2**

Parameter	Units	LOR	Sample Number ME320181.017 Sample Matrix Soil Sample Date 21 Apr 2021 Sample Name SE218963.017	ME320181.018 Soil 21 Apr 2021 SE218963.018	ME320181.019 Soil 21 Apr 2021 SE218963.019	ME320181.020 Soil 21 Apr 2021 SE218963.020
Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples Method: MA-1523 Tested: 30/4/2021						
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	-	-	-	-
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	-	-	-	-
Perfluorooctane sulfonamide (PFOSA)	mg/kg	0.0016	-	-	-	-
N-Methylperfluorooctane sulfonamide (N-MeFOSA)	mg/kg	0.008	-	-	-	-
N-Ethylperfluorooctane 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	-	-	-	-
(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	%	-	-	-	-	-

Moisture Content Method: AN002 Tested: 30/4/2021

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name ME320181.017 Soil 21 Apr 2021 SE218963.017	ME320181.018 Soil 21 Apr 2021 SE218963.018	ME320181.019 Soil 21 Apr 2021 SE218963.019	ME320181.020 Soil 21 Apr 2021 SE218963.020
Moisture Content Method: AN002 Tested: 30/4/2021 (continued)						
% Moisture*	%w/w	1	-	-	-	-

Parameter	Units	LOR	Sample Number ME320181.021 Sample Matrix Soil Sample Date 21 Apr 2021 Sample Name SE218963.021	ME320181.022 Soil 21 Apr 2021 SE218963.022	ME320181.023 Soil 21 Apr 2021 SE218963.023	ME320181.024 Soil 21 Apr 2021 SE218963.024
Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples Method: MA-1523 Tested: 30/4/2021						
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	-	-	-	-
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	-	-	-	-
Perfluorooctane sulfonamide (PFOSA)	mg/kg	0.0016	-	-	-	-
N-Methylperfluorooctane sulfonamide (N-MeFOSA)	mg/kg	0.008	-	-	-	-
N-Ethylperfluorooctane 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	-	-	-	-
(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	%	-	-	-	-	-
Moisture Content Method: AN002 Tested: 30/4/2021						

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name ME320181.021 Soil 21 Apr 2021 SE218963.021	ME320181.022 Soil 21 Apr 2021 SE218963.022	ME320181.023 Soil 21 Apr 2021 SE218963.023	ME320181.024 Soil 21 Apr 2021 SE218963.024
Moisture Content Method: AN002 Tested: 30/4/2021 (continued)						
% Moisture*	%w/w	1	-	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	ME320181.025 Soil 21 Apr 2021 SE218963.025	ME320181.026 Soil 21 Apr 2021 SE218963.026	ME320181.027 Soil 21 Apr 2021 SE218963.027	ME320181.028 Soil 21 Apr 2021 SE218963.028
Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples	**Method: MA-1523**	**Tested: 30/4/2021**					
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		-	-	-	-
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		-	-	-	-
Perfluorooctane sulfonamide (PFOSA)	mg/kg	0.0016		-	-	-	-
N-Methylperfluorooctane sulfonamide (N-MeFOSA)	mg/kg	0.008		-	-	-	-
N-Ethylperfluorooctane 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		-	-	-	-
(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	%	-		-	-	-	-
Moisture Content	**Method: AN002**	**Tested: 30/4/2021**					

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	ME320181.025 Soil 21 Apr 2021 SE218963.025	ME320181.026 Soil 21 Apr 2021 SE218963.026	ME320181.027 Soil 21 Apr 2021 SE218963.027	ME320181.028 Soil 21 Apr 2021 SE218963.028
Moisture Content Method: AN002 Tested: 30/4/2021 (continued)							
% Moisture*	%w/w	1		-	-	-	-

Parameter	Units	LOR	Sample Number ME320181.029 Sample Matrix Soil Sample Date 21 Apr 2021 Sample Name SE218963.029
Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples	**Method: MA-1523**	**Tested: 30/4/2021**	
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	-
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	-
Perfluorooctane sulfonamide (PFOSA)	mg/kg	0.0016	-
N-Methylperfluorooctane sulfonamide (N-MeFOSA)	mg/kg	0.008	-
N-Ethylperfluorooctane 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	-
(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	Sample Number ME320181.029 Sample Matrix Soil Sample Date 21 Apr 2021 Sample Name SE218963.029
Moisture Content Method: AN002 Tested: 30/4/2021			
% 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*	LB040859	%w/w	1	3 - 21%

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

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
Perfluorobutanoic acid (PFBA)	LB040858	mg/kg	0.0016	<0.0016	0%	NA
Perfluoropentanoic acid (PFPeA)	LB040858	mg/kg	0.0016	<0.0016	0%	NA
Perfluorohexanoic acid (PFHxA)	LB040858	mg/kg	0.0016	<0.0016	0%	NA
Perfluoroheptanoic acid (PFHpA)	LB040858	mg/kg	0.0016	<0.0016	0%	75%
Perfluorooctanoic Acid (PFOA)	LB040858	mg/kg	0.0008	<0.0008	0%	84%
Perfluorononanoic acid (PFNA)	LB040858	mg/kg	0.0016	<0.0016	0%	103%
Perfluorodecanoic acid (PFDA)	LB040858	mg/kg	0.0016	<0.0016	0%	109%
Perfluoroundecanoic acid (PFUnA)	LB040858	mg/kg	0.0016	<0.0016	0%	101%
Perfluorododecanoic acid (PFDoA)	LB040858	mg/kg	0.0016	<0.0016	0%	110%
Perfluorotridecanoic acid (PFTrDA)	LB040858	mg/kg	0.0016	<0.0016	0%	91%
Perfluorotetradecanoic acid (PFTeDA)	LB040858	mg/kg	0.0016	<0.0016	0%	NA
Perfluorohexadecanoic acid (PFHxDA)	LB040858	mg/kg	0.0032	<0.0032	0%	NA
Perfluorobutane sulfonate (PFBS)	LB040858	mg/kg	0.0016	<0.0016	0%	NA
Perfluoropentane sulfonate (PFPeS)	LB040858	mg/kg	0.0016	<0.0016	0%	NA
Perfluorohexane sulfonate (PFHxS)	LB040858	mg/kg	0.0016	<0.0016	0%	NA
Perfluoroheptane sulfonate (PFHpS)	LB040858	mg/kg	0.0016	<0.0016	0%	NA
Perfluorooctane sulfonate (PFOS)	LB040858	mg/kg	0.0016	<0.0016	0%	127%
Sum PFOS and PFHXS	LB040858	mg/kg	0.0016	<0.0016	0%	NA
Perfluorononane sulfonate (PFNS)	LB040858	mg/kg	0.0016	<0.0016	0%	NA
Perfluorodecane sulfonate (PFDS)	LB040858	mg/kg	0.0016	<0.0016	0%	NA
Perfluorododecane sulfonate (PFDoS)	LB040858	mg/kg	0.0016	<0.0016	0%	NA
1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS)	LB040858	mg/kg	0.0016	<0.0016	0%	NA
1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS)	LB040858	mg/kg	0.0016	<0.0016	0%	NA
1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS)	LB040858	mg/kg	0.0016	<0.0016	0%	NA
Perfluorooctane sulfonamide (PFOSA)	LB040858	mg/kg	0.0016	<0.0016	0%	74%
N-Methylperfluorooctane sulfonamide (N-MeFOSA)	LB040858	mg/kg	0.008	<0.008	0%	NA
N-Ethylperfluorooctane sulfonamide (N-EtFOSA)	LB040858	mg/kg	0.008	<0.008	0%	NA
2-(N-Methylperfluorooctane sulfonamido)-ethanol (N-MeFOSE)	LB040858	mg/kg	0.016	<0.016	0%	NA
2-(N-Ethylperfluorooctane sulfonamido)-ethanol (N-EtFOSE)	LB040858	mg/kg	0.016	<0.016	0%	NA
N-Methylperfluorooctanesulfonamidoacetic acid (N_MeFOSAA)	LB040858	mg/kg	0.008	<0.008	0%	NA
N-Ethylperfluorooctanesulfonamidoacetic Acid (N-EtFOSAA)	LB040858	mg/kg	0.008	<0.008	0%	NA
(13C4-PFBA) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	99%	0 - 1%	99%
(13C5-PFPeA) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	88%	1%	90%
(13C5-PFHxA) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	136%	0 - 10%	144%
(13C4-PFHpA) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	108%	1 - 10%	119%
(13C4_PFOA) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	112%	8 - 9%	118%
(13C9-PFNA) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	110%	2 - 3%	114%
(13C6-PFDA) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	109%	19%	98%
(13C7-PFUdA) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	87%	6 - 11%	98%
(13C2-PFDoA) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	84%	5 - 6%	96%
(13C2_PFTeDA) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	49%	9 - 59%	76%
(13C2-PFHxDA) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	11%	26 - 76%	32%
(13C3-PFBS) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	123%	2 - 5%	117%
(13C3-PFHxS) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	102%	0 - 13%	100%
(13C8-PFOS) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	115%	5 - 6%	108%
(13C2-4:2 FTS) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	89%	1 - 4%	84%
(13C2-6:2 FTS) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	47%	3 - 9%	46%
(13C2-8:2 FTS) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	55%	5 - 11%	51%
(13C8-PFOSA) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	101%	2 - 7%	99%
(D3-N-MeFOSA) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	65%	1 - 80%	69%
(D5-N-EtFOSA) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	59%	10 - 95%	56%

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
(D7-N-MeFOSE) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	92%	0 - 6%	98%
(D9-N-EtFOSE) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	79%	11%	91%
(D3-N-MeFOSAA) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	65%	4 - 9%	70%
(D5-N-EtFOSAA) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	69%	9 - 11%	58%

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

Contact	Andrew Ibrahim
Client	EI AUSTRALIA
Address	SUITE 6.01 55 MILLER STREET PYRMONT NSW 2009
Telephone	61 2 95160722
Facsimile	(Not specified)
Email	andrew.ibrahim@eiaustralia.com.au
Project	**E25077 Hughes,Waratah,Wharf Melrose Pk**
Order Number	**E25077**
Samples	31

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	**SE218963B R0**
Date Received	10/5/2021
Date Reported	11/5/2021

COMMENTS

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

SIGNATORIES

Bennet LO
Senior Organic Chemist/Metals Chemist

Shane MCDERMOTT
Inorganic/Metals Chemist

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 10/5/2021

PARAMETER	UOM	LOR	30-BH101_2.9-3.0 SOIL - 20/4/2021 SE218963B.030	30-BH101_5.4-5.5 SOIL - 20/4/2021 SE218963B.031
Lead, Pb	mg/kg	1	**74**	**550**
Arsenic, As	mg/kg	1	**5**	**310**

Moisture Content [AN002] Tested: 10/5/2021

PARAMETER	UOM	LOR	30-BH101_2.9-3.0 SOIL - 20/4/2021 SE218963B.030	30-BH101_5.4-5.5 SOIL - 20/4/2021 SE218963B.031
% Moisture	%w/w	1	**9.6**	**20.0**

TCLP (Toxicity Characteristic Leaching Procedure) for Metals [AN006] Tested: 10/5/2021

PARAMETER	UOM	LOR	30-BH101_2.9-3.0 SOIL - 20/4/2021 SE218963B.030	30-BH101_5.4-5.5 SOIL - 20/4/2021 SE218963B.031
pH 1:20	pH Units	-	**7.4**	**7.9**
pH 1:20 plus HCL	pH Units	-	**2.2**	**2.2**
Extraction Solution Used	No unit	-	**1**	**1**
Mass of Sample Used*	g	-	**13**	**13**
Volume of ExtractionSolution Used*	mL	-	**250**	**250**
pH TCLP after 18 hours	pH Units	-	**5.4**	**5.1**

Metals in TCLP Extract by ICPOES [AN320] Tested: 11/5/2021

PARAMETER	UOM	LOR	30-BH101_2.9-3.0 SOIL - 20/4/2021 SE218963B.030	30-BH101_5.4-5.5 SOIL - 20/4/2021 SE218963B.031
Arsenic, As	mg/L	0.02	<0.020	**0.34**
Lead, Pb	mg/L	0.02	**1.1**	**2.9**

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.
AN006	Contaminants of interest in a waste material are leached out of the waste with a selected leaching solution under controlled conditions. The ratio of sample to extraction fluid is 100g to 2L (1 to 20 by mass). The concentration of each contaminant of interest is determined in the leachate by appropriate methods after separation from the sample by filtering. Base on USEPA 1311.
AN006	Extraction Fluid #1: This fluid is made by combining 128.6mL of dilute sodium hydroxide solution and 11.5mL glacial acetic acid with water and diluting to a volume of 2 litres. The pH of this fluid should be 4.93 ± 0.05.
AN006	Extraction Fluid #2: This fluid is made by diluting 5.7mL glacial acetic acid with water to a volume of 1 litre. The pH of this fluid should be 2.88 ± 0.05.
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 ASS or ICP as per USEPA Method 200.8.
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.

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.

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STATEMENT OF QA/QC PERFORMANCE

SE218963B R0

CLIENT DETAILS

Contact	Andrew Ibrahim
Client	EI AUSTRALIA
Address	SUITE 6.01 55 MILLER STREET PYRMONT NSW 2009
Telephone	61 2 95160722
Facsimile	(Not specified)
Email	andrew.ibrahim@eiaustralia.com.au
Project	**E25077 Hughes,Waratah,Wharf Melrose Pk**
Order Number	**E25077**
Samples	31

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	**SE218963B R0**
Date Received	10 May 2021
Date Reported	11 May 2021

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	Moisture Content	2 items
Duplicate	Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES	2 items

SAMPLE SUMMARY

HOLDING TIME SUMMARY

SE218963B R0

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

Metals in TCLP Extract by ICPOES

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
30-BH101_2.9-3.0	SE218963B.030	LB224367	20 Apr 2021	10 May 2021	17 Oct 2021	11 May 2021	17 Oct 2021	11 May 2021
30-BH101_5.4-5.5	SE218963B.031	LB224367	20 Apr 2021	10 May 2021	17 Oct 2021	11 May 2021	17 Oct 2021	11 May 2021

Moisture Content

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
30-BH101_2.9-3.0	SE218963B.030	LB224356	20 Apr 2021	10 May 2021	04 May 2021	10 May 2021†	15 May 2021	11 May 2021
30-BH101_5.4-5.5	SE218963B.031	LB224356	20 Apr 2021	10 May 2021	04 May 2021	10 May 2021†	15 May 2021	11 May 2021

TCLP (Toxicity Characteristic Leaching Procedure) for Metals

Method: ME-(AU)-[ENV]AN006

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
30-BH101_2.9-3.0	SE218963B.030	LB224323	20 Apr 2021	10 May 2021	17 Oct 2021	10 May 2021	17 Oct 2021	11 May 2021
30-BH101_5.4-5.5	SE218963B.031	LB224323	20 Apr 2021	10 May 2021	17 Oct 2021	10 May 2021	17 Oct 2021	11 May 2021

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
30-BH101_2.9-3.0	SE218963B.030	LB224360	20 Apr 2021	10 May 2021	17 Oct 2021	10 May 2021	17 Oct 2021	11 May 2021
30-BH101_5.4-5.5	SE218963B.031	LB224360	20 Apr 2021	10 May 2021	17 Oct 2021	10 May 2021	17 Oct 2021	11 May 2021

SURROGATES

SE218963B R0

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.

No surrogates were required for this job.

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.

Metals in TCLP Extract by ICPOES — Method: ME-(AU)-[ENV]AN320

Sample Number	Parameter	Units	LOR	Result
LB224367.001	Arsenic, As	mg/L	0.02	<0.020
	Lead, Pb	mg/L	0.02	<0.02

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

Sample Number	Parameter	Units	LOR	Result
LB224360.001	Arsenic, As	mg/kg	1	<1
	Lead, Pb	mg/kg	1	<1

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

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 %
SE218963B.031	LB224360.007	Arsenic, As	mg/kg	1	310	440	30	34 ②
		Lead, Pb	mg/kg	1	550	860	30	44 ②

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.

Metals in TCLP Extract by ICPOES — Method: ME-(AU)-[ENV]AN320

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB224367.002	Arsenic, As	mg/L	0.02	0.50	0.5	80 - 120	99
	Lead, Pb	mg/L	0.02	0.48	0.5	80 - 120	95

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 %
LB224360.002	Arsenic, As	mg/kg	1	330	318.22	80 - 120	103
	Lead, Pb	mg/kg	1	91	89.9	80 - 120	101

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

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

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%
SE219373.041	LB224360.004	Arsenic, As	mg/kg	1	51	8.60540738293	50	84
		Lead, Pb	mg/kg	1	64	24.40341531344	50	80

MATRIX SPIKE DUPLICATES

SE218963B R0

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

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.

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Andrew Ibrahim
Client	EI AUSTRALIA
Address	SUITE 6.01 55 MILLER STREET PYRMONT NSW 2009
Telephone	61 2 95160722
Facsimile	(Not specified)
Email	andrew.ibrahim@eiaustralia.com.au
Project	**E25077 Hughes,Waratah,Wharf Melrose Pk**
Order Number	**E25077**
Samples	36

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	**SE218964 R0**
Date Received	23/4/2021
Date Reported	4/5/2021

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 Numbe. 2562/14420. Report No: ME320182

No respirable fibres detected in all soil samples using trace analysis technique.

Asbestos analysed by Approved Identifiers Yusuf Kuthpudin and Ravee Sivasubramaniam .

SIGNATORIES

Akheeqar BENIAMEEN
Chemist

Bennet LO
Senior Organic Chemist/Metals Chemist

Dong LIANG
Metals/Inorganics Team Leader

Huong CRAWFORD
Production Manager

Ly Kim HA
Organic Section Head

Ravee SIVASUBRAMANIAM
Hygiene Team Leader

VOC's in Soil [AN433] Tested: 29/4/2021

PARAMETER	UOM	LOR	30-BH110M_2.2-2.3 SOIL - 21/4/2021 SE218964.001	30-BH111M_0.2-0.3 SOIL - 21/4/2021 SE218964.002	30-BH117_0.2-0.3 SOIL - 21/4/2021 SE218964.003	112-BH101_0.3-0.4 SOIL - 22/4/2021 SE218964.004	112-BH102_0.4-0.5 SOIL - 22/4/2021 SE218964.005
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	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	112-BH103_0.2-0.3 SOIL - 21/4/2021 SE218964.006	112-BH104_0.2-0.3 SOIL - 21/4/2021 SE218964.007	112-BH105_0.2-0.3 SOIL - 21/4/2021 SE218964.008	112-BH106M_0.2-0.3 SOIL - 21/4/2021 SE218964.009	112-BH106M_1.4-1.5 SOIL - 21/4/2021 SE218964.010
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	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	112-BH107_0.2-0.3 SOIL - 21/4/2021 SE218964.011	112-BH108_0.2-0.3 SOIL - 21/4/2021 SE218964.012	112-BH108_0.7-0.8 SOIL - 21/4/2021 SE218964.013	112-BH109_0.3-0.4 SOIL - 21/4/2021 SE218964.014	112-BH109_0.7-0.8 SOIL - 21/4/2021 SE218964.015
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	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	112-BH110M_0.2-0.3 SOIL - 21/4/2021 SE218964.016	112-BH111_0.2-0.3 SOIL - 22/4/2021 SE218964.017	112-BH111_0.6-0.7 SOIL - 22/4/2021 SE218964.018	112-BH112M_0.4-0.5 SOIL - 22/4/2021 SE218964.019	112-BH113M_0.2-0.3 SOIL - 22/4/2021 SE218964.020
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	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

VOC's in Soil [AN433] Tested: 29/4/2021 (continued)

PARAMETER	UOM	LOR	32-BH101_0.1-0.2 SOIL - 22/4/2021 SE218964.021	32-BH102_0.2-0.3 SOIL - 22/4/2021 SE218964.022	2-BH103_0.3-0.4 SOIL - 22/4/2021 SE218964.023	2-BH103_0.9-1.0 SOIL - 22/4/2021 SE218964.024	32-BH104M_0.2-0.3 SOIL - 22/4/2021 SE218964.025
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	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	32-BH105_0.2-0.3 SOIL - 22/4/2021 SE218964.026	32-BH106_0.2-0.3 SOIL - 22/4/2021 SE218964.027	32-BH106_1.4-1.5 SOIL - 22/4/2021 SE218964.028	32-BH107M_0.2-0.3 SOIL - 22/4/2021 SE218964.029	QD1 SOIL - 20/2/2021 SE218964.030
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	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	QD2 SOIL - 22/2/2021 SE218964.031	QD3 SOIL - 22/2/2021 SE218964.032	QD4 SOIL - 22/2/2021 SE218964.033	QTB1 SOIL - 22/2/2021 SE218964.035	QTS1 SOIL - 22/2/2021 SE218964.036
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	[109%]
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	[101%]
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	[95%]
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	[95%]
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	[95%]
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	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	-

Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 29/4/2021

PARAMETER	UOM	LOR	30-BH110M_2.2-2.3 SOIL - 21/4/2021 SE218964.001	30-BH111M_0.2-0.3 SOIL - 21/4/2021 SE218964.002	30-BH117_0.2-0.3 SOIL - 21/4/2021 SE218964.003	112-BH101_0.3-0.4 SOIL - 22/4/2021 SE218964.004	112-BH102_0.4-0.5 SOIL - 22/4/2021 SE218964.005
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	112-BH103_0.2-0.3 SOIL - 21/4/2021 SE218964.006	112-BH104_0.2-0.3 SOIL - 21/4/2021 SE218964.007	112-BH105_0.2-0.3 SOIL - 21/4/2021 SE218964.008	112-BH106M_0.2-0.3 SOIL - 21/4/2021 SE218964.009	112-BH106M_1.4-1.5 SOIL - 21/4/2021 SE218964.010
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	112-BH107_0.2-0.3 SOIL - 21/4/2021 SE218964.011	112-BH108_0.2-0.3 SOIL - 21/4/2021 SE218964.012	112-BH108_0.7-0.8 SOIL - 21/4/2021 SE218964.013	112-BH109_0.3-0.4 SOIL - 21/4/2021 SE218964.014	112-BH109_0.7-0.8 SOIL - 21/4/2021 SE218964.015
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	112-BH110M_0.2-0.3 SOIL - 21/4/2021 SE218964.016	112-BH111_0.2-0.3 SOIL - 22/4/2021 SE218964.017	112-BH111_0.6-0.7 SOIL - 22/4/2021 SE218964.018	112-BH112M_0.4-0.5 SOIL - 22/4/2021 SE218964.019	112-BH113M_0.2-0.3 SOIL - 22/4/2021 SE218964.020
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	32-BH101_0.1-0.2 SOIL - 22/4/2021 SE218964.021	32-BH102_0.2-0.3 SOIL - 22/4/2021 SE218964.022	2-BH103_0.3-0.4 SOIL - 22/4/2021 SE218964.023	2-BH103_0.9-1.0 SOIL - 22/4/2021 SE218964.024	32-BH104M_0.2-0.3 SOIL - 22/4/2021 SE218964.025
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	32-BH105_0.2-0.3 SOIL - 22/4/2021 SE218964.026	32-BH106_0.2-0.3 SOIL - 22/4/2021 SE218964.027	32-BH106_1.4-1.5 SOIL - 22/4/2021 SE218964.028	32-BH107M_0.2-0.3 SOIL - 22/4/2021 SE218964.029	QD1 SOIL - 20/2/2021 SE218964.030
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

Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 29/4/2021 (continued)

PARAMETER	UOM	LOR	QD2 SOIL - 22/2/2021 SE218964.031	QD3 SOIL - 22/2/2021 SE218964.032	QD4 SOIL - 22/2/2021 SE218964.033
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: 29/4/2021

PARAMETER	UOM	LOR	30-BH110M_2.2-2.3 SOIL - 21/4/2021 SE218964.001	30-BH111M_0.2-0.3 SOIL - 21/4/2021 SE218964.002	30-BH117_0.2-0.3 SOIL - 21/4/2021 SE218964.003	112-BH101_0.3-0.4 SOIL - 22/4/2021 SE218964.004	112-BH102_0.4-0.5 SOIL - 22/4/2021 SE218964.005
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	**85**	<45	<45	<45	<45
TRH C29-C36	mg/kg	45	**93**	<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	**180**	<110	<110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210	<210

PARAMETER	UOM	LOR	112-BH103_0.2-0.3 SOIL - 21/4/2021 SE218964.006	112-BH104_0.2-0.3 SOIL - 21/4/2021 SE218964.007	112-BH105_0.2-0.3 SOIL - 21/4/2021 SE218964.008	112-BH106M_0.2-0.3 SOIL - 21/4/2021 SE218964.009	112-BH106M_1.4-1.5 SOIL - 21/4/2021 SE218964.010
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	**50**	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	**48**	<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	112-BH107_0.2-0.3 SOIL - 21/4/2021 SE218964.011	112-BH108_0.2-0.3 SOIL - 21/4/2021 SE218964.012	112-BH108_0.7-0.8 SOIL - 21/4/2021 SE218964.013	112-BH109_0.3-0.4 SOIL - 21/4/2021 SE218964.014	112-BH109_0.7-0.8 SOIL - 21/4/2021 SE218964.015
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	**120**	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	**190**	<45	<45	**53**
TRH C37-C40	mg/kg	100	<100	**210**	<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	**210**	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	**300**	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	**310**	<110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	**510**	<210	<210	<210

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 29/4/2021 (continued)

PARAMETER	UOM	LOR	112-BH110M_0.2-0.3 SOIL - 21/4/2021 SE218964.016	112-BH111_0.2-0.3 SOIL - 22/4/2021 SE218964.017	112-BH111_0.6-0.7 SOIL - 22/4/2021 SE218964.018	112-BH112M_0.4-0.5 SOIL - 22/4/2021 SE218964.019	112-BH113M_0.2-0.3 SOIL - 22/4/2021 SE218964.020
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	<45	**52**	<45
TRH C29-C36	mg/kg	45	**56**	<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	32-BH101_0.1-0.2 SOIL - 22/4/2021 SE218964.021	32-BH102_0.2-0.3 SOIL - 22/4/2021 SE218964.022	2-BH103_0.3-0.4 SOIL - 22/4/2021 SE218964.023	2-BH103_0.9-1.0 SOIL - 22/4/2021 SE218964.024	32-BH104M_0.2-0.3 SOIL - 22/4/2021 SE218964.025
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	32-BH105_0.2-0.3 SOIL - 22/4/2021 SE218964.026	32-BH106_0.2-0.3 SOIL - 22/4/2021 SE218964.027	32-BH106_1.4-1.5 SOIL - 22/4/2021 SE218964.028	32-BH107M_0.2-0.3 SOIL - 22/4/2021 SE218964.029	QD1 SOIL - 20/2/2021 SE218964.030
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

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 29/4/2021 (continued)

PARAMETER	UOM	LOR	QD2 SOIL - 22/2/2021 SE218964.031	QD3 SOIL - 22/2/2021 SE218964.032	QD4 SOIL - 22/2/2021 SE218964.033
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: 29/4/2021

PARAMETER	UOM	LOR	30-BH110M_2.2-2.3 SOIL - 21/4/2021 SE218964.001	30-BH111M_0.2-0.3 SOIL - 21/4/2021 SE218964.002	30-BH117_0.2-0.3 SOIL - 21/4/2021 SE218964.003	112-BH101_0.3-0.4 SOIL - 22/4/2021 SE218964.004	112-BH102_0.4-0.5 SOIL - 22/4/2021 SE218964.005
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	**0.3**	<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	**0.6**	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	**0.6**	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	**0.2**	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	**0.3**	<0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	**0.3**	<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	**0.3**	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	**0.2**	<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	**0.2**	<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	**0.4**	<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	**0.5**	<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	**0.4**	<0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	**3.2**	<0.8	<0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	**3.2**	<0.8	<0.8	<0.8	<0.8

PARAMETER	UOM	LOR	112-BH103_0.2-0.3 SOIL - 21/4/2021 SE218964.006	112-BH104_0.2-0.3 SOIL - 21/4/2021 SE218964.007	112-BH105_0.2-0.3 SOIL - 21/4/2021 SE218964.008	112-BH106M_0.2-0.3 SOIL - 21/4/2021 SE218964.009	112-BH106M_1.4-1.5 SOIL - 21/4/2021 SE218964.010
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	**0.2**	<0.1	**0.1**
Pyrene	mg/kg	0.1	<0.1	<0.1	**0.2**	<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: 29/4/2021 (continued)

PARAMETER	UOM	LOR	112-BH107_0.2-0.3 SOIL - 21/4/2021 SE218964.011	112-BH108_0.2-0.3 SOIL - 21/4/2021 SE218964.012	112-BH108_0.7-0.8 SOIL - 21/4/2021 SE218964.013	112-BH109_0.3-0.4 SOIL - 21/4/2021 SE218964.014	112-BH109_0.7-0.8 SOIL - 21/4/2021 SE218964.015
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	**1.0**	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	**0.3**	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	**1.6**	<0.1	**0.1**	<0.1
Pyrene	mg/kg	0.1	<0.1	**1.5**	<0.1	**0.1**	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	**0.5**	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	**0.5**	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	**0.6**	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	**0.2**	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	**0.5**	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	**0.3**	<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	**0.4**	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	<0.2	**0.7**	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	<0.3	**0.8**	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	<0.2	**0.7**	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	**7.4**	<0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	**7.4**	<0.8	<0.8	<0.8

PARAMETER	UOM	LOR	112-BH110M_0.2-0.3 SOIL - 21/4/2021 SE218964.016	112-BH111_0.2-0.3 SOIL - 22/4/2021 SE218964.017	112-BH111_0.6-0.7 SOIL - 22/4/2021 SE218964.018	112-BH112M_0.4-0.5 SOIL - 22/4/2021 SE218964.019	112-BH113M_0.2-0.3 SOIL - 22/4/2021 SE218964.020
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: 29/4/2021 (continued)

PARAMETER	UOM	LOR	32-BH101_0.1-0.2 SOIL - 22/4/2021 SE218964.021	32-BH102_0.2-0.3 SOIL - 22/4/2021 SE218964.022	2-BH103_0.3-0.4 SOIL - 22/4/2021 SE218964.023	2-BH103_0.9-1.0 SOIL - 22/4/2021 SE218964.024	32-BH104M_0.2-0.3 SOIL - 22/4/2021 SE218964.025
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	32-BH105_0.2-0.3 SOIL - 22/4/2021 SE218964.026	32-BH106_0.2-0.3 SOIL - 22/4/2021 SE218964.027	32-BH106_1.4-1.5 SOIL - 22/4/2021 SE218964.028	32-BH107M_0.2-0.3 SOIL - 22/4/2021 SE218964.029	QD1 SOIL - 20/2/2021 SE218964.030
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	**0.2**
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	**0.5**
Pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	**0.5**
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	**0.2**
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	**0.3**
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	**0.3**
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	**0.2**
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	**0.3**
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	**0.2**
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	**0.2**
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	**0.4**
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	<0.3	**0.5**
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	**0.4**
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	**3.0**
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	**3.0**

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 29/4/2021 (continued)

PARAMETER	UOM	LOR	QD2 SOIL - 22/2/2021 SE218964.031	QD3 SOIL - 22/2/2021 SE218964.032	QD4 SOIL - 22/2/2021 SE218964.033
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	**0.2**	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	**0.8**	<0.1
Pyrene	mg/kg	0.1	<0.1	**1.1**	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	**0.5**	<0.1
Chrysene	mg/kg	0.1	<0.1	**0.6**	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	**0.5**	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	**0.4**	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	**0.5**	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	**0.5**	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	**0.5**	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	<0.2	**0.7**	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	<0.3	**0.8**	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	<0.2	**0.8**	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	**5.9**	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	**5.9**	<0.8

OC Pesticides in Soil [AN420] Tested: 29/4/2021

PARAMETER	UOM	LOR	112-BH102_0.4-0.5 SOIL - 22/4/2021 SE218964.005	112-BH104_0.2-0.3 SOIL - 21/4/2021 SE218964.007	112-BH105_0.2-0.3 SOIL - 21/4/2021 SE218964.008	112-BH106M_0.2-0.3 SOIL - 21/4/2021 SE218964.009	112-BH107_0.2-0.3 SOIL - 21/4/2021 SE218964.011
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	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

OC Pesticides in Soil [AN420] Tested: 29/4/2021 (continued)

PARAMETER	UOM	LOR	112-BH109_0.3-0.4 SOIL - 21/4/2021 SE218964.014	112-BH110M_0.2-0.3 SOIL - 21/4/2021 SE218964.016	112-BH112M_0.4-0.5 SOIL - 22/4/2021 SE218964.019	112-BH113M_0.2-0.3 SOIL - 22/4/2021 SE218964.020	32-BH101_0.1-0.2 SOIL - 22/4/2021 SE218964.021
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	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

OC Pesticides in Soil [AN420] Tested: 29/4/2021 (continued)

PARAMETER	UOM	LOR	32-BH102_0.2-0.3 SOIL - 22/4/2021 SE218964.022	2-BH103_0.3-0.4 SOIL - 22/4/2021 SE218964.023	32-BH104M_0.2-0.3 SOIL - 22/4/2021 SE218964.025	32-BH105_0.2-0.3 SOIL - 22/4/2021 SE218964.026	32-BH107M_0.2-0.3 SOIL - 22/4/2021 SE218964.029
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	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

OP Pesticides in Soil [AN420] Tested: 29/4/2021

PARAMETER	UOM	LOR	112-BH102_0.4-0.5 SOIL - 22/4/2021 SE218964.005	112-BH104_0.2-0.3 SOIL - 21/4/2021 SE218964.007	112-BH105_0.2-0.3 SOIL - 21/4/2021 SE218964.008	112-BH106M_0.2-0.3 SOIL - 21/4/2021 SE218964.009	112-BH107_0.2-0.3 SOIL - 21/4/2021 SE218964.011
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	112-BH109_0.3-0.4 SOIL - 21/4/2021 SE218964.014	112-BH110M_0.2-0.3 SOIL - 21/4/2021 SE218964.016	112-BH112M_0.4-0.5 SOIL - 22/4/2021 SE218964.019	112-BH113M_0.2-0.3 SOIL - 22/4/2021 SE218964.020	32-BH101_0.1-0.2 SOIL - 22/4/2021 SE218964.021
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	32-BH102_0.2-0.3 SOIL - 22/4/2021 SE218964.022	2-BH103_0.3-0.4 SOIL - 22/4/2021 SE218964.023	32-BH104M_0.2-0.3 SOIL - 22/4/2021 SE218964.025	32-BH105_0.2-0.3 SOIL - 22/4/2021 SE218964.026	32-BH107M_0.2-0.3 SOIL - 22/4/2021 SE218964.029
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: 29/4/2021

PARAMETER	UOM	LOR	112-BH102_0.4-0.5 SOIL - 22/4/2021 SE218964.005	112-BH104_0.2-0.3 SOIL - 21/4/2021 SE218964.007	112-BH105_0.2-0.3 SOIL - 21/4/2021 SE218964.008	112-BH106M_0.2-0.3 SOIL - 21/4/2021 SE218964.009	112-BH107_0.2-0.3 SOIL - 21/4/2021 SE218964.011
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	112-BH109_0.3-0.4 SOIL - 21/4/2021 SE218964.014	112-BH110M_0.2-0.3 SOIL - 21/4/2021 SE218964.016	112-BH112M_0.4-0.5 SOIL - 22/4/2021 SE218964.019	112-BH113M_0.2-0.3 SOIL - 22/4/2021 SE218964.020	32-BH101_0.1-0.2 SOIL - 22/4/2021 SE218964.021
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	32-BH102_0.2-0.3 SOIL - 22/4/2021 SE218964.022	2-BH103_0.3-0.4 SOIL - 22/4/2021 SE218964.023	32-BH104M_0.2-0.3 SOIL - 22/4/2021 SE218964.025	32-BH105_0.2-0.3 SOIL - 22/4/2021 SE218964.026	32-BH107M_0.2-0.3 SOIL - 22/4/2021 SE218964.029
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 Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 30/4/2021

PARAMETER	UOM	LOR	30-BH110M_2.2-2.3 SOIL - 21/4/2021 SE218964.001	30-BH111M_0.2-0.3 SOIL - 21/4/2021 SE218964.002	30-BH117_0.2-0.3 SOIL - 21/4/2021 SE218964.003	112-BH101_0.3-0.4 SOIL - 22/4/2021 SE218964.004	112-BH102_0.4-0.5 SOIL - 22/4/2021 SE218964.005
Arsenic, As	mg/kg	1	6	7	4	10	3
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	13	13	12	12	9.3
Copper, Cu	mg/kg	0.5	9.2	10	7.1	37	54
Lead, Pb	mg/kg	1	24	16	16	16	5
Nickel, Ni	mg/kg	0.5	5.5	6.8	3.6	26	68
Zinc, Zn	mg/kg	2	28	30	23	29	41

PARAMETER	UOM	LOR	112-BH103_0.2-0.3 SOIL - 21/4/2021 SE218964.006	112-BH104_0.2-0.3 SOIL - 21/4/2021 SE218964.007	112-BH105_0.2-0.3 SOIL - 21/4/2021 SE218964.008	112-BH106M_0.2-0.3 SOIL - 21/4/2021 SE218964.009	112-BH106M_1.4-1.5 SOIL - 21/4/2021 SE218964.010
Arsenic, As	mg/kg	1	6	2	4	7	10
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	18	12	15	11	15
Copper, Cu	mg/kg	0.5	22	66	18	26	23
Lead, Pb	mg/kg	1	20	2	43	28	57
Nickel, Ni	mg/kg	0.5	8.4	68	10	7.0	5.3
Zinc, Zn	mg/kg	2	28	40	260	37	46

PARAMETER	UOM	LOR	112-BH107_0.2-0.3 SOIL - 21/4/2021 SE218964.011	112-BH108_0.2-0.3 SOIL - 21/4/2021 SE218964.012	112-BH108_0.7-0.8 SOIL - 21/4/2021 SE218964.013	112-BH109_0.3-0.4 SOIL - 21/4/2021 SE218964.014	112-BH109_0.7-0.8 SOIL - 21/4/2021 SE218964.015
Arsenic, As	mg/kg	1	5	6	5	2	9
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	7.8	15	5.9	8.8	10
Copper, Cu	mg/kg	0.5	39	39	27	3.6	23
Lead, Pb	mg/kg	1	14	25	17	5	23
Nickel, Ni	mg/kg	0.5	23	19	6.9	1.8	4.0
Zinc, Zn	mg/kg	2	33	61	68	9.8	30

PARAMETER	UOM	LOR	112-BH110M_0.2-0.3 SOIL - 21/4/2021 SE218964.016	112-BH111_0.2-0.3 SOIL - 22/4/2021 SE218964.017	112-BH111_0.6-0.7 SOIL - 22/4/2021 SE218964.018	112-BH112M_0.4-0.5 SOIL - 22/4/2021 SE218964.019	112-BH113M_0.2-0.3 SOIL - 22/4/2021 SE218964.020
Arsenic, As	mg/kg	1	9	7	3	7	11
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	0.3	<0.3
Chromium, Cr	mg/kg	0.5	16	12	6.0	23	12
Copper, Cu	mg/kg	0.5	19	26	15	31	16
Lead, Pb	mg/kg	1	32	20	16	31	27
Nickel, Ni	mg/kg	0.5	6.7	4.4	3.0	38	4.8
Zinc, Zn	mg/kg	2	92	27	17	210	38

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 30/4/2021 (continued)

PARAMETER	UOM	LOR	32-BH101_0.1-0.2 SOIL - 22/4/2021 SE218964.021	32-BH102_0.2-0.3 SOIL - 22/4/2021 SE218964.022	2-BH103_0.3-0.4 SOIL - 22/4/2021 SE218964.023	2-BH103_0.9-1.0 SOIL - 22/4/2021 SE218964.024	32-BH104M_0.2-0.3 SOIL - 22/4/2021 SE218964.025
Arsenic, As	mg/kg	1	3	8	6	11	3
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	6.8	13	11	18	5.4
Copper, Cu	mg/kg	0.5	6.5	23	20	23	12
Lead, Pb	mg/kg	1	54	19	18	30	14
Nickel, Ni	mg/kg	0.5	2.7	5.3	4.1	8.0	1.7
Zinc, Zn	mg/kg	2	36	16	14	39	11

PARAMETER	UOM	LOR	32-BH105_0.2-0.3 SOIL - 22/4/2021 SE218964.026	32-BH106_0.2-0.3 SOIL - 22/4/2021 SE218964.027	32-BH106_1.4-1.5 SOIL - 22/4/2021 SE218964.028	32-BH107M_0.2-0.3 SOIL - 22/4/2021 SE218964.029	QD1 SOIL - 20/2/2021 SE218964.030
Arsenic, As	mg/kg	1	9	10	9	6	5
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	27	13	22	11	8.9
Copper, Cu	mg/kg	0.5	42	36	710	8.8	28
Lead, Pb	mg/kg	1	220	41	86	17	54
Nickel, Ni	mg/kg	0.5	20	6.8	16	3.9	5.2
Zinc, Zn	mg/kg	2	150	42	130	17	66

PARAMETER	UOM	LOR	QD2 SOIL - 22/2/2021 SE218964.031	QD3 SOIL - 22/2/2021 SE218964.032	QD4 SOIL - 22/2/2021 SE218964.033
Arsenic, As	mg/kg	1	6	5	2
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	17	2.9	9.7
Copper, Cu	mg/kg	0.5	37	7.7	53
Lead, Pb	mg/kg	1	82	31	2
Nickel, Ni	mg/kg	0.5	15	1.4	53
Zinc, Zn	mg/kg	2	84	24	34

Mercury in Soil [AN312] Tested: 30/4/2021

PARAMETER	UOM	LOR	30-BH110M_2.2-2.3 SOIL - 21/4/2021 SE218964.001	30-BH111M_0.2-0.3 SOIL - 21/4/2021 SE218964.002	30-BH117_0.2-0.3 SOIL - 21/4/2021 SE218964.003	112-BH101_0.3-0.4 SOIL - 22/4/2021 SE218964.004	112-BH102_0.4-0.5 SOIL - 22/4/2021 SE218964.005
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	112-BH103_0.2-0.3 SOIL - 21/4/2021 SE218964.006	112-BH104_0.2-0.3 SOIL - 21/4/2021 SE218964.007	112-BH105_0.2-0.3 SOIL - 21/4/2021 SE218964.008	112-BH106M_0.2-0.3 SOIL - 21/4/2021 SE218964.009	112-BH106M_1.4-1.5 SOIL - 21/4/2021 SE218964.010
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	112-BH107_0.2-0.3 SOIL - 21/4/2021 SE218964.011	112-BH108_0.2-0.3 SOIL - 21/4/2021 SE218964.012	112-BH108_0.7-0.8 SOIL - 21/4/2021 SE218964.013	112-BH109_0.3-0.4 SOIL - 21/4/2021 SE218964.014	112-BH109_0.7-0.8 SOIL - 21/4/2021 SE218964.015
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	112-BH110M_0.2-0.3 SOIL - 21/4/2021 SE218964.016	112-BH111_0.2-0.3 SOIL - 22/4/2021 SE218964.017	112-BH111_0.6-0.7 SOIL - 22/4/2021 SE218964.018	112-BH112M_0.4-0.5 SOIL - 22/4/2021 SE218964.019	112-BH113M_0.2-0.3 SOIL - 22/4/2021 SE218964.020
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	**0.13**	**0.09**

PARAMETER	UOM	LOR	32-BH101_0.1-0.2 SOIL - 22/4/2021 SE218964.021	32-BH102_0.2-0.3 SOIL - 22/4/2021 SE218964.022	2-BH103_0.3-0.4 SOIL - 22/4/2021 SE218964.023	2-BH103_0.9-1.0 SOIL - 22/4/2021 SE218964.024	32-BH104M_0.2-0.3 SOIL - 22/4/2021 SE218964.025
Mercury	mg/kg	0.05	**0.13**	<0.05	<0.05	**0.07**	<0.05

PARAMETER	UOM	LOR	32-BH105_0.2-0.3 SOIL - 22/4/2021 SE218964.026	32-BH106_0.2-0.3 SOIL - 22/4/2021 SE218964.027	32-BH106_1.4-1.5 SOIL - 22/4/2021 SE218964.028	32-BH107M_0.2-0.3 SOIL - 22/4/2021 SE218964.029	QD1 SOIL - 20/2/2021 SE218964.030
Mercury	mg/kg	0.05	**0.18**	**4.7**	**0.38**	<0.05	**0.10**

PARAMETER	UOM	LOR	QD2 SOIL - 22/2/2021 SE218964.031	QD3 SOIL - 22/2/2021 SE218964.032	QD4 SOIL - 22/2/2021 SE218964.033
Mercury	mg/kg	0.05	**0.14**	<0.05	<0.05

Moisture Content [AN002] Tested: 29/4/2021

PARAMETER	UOM	LOR	30-BH110M_2.2-2.3 SOIL - 21/4/2021 SE218964.001	30-BH111M_0.2-0.3 SOIL - 21/4/2021 SE218964.002	30-BH117_0.2-0.3 SOIL - 21/4/2021 SE218964.003	112-BH101_0.3-0.4 SOIL - 22/4/2021 SE218964.004	112-BH102_0.4-0.5 SOIL - 22/4/2021 SE218964.005
% Moisture	%w/w	1	13.4	11.3	9.1	4.0	11.2

PARAMETER	UOM	LOR	112-BH103_0.2-0.3 SOIL - 21/4/2021 SE218964.006	112-BH104_0.2-0.3 SOIL - 21/4/2021 SE218964.007	112-BH105_0.2-0.3 SOIL - 21/4/2021 SE218964.008	112-BH106M_0.2-0.3 SOIL - 21/4/2021 SE218964.009	112-BH106M_1.4-1.5 SOIL - 21/4/2021 SE218964.010
% Moisture	%w/w	1	12.6	7.9	11.3	11.3	15.6

PARAMETER	UOM	LOR	112-BH107_0.2-0.3 SOIL - 21/4/2021 SE218964.011	112-BH108_0.2-0.3 SOIL - 21/4/2021 SE218964.012	112-BH108_0.7-0.8 SOIL - 21/4/2021 SE218964.013	112-BH109_0.3-0.4 SOIL - 21/4/2021 SE218964.014	112-BH109_0.7-0.8 SOIL - 21/4/2021 SE218964.015
% Moisture	%w/w	1	15.6	9.0	14.4	8.0	14.4

PARAMETER	UOM	LOR	112-BH110M_0.2-0.3 SOIL - 21/4/2021 SE218964.016	112-BH111_0.2-0.3 SOIL - 22/4/2021 SE218964.017	112-BH111_0.6-0.7 SOIL - 22/4/2021 SE218964.018	112-BH112M_0.4-0.5 SOIL - 22/4/2021 SE218964.019	112-BH113M_0.2-0.3 SOIL - 22/4/2021 SE218964.020
% Moisture	%w/w	1	21.0	15.2	17.4	12.1	13.9

PARAMETER	UOM	LOR	32-BH101_0.1-0.2 SOIL - 22/4/2021 SE218964.021	32-BH102_0.2-0.3 SOIL - 22/4/2021 SE218964.022	2-BH103_0.3-0.4 SOIL - 22/4/2021 SE218964.023	2-BH103_0.9-1.0 SOIL - 22/4/2021 SE218964.024	32-BH104M_0.2-0.3 SOIL - 22/4/2021 SE218964.025
% Moisture	%w/w	1	10.5	16.6	10.9	39.5	11.9

PARAMETER	UOM	LOR	32-BH105_0.2-0.3 SOIL - 22/4/2021 SE218964.026	32-BH106_0.2-0.3 SOIL - 22/4/2021 SE218964.027	32-BH106_1.4-1.5 SOIL - 22/4/2021 SE218964.028	32-BH107M_0.2-0.3 SOIL - 22/4/2021 SE218964.029	QD1 SOIL - 20/2/2021 SE218964.030
% Moisture	%w/w	1	35.1	20.9	21.9	11.6	13.4

PARAMETER	UOM	LOR	QD2 SOIL - 22/2/2021 SE218964.031	QD3 SOIL - 22/2/2021 SE218964.032	QD4 SOIL - 22/2/2021 SE218964.033	QTB1 SOIL - 22/2/2021 SE218964.035
% Moisture	%w/w	1	15.2	11.3	3.5	<1.0

Fibre Identification in soil [AN602] Tested: 3/5/2021

PARAMETER	UOM	LOR	30-BH110M_2.2-2.3 SOIL - 21/4/2021 SE218964.001	30-BH111M_0.2-0.3 SOIL - 21/4/2021 SE218964.002	30-BH117_0.2-0.3 SOIL - 21/4/2021 SE218964.003	112-BH101_0.3-0.4 SOIL - 22/4/2021 SE218964.004	112-BH102_0.4-0.5 SOIL - 22/4/2021 SE218964.005
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

PARAMETER	UOM	LOR	112-BH103_0.2-0.3 SOIL - 21/4/2021 SE218964.006	112-BH104_0.2-0.3 SOIL - 21/4/2021 SE218964.007	112-BH105_0.2-0.3 SOIL - 21/4/2021 SE218964.008	112-BH106M_0.2-0.3 SOIL - 21/4/2021 SE218964.009	112-BH106M_1.4-1.5 SOIL - 21/4/2021 SE218964.010
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

PARAMETER	UOM	LOR	112-BH107_0.2-0.3 SOIL - 21/4/2021 SE218964.011	112-BH108_0.2-0.3 SOIL - 21/4/2021 SE218964.012	112-BH108_0.7-0.8 SOIL - 21/4/2021 SE218964.013	112-BH109_0.3-0.4 SOIL - 21/4/2021 SE218964.014	112-BH109_0.7-0.8 SOIL - 21/4/2021 SE218964.015
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

PARAMETER	UOM	LOR	112-BH110M_0.2-0.3 SOIL - 21/4/2021 SE218964.016	112-BH111_0.2-0.3 SOIL - 22/4/2021 SE218964.017	112-BH111_0.6-0.7 SOIL - 22/4/2021 SE218964.018	112-BH112M_0.4-0.5 SOIL - 22/4/2021 SE218964.019	112-BH113M_0.2-0.3 SOIL - 22/4/2021 SE218964.020
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

PARAMETER	UOM	LOR	32-BH101_0.1-0.2 SOIL - 22/4/2021 SE218964.021	32-BH102_0.2-0.3 SOIL - 22/4/2021 SE218964.022	2-BH103_0.3-0.4 SOIL - 22/4/2021 SE218964.023	2-BH103_0.9-1.0 SOIL - 22/4/2021 SE218964.024	32-BH104M_0.2-0.3 SOIL - 22/4/2021 SE218964.025
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

PARAMETER	UOM	LOR	32-BH105_0.2-0.3 SOIL - 22/4/2021 SE218964.026	32-BH106_0.2-0.3 SOIL - 22/4/2021 SE218964.027	32-BH106_1.4-1.5 SOIL - 22/4/2021 SE218964.028	32-BH107M_0.2-0.3 SOIL - 22/4/2021 SE218964.029
Asbestos Detected	No unit	-	No	No	No	No
Estimated Fibres*	%w/w	0.01	<0.01	<0.01	<0.01	<0.01

Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples [MA-1523] Tested: 3/5/2021

PARAMETER	UOM	LOR	112-BH102_0.4-0.5 SOIL - 22/4/2021 SE218964.005	112-BH105_0.2-0.3 SOIL - 21/4/2021 SE218964.008	112-BH106M_0.2-0.3 SOIL - 21/4/2021 SE218964.009	112-BH109_0.3-0.4 SOIL - 21/4/2021 SE218964.014	112-BH112M_0.4-0.5 SOIL - 22/4/2021 SE218964.019
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	**0.0009**	<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	**0.0049**	<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	**0.034**	**0.0098**
Sum PFOS and PFHXS	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	**0.039**	**0.0098**
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	**0.0026**	<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
Perfluorooctane sulfonamide (PFOSA)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016	<0.0016
N-Methylperfluorooctane sulfonamide (N-MeFOSA)	mg/kg	0.008	<0.008	<0.008	<0.008	<0.008	<0.008
N-Ethylperfluorooctane 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

Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples [MA-1523] Tested: 3/5/2021 (continued)

PARAMETER	UOM	LOR	112-BH113M_0.2-0.3 SOIL - 22/4/2021 SE218964.020	32-BH101_0.1-0.2 SOIL - 22/4/2021 SE218964.021	32-BH104M_0.2-0.3 SOIL - 22/4/2021 SE218964.025	32-BH107M_0.2-0.3 SOIL - 22/4/2021 SE218964.029
Perfluorobutanoic acid (PFBA)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016
Perfluoropentanoic acid (PFPeA)	mg/kg	0.0016	**0.0024**	<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	**0.0073**	<0.0008	<0.0008	<0.0008
Perfluorononanoic acid (PFNA)	mg/kg	0.0016	**0.0021**	<0.0016	<0.0016	<0.0016
Perfluorodecanoic acid (PFDA)	mg/kg	0.0016	**0.011**	<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	**0.0029**	<0.0016	<0.0016	<0.0016
Sum PFOS and PFHXS	mg/kg	0.0016	**0.0029**	<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
Perfluorooctane sulfonamide (PFOSA)	mg/kg	0.0016	<0.0016	<0.0016	<0.0016	<0.0016
N-Methylperfluorooctane sulfonamide (N-MeFOSA)	mg/kg	0.008	<0.008	<0.008	<0.008	<0.008
N-Ethylperfluorooctane 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

VOCs in Water [AN433] Tested: 29/4/2021

PARAMETER	UOM	LOR	QR1 WATER - 22/2/2021 SE218964.034
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	µg/L	0.5	<0.5

Volatile Petroleum Hydrocarbons in Water [AN433] Tested: 29/4/2021

PARAMETER	UOM	LOR	QR1 WATER - 22/2/2021 SE218964.034
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: 28/4/2021

PARAMETER	UOM	LOR	QR1 WATER - 22/2/2021 SE218964.034
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

Trace Metals (Dissolved) in Water by ICPMS [AN318] Tested: 28/4/2021

PARAMETER	UOM	LOR	QR1 WATER - 22/2/2021 SE218964.034
Arsenic, As	µg/L	1	<1
Cadmium, Cd	µg/L	0.1	<0.1
Chromium, Cr	µg/L	1	<1
Copper, Cu	µg/L	1	<1
Lead, Pb	µg/L	1	<1
Nickel, Ni	µg/L	1	<1
Zinc, Zn	µg/L	5	<5

Mercury (dissolved) in Water [AN311(Perth)/AN312] Tested: 27/4/2021

PARAMETER	UOM	LOR	QR1 WATER - 22/2/2021 SE218964.034
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 ASS or ICP as per USEPA Method 200.8.
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).
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	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	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	AS4964.2004 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 limit 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	The sample can be reported “no asbestos found at the reporting limit 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.
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-qb/environment-health-and-safety.

STATEMENT OF QA/QC PERFORMANCE

SE218964 R0

CLIENT DETAILS

Contact	Andrew Ibrahim
Client	EI AUSTRALIA
Address	SUITE 6.01 55 MILLER STREET PYRMONT NSW 2009
Telephone	61 2 95160722
Facsimile	(Not specified)
Email	andrew.ibrahim@eiaustralia.com.au
Project	**E25077 Hughes,Waratah,Wharf Melrose Pk**
Order Number	**E25077**
Samples	36

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	**SE218964 R0**
Date Received	23 Apr 2021
Date Reported	04 May 2021

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	Mercury (dissolved) in Water	1 item
	Mercury in Soil	4 items
	Moisture Content	5 items
	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	4 items
	TRH (Total Recoverable Hydrocarbons) in Soil	4 items
	TRH (Total Recoverable Hydrocarbons) in Water	1 item
	VOC's in Soil	6 items
	VOCs in Water	1 item
	Volatile Petroleum Hydrocarbons in Soil	4 items
	Volatile Petroleum Hydrocarbons in Water	1 item
Analysis Date	Mercury (dissolved) in Water	1 item
	Mercury in Soil	4 items
Surrogate	Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples	2 items
	VOC's in Soil	1 item

There are more than 15 quality objective exceedences. Please see report for details

SAMPLE SUMMARY

Samples clearly labelled	Yes	Complete documentation received	Yes
Sample container provider	SGS	Sample cooling method	Ice Bricks
Samples received in correct containers	Yes	Sample counts by matrix	35 Soil, 1 water
Date documentation received	26/4/2021@3:35pm	Type of documentation received	COC
Samples received in good order	Yes	Samples received without headspace	Yes
Sample temperature upon receipt	10.0C	Sufficient sample for analysis	Yes
Turnaround time requested	Standard		

HOLDING TIME SUMMARY

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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

Fibre Identification in soil

Method: ME-(AU)-[ENV]AN602

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
30-BH110M_2.2-2.3	SE218964.001	LB223745	21 Apr 2021	23 Apr 2021	21 Apr 2022	03 May 2021	21 Apr 2022	03 May 2021
30-BH111M_0.2-0.3	SE218964.002	LB223745	21 Apr 2021	23 Apr 2021	21 Apr 2022	03 May 2021	21 Apr 2022	03 May 2021
30-BH117_0.2-0.3	SE218964.003	LB223745	21 Apr 2021	23 Apr 2021	21 Apr 2022	03 May 2021	21 Apr 2022	03 May 2021
112-BH101_0.3-0.4	SE218964.004	LB223745	22 Apr 2021	23 Apr 2021	22 Apr 2022	03 May 2021	22 Apr 2022	03 May 2021
112-BH102_0.4-0.5	SE218964.005	LB223745	22 Apr 2021	23 Apr 2021	22 Apr 2022	03 May 2021	22 Apr 2022	03 May 2021
112-BH103_0.2-0.3	SE218964.006	LB223745	21 Apr 2021	23 Apr 2021	21 Apr 2022	03 May 2021	21 Apr 2022	03 May 2021
112-BH104_0.2-0.3	SE218964.007	LB223745	21 Apr 2021	23 Apr 2021	21 Apr 2022	03 May 2021	21 Apr 2022	03 May 2021
112-BH105_0.2-0.3	SE218964.008	LB223745	21 Apr 2021	23 Apr 2021	21 Apr 2022	03 May 2021	21 Apr 2022	03 May 2021
112-BH106M_0.2-0.3	SE218964.009	LB223745	21 Apr 2021	23 Apr 2021	21 Apr 2022	03 May 2021	21 Apr 2022	03 May 2021
112-BH106M_1.4-1.5	SE218964.010	LB223745	21 Apr 2021	23 Apr 2021	21 Apr 2022	03 May 2021	21 Apr 2022	03 May 2021
112-BH107_0.2-0.3	SE218964.011	LB223745	21 Apr 2021	23 Apr 2021	21 Apr 2022	03 May 2021	21 Apr 2022	03 May 2021
112-BH108_0.2-0.3	SE218964.012	LB223745	21 Apr 2021	23 Apr 2021	21 Apr 2022	03 May 2021	21 Apr 2022	03 May 2021
112-BH108_0.7-0.8	SE218964.013	LB223745	21 Apr 2021	23 Apr 2021	21 Apr 2022	03 May 2021	21 Apr 2022	03 May 2021
112-BH109_0.3-0.4	SE218964.014	LB223745	21 Apr 2021	23 Apr 2021	21 Apr 2022	03 May 2021	21 Apr 2022	03 May 2021
112-BH109_0.7-0.8	SE218964.015	LB223745	21 Apr 2021	23 Apr 2021	21 Apr 2022	03 May 2021	21 Apr 2022	03 May 2021
112-BH110M_0.2-0.3	SE218964.016	LB223745	21 Apr 2021	23 Apr 2021	21 Apr 2022	03 May 2021	21 Apr 2022	03 May 2021
112-BH111_0.2-0.3	SE218964.017	LB223745	22 Apr 2021	23 Apr 2021	22 Apr 2022	03 May 2021	22 Apr 2022	03 May 2021
112-BH111_0.6-0.7	SE218964.018	LB223745	22 Apr 2021	23 Apr 2021	22 Apr 2022	03 May 2021	22 Apr 2022	03 May 2021
112-BH112M_0.4-0.5	SE218964.019	LB223745	22 Apr 2021	23 Apr 2021	22 Apr 2022	03 May 2021	22 Apr 2022	03 May 2021
112-BH113M_0.2-0.3	SE218964.020	LB223745	22 Apr 2021	23 Apr 2021	22 Apr 2022	03 May 2021	22 Apr 2022	03 May 2021
32-BH101_0.1-0.2	SE218964.021	LB223745	22 Apr 2021	23 Apr 2021	22 Apr 2022	03 May 2021	22 Apr 2022	03 May 2021
32-BH102_0.2-0.3	SE218964.022	LB223745	22 Apr 2021	23 Apr 2021	22 Apr 2022	03 May 2021	22 Apr 2022	03 May 2021
2-BH103_0.3-0.4	SE218964.023	LB223745	22 Apr 2021	23 Apr 2021	22 Apr 2022	03 May 2021	22 Apr 2022	03 May 2021
2-BH103_0.9-1.0	SE218964.024	LB223745	22 Apr 2021	23 Apr 2021	22 Apr 2022	03 May 2021	22 Apr 2022	03 May 2021
32-BH104M_0.2-0.3	SE218964.025	LB223745	22 Apr 2021	23 Apr 2021	22 Apr 2022	03 May 2021	22 Apr 2022	03 May 2021
32-BH105_0.2-0.3	SE218964.026	LB223745	22 Apr 2021	23 Apr 2021	22 Apr 2022	03 May 2021	22 Apr 2022	03 May 2021
32-BH106_0.2-0.3	SE218964.027	LB223745	22 Apr 2021	23 Apr 2021	22 Apr 2022	03 May 2021	22 Apr 2022	03 May 2021
32-BH106_1.4-1.5	SE218964.028	LB223745	22 Apr 2021	23 Apr 2021	22 Apr 2022	03 May 2021	22 Apr 2022	03 May 2021
32-BH107M_0.2-0.3	SE218964.029	LB223745	22 Apr 2021	23 Apr 2021	22 Apr 2022	03 May 2021	22 Apr 2022	03 May 2021

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	SE218964.034	LB223386	22 Feb 2021	23 Apr 2021	22 Mar 2021	27 Apr 2021†	22 Mar 2021	27 Apr 2021†

Mercury in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
30-BH110M_2.2-2.3	SE218964.001	LB223707	21 Apr 2021	23 Apr 2021	19 May 2021	30 Apr 2021	19 May 2021	03 May 2021
30-BH111M_0.2-0.3	SE218964.002	LB223707	21 Apr 2021	23 Apr 2021	19 May 2021	30 Apr 2021	19 May 2021	03 May 2021
30-BH117_0.2-0.3	SE218964.003	LB223707	21 Apr 2021	23 Apr 2021	19 May 2021	30 Apr 2021	19 May 2021	03 May 2021
112-BH101_0.3-0.4	SE218964.004	LB223707	22 Apr 2021	23 Apr 2021	20 May 2021	30 Apr 2021	20 May 2021	03 May 2021
112-BH102_0.4-0.5	SE218964.005	LB223707	22 Apr 2021	23 Apr 2021	20 May 2021	30 Apr 2021	20 May 2021	03 May 2021
112-BH103_0.2-0.3	SE218964.006	LB223707	21 Apr 2021	23 Apr 2021	19 May 2021	30 Apr 2021	19 May 2021	03 May 2021
112-BH104_0.2-0.3	SE218964.007	LB223707	21 Apr 2021	23 Apr 2021	19 May 2021	30 Apr 2021	19 May 2021	03 May 2021
112-BH105_0.2-0.3	SE218964.008	LB223707	21 Apr 2021	23 Apr 2021	19 May 2021	30 Apr 2021	19 May 2021	03 May 2021
112-BH106M_0.2-0.3	SE218964.009	LB223707	21 Apr 2021	23 Apr 2021	19 May 2021	30 Apr 2021	19 May 2021	03 May 2021
112-BH106M_1.4-1.5	SE218964.010	LB223707	21 Apr 2021	23 Apr 2021	19 May 2021	30 Apr 2021	19 May 2021	03 May 2021
112-BH107_0.2-0.3	SE218964.011	LB223707	21 Apr 2021	23 Apr 2021	19 May 2021	30 Apr 2021	19 May 2021	03 May 2021
112-BH108_0.2-0.3	SE218964.012	LB223707	21 Apr 2021	23 Apr 2021	19 May 2021	30 Apr 2021	19 May 2021	03 May 2021
112-BH108_0.7-0.8	SE218964.013	LB223707	21 Apr 2021	23 Apr 2021	19 May 2021	30 Apr 2021	19 May 2021	03 May 2021
112-BH109_0.3-0.4	SE218964.014	LB223707	21 Apr 2021	23 Apr 2021	19 May 2021	30 Apr 2021	19 May 2021	03 May 2021
112-BH109_0.7-0.8	SE218964.015	LB223707	21 Apr 2021	23 Apr 2021	19 May 2021	30 Apr 2021	19 May 2021	03 May 2021
112-BH110M_0.2-0.3	SE218964.016	LB223707	21 Apr 2021	23 Apr 2021	19 May 2021	30 Apr 2021	19 May 2021	03 May 2021
112-BH111_0.2-0.3	SE218964.017	LB223707	22 Apr 2021	23 Apr 2021	20 May 2021	30 Apr 2021	20 May 2021	03 May 2021
112-BH111_0.6-0.7	SE218964.018	LB223707	22 Apr 2021	23 Apr 2021	20 May 2021	30 Apr 2021	20 May 2021	03 May 2021
112-BH112M_0.4-0.5	SE218964.019	LB223707	22 Apr 2021	23 Apr 2021	20 May 2021	30 Apr 2021	20 May 2021	03 May 2021
112-BH113M_0.2-0.3	SE218964.020	LB223708	22 Apr 2021	23 Apr 2021	20 May 2021	30 Apr 2021	20 May 2021	03 May 2021
32-BH101_0.1-0.2	SE218964.021	LB223708	22 Apr 2021	23 Apr 2021	20 May 2021	30 Apr 2021	20 May 2021	03 May 2021
32-BH102_0.2-0.3	SE218964.022	LB223708	22 Apr 2021	23 Apr 2021	20 May 2021	30 Apr 2021	20 May 2021	03 May 2021
2-BH103_0.3-0.4	SE218964.023	LB223708	22 Apr 2021	23 Apr 2021	20 May 2021	30 Apr 2021	20 May 2021	03 May 2021
2-BH103_0.9-1.0	SE218964.024	LB223708	22 Apr 2021	23 Apr 2021	20 May 2021	30 Apr 2021	20 May 2021	03 May 2021

HOLDING TIME SUMMARY

SE218964 R0

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

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

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

Mercury in Soil (continued)

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
32-BH104M_0.2-0.3	SE218964.025	LB223708	22 Apr 2021	23 Apr 2021	20 May 2021	30 Apr 2021	20 May 2021	03 May 2021
32-BH105_0.2-0.3	SE218964.026	LB223708	22 Apr 2021	23 Apr 2021	20 May 2021	30 Apr 2021	20 May 2021	03 May 2021
32-BH106_0.2-0.3	SE218964.027	LB223708	22 Apr 2021	23 Apr 2021	20 May 2021	30 Apr 2021	20 May 2021	03 May 2021
32-BH106_1.4-1.5	SE218964.028	LB223708	22 Apr 2021	23 Apr 2021	20 May 2021	30 Apr 2021	20 May 2021	03 May 2021
32-BH107M_0.2-0.3	SE218964.029	LB223708	22 Apr 2021	23 Apr 2021	20 May 2021	30 Apr 2021	20 May 2021	03 May 2021
QD1	SE218964.030	LB223708	20 Feb 2021	23 Apr 2021	20 Mar 2021	30 Apr 2021†	20 Mar 2021	03 May 2021†
QD2	SE218964.031	LB223708	22 Feb 2021	23 Apr 2021	22 Mar 2021	30 Apr 2021†	22 Mar 2021	03 May 2021†
QD3	SE218964.032	LB223708	22 Feb 2021	23 Apr 2021	22 Mar 2021	30 Apr 2021†	22 Mar 2021	03 May 2021†
QD4	SE218964.033	LB223708	22 Feb 2021	23 Apr 2021	22 Mar 2021	30 Apr 2021†	22 Mar 2021	03 May 2021†

Moisture Content

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
30-BH110M_2.2-2.3	SE218964.001	LB223672	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	04 May 2021	03 May 2021
30-BH111M_0.2-0.3	SE218964.002	LB223672	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	04 May 2021	03 May 2021
30-BH117_0.2-0.3	SE218964.003	LB223672	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	04 May 2021	03 May 2021
112-BH101_0.3-0.4	SE218964.004	LB223672	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	04 May 2021	03 May 2021
112-BH102_0.4-0.5	SE218964.005	LB223672	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	04 May 2021	03 May 2021
112-BH103_0.2-0.3	SE218964.006	LB223672	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	04 May 2021	03 May 2021
112-BH104_0.2-0.3	SE218964.007	LB223672	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	04 May 2021	03 May 2021
112-BH105_0.2-0.3	SE218964.008	LB223672	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	04 May 2021	03 May 2021
112-BH106M_0.2-0.3	SE218964.009	LB223672	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	04 May 2021	03 May 2021
112-BH106M_1.4-1.5	SE218964.010	LB223672	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	04 May 2021	03 May 2021
112-BH107_0.2-0.3	SE218964.011	LB223672	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	04 May 2021	03 May 2021
112-BH108_0.2-0.3	SE218964.012	LB223672	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	04 May 2021	03 May 2021
112-BH108_0.7-0.8	SE218964.013	LB223672	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	04 May 2021	03 May 2021
112-BH109_0.3-0.4	SE218964.014	LB223672	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	04 May 2021	03 May 2021
112-BH109_0.7-0.8	SE218964.015	LB223672	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	04 May 2021	03 May 2021
112-BH110M_0.2-0.3	SE218964.016	LB223672	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	04 May 2021	03 May 2021
112-BH111_0.2-0.3	SE218964.017	LB223672	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	04 May 2021	03 May 2021
112-BH111_0.6-0.7	SE218964.018	LB223672	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	04 May 2021	03 May 2021
112-BH112M_0.4-0.5	SE218964.019	LB223672	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	04 May 2021	03 May 2021
112-BH113M_0.2-0.3	SE218964.020	LB223672	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	04 May 2021	03 May 2021
32-BH101_0.1-0.2	SE218964.021	LB223673	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	04 May 2021	03 May 2021
32-BH102_0.2-0.3	SE218964.022	LB223673	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	04 May 2021	03 May 2021
2-BH103_0.3-0.4	SE218964.023	LB223673	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	04 May 2021	03 May 2021
2-BH103_0.9-1.0	SE218964.024	LB223673	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	04 May 2021	03 May 2021
32-BH104M_0.2-0.3	SE218964.025	LB223673	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	04 May 2021	03 May 2021
32-BH105_0.2-0.3	SE218964.026	LB223673	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	04 May 2021	03 May 2021
32-BH106_0.2-0.3	SE218964.027	LB223673	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	04 May 2021	03 May 2021
32-BH106_1.4-1.5	SE218964.028	LB223673	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	04 May 2021	03 May 2021
32-BH107M_0.2-0.3	SE218964.029	LB223673	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	04 May 2021	03 May 2021
QD1	SE218964.030	LB223673	20 Feb 2021	23 Apr 2021	06 Mar 2021	29 Apr 2021†	04 May 2021	03 May 2021
QD2	SE218964.031	LB223673	22 Feb 2021	23 Apr 2021	08 Mar 2021	29 Apr 2021†	04 May 2021	03 May 2021
QD3	SE218964.032	LB223673	22 Feb 2021	23 Apr 2021	08 Mar 2021	29 Apr 2021†	04 May 2021	03 May 2021
QD4	SE218964.033	LB223673	22 Feb 2021	23 Apr 2021	08 Mar 2021	29 Apr 2021†	04 May 2021	03 May 2021
QTB1	SE218964.035	LB223673	22 Feb 2021	23 Apr 2021	08 Mar 2021	29 Apr 2021†	04 May 2021	03 May 2021

OC Pesticides in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
30-BH110M_2.2-2.3	SE218964.001	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
30-BH111M_0.2-0.3	SE218964.002	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
30-BH117_0.2-0.3	SE218964.003	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH101_0.3-0.4	SE218964.004	LB223666	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH102_0.4-0.5	SE218964.005	LB223666	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH103_0.2-0.3	SE218964.006	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH104_0.2-0.3	SE218964.007	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH105_0.2-0.3	SE218964.008	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH106M_0.2-0.3	SE218964.009	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH106M_1.4-1.5	SE218964.010	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH107_0.2-0.3	SE218964.011	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH108_0.2-0.3	SE218964.012	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021

HOLDING TIME SUMMARY

SE218964 R0

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

OC Pesticides in Soil (continued)

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
112-BH108_0.7-0.8	SE218964.013	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH109_0.3-0.4	SE218964.014	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH109_0.7-0.8	SE218964.015	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH110M_0.2-0.3	SE218964.016	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH111_0.2-0.3	SE218964.017	LB223666	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH111_0.6-0.7	SE218964.018	LB223666	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH112M_0.4-0.5	SE218964.019	LB223666	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH113M_0.2-0.3	SE218964.020	LB223666	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
32-BH101_0.1-0.2	SE218964.021	LB223668	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
32-BH102_0.2-0.3	SE218964.022	LB223668	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
2-BH103_0.3-0.4	SE218964.023	LB223668	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
2-BH103_0.9-1.0	SE218964.024	LB223668	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
32-BH104M_0.2-0.3	SE218964.025	LB223668	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
32-BH105_0.2-0.3	SE218964.026	LB223668	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
32-BH106_0.2-0.3	SE218964.027	LB223668	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
32-BH106_1.4-1.5	SE218964.028	LB223668	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
32-BH107M_0.2-0.3	SE218964.029	LB223668	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
QD1	SE218964.030	LB223668	20 Feb 2021	23 Apr 2021	06 Mar 2021	29 Apr 2021†	08 Jun 2021	03 May 2021
QD2	SE218964.031	LB223668	22 Feb 2021	23 Apr 2021	08 Mar 2021	29 Apr 2021†	08 Jun 2021	03 May 2021
QD3	SE218964.032	LB223668	22 Feb 2021	23 Apr 2021	08 Mar 2021	29 Apr 2021†	08 Jun 2021	03 May 2021
QD4	SE218964.033	LB223668	22 Feb 2021	23 Apr 2021	08 Mar 2021	29 Apr 2021†	08 Jun 2021	03 May 2021

OP Pesticides in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
30-BH110M_2.2-2.3	SE218964.001	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
30-BH111M_0.2-0.3	SE218964.002	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
30-BH117_0.2-0.3	SE218964.003	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH101_0.3-0.4	SE218964.004	LB223666	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH102_0.4-0.5	SE218964.005	LB223666	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH103_0.2-0.3	SE218964.006	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH104_0.2-0.3	SE218964.007	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH105_0.2-0.3	SE218964.008	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH106M_0.2-0.3	SE218964.009	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH106M_1.4-1.5	SE218964.010	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH107_0.2-0.3	SE218964.011	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH108_0.2-0.3	SE218964.012	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH108_0.7-0.8	SE218964.013	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH109_0.3-0.4	SE218964.014	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH109_0.7-0.8	SE218964.015	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH110M_0.2-0.3	SE218964.016	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH111_0.2-0.3	SE218964.017	LB223666	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH111_0.6-0.7	SE218964.018	LB223666	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH112M_0.4-0.5	SE218964.019	LB223666	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH113M_0.2-0.3	SE218964.020	LB223666	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
32-BH101_0.1-0.2	SE218964.021	LB223668	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
32-BH102_0.2-0.3	SE218964.022	LB223668	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
2-BH103_0.3-0.4	SE218964.023	LB223668	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
2-BH103_0.9-1.0	SE218964.024	LB223668	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
32-BH104M_0.2-0.3	SE218964.025	LB223668	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
32-BH105_0.2-0.3	SE218964.026	LB223668	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
32-BH106_0.2-0.3	SE218964.027	LB223668	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
32-BH106_1.4-1.5	SE218964.028	LB223668	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
32-BH107M_0.2-0.3	SE218964.029	LB223668	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
QD1	SE218964.030	LB223668	20 Feb 2021	23 Apr 2021	06 Mar 2021	29 Apr 2021†	08 Jun 2021	03 May 2021
QD2	SE218964.031	LB223668	22 Feb 2021	23 Apr 2021	08 Mar 2021	29 Apr 2021†	08 Jun 2021	03 May 2021
QD3	SE218964.032	LB223668	22 Feb 2021	23 Apr 2021	08 Mar 2021	29 Apr 2021†	08 Jun 2021	03 May 2021
QD4	SE218964.033	LB223668	22 Feb 2021	23 Apr 2021	08 Mar 2021	29 Apr 2021†	08 Jun 2021	03 May 2021

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Sample Name	Sample No.	QC Ref

HOLDING TIME SUMMARY

SE218964 R0

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

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
30-BH110M_2.2-2.3	SE218964.001	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
30-BH111M_0.2-0.3	SE218964.002	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
30-BH117_0.2-0.3	SE218964.003	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH101_0.3-0.4	SE218964.004	LB223666	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH102_0.4-0.5	SE218964.005	LB223666	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH103_0.2-0.3	SE218964.006	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH104_0.2-0.3	SE218964.007	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH105_0.2-0.3	SE218964.008	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH106M_0.2-0.3	SE218964.009	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH106M_1.4-1.5	SE218964.010	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH107_0.2-0.3	SE218964.011	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH108_0.2-0.3	SE218964.012	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH108_0.7-0.8	SE218964.013	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH109_0.3-0.4	SE218964.014	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH109_0.7-0.8	SE218964.015	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH110M_0.2-0.3	SE218964.016	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH111_0.2-0.3	SE218964.017	LB223666	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH111_0.6-0.7	SE218964.018	LB223666	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH112M_0.4-0.5	SE218964.019	LB223666	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH113M_0.2-0.3	SE218964.020	LB223666	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
32-BH101_0.1-0.2	SE218964.021	LB223668	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
32-BH102_0.2-0.3	SE218964.022	LB223668	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
2-BH103_0.3-0.4	SE218964.023	LB223668	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
2-BH103_0.9-1.0	SE218964.024	LB223668	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
32-BH104M_0.2-0.3	SE218964.025	LB223668	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
32-BH105_0.2-0.3	SE218964.026	LB223668	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
32-BH106_0.2-0.3	SE218964.027	LB223668	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
32-BH106_1.4-1.5	SE218964.028	LB223668	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
32-BH107M_0.2-0.3	SE218964.029	LB223668	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
QD1	SE218964.030	LB223668	20 Feb 2021	23 Apr 2021	06 Mar 2021	29 Apr 2021†	08 Jun 2021	03 May 2021
QD2	SE218964.031	LB223668	22 Feb 2021	23 Apr 2021	08 Mar 2021	29 Apr 2021†	08 Jun 2021	03 May 2021
QD3	SE218964.032	LB223668	22 Feb 2021	23 Apr 2021	08 Mar 2021	29 Apr 2021†	08 Jun 2021	03 May 2021
QD4	SE218964.033	LB223668	22 Feb 2021	23 Apr 2021	08 Mar 2021	29 Apr 2021†	08 Jun 2021	03 May 2021

PCBs in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
30-BH110M_2.2-2.3	SE218964.001	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
30-BH111M_0.2-0.3	SE218964.002	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
30-BH117_0.2-0.3	SE218964.003	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH101_0.3-0.4	SE218964.004	LB223666	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH102_0.4-0.5	SE218964.005	LB223666	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH103_0.2-0.3	SE218964.006	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH104_0.2-0.3	SE218964.007	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH105_0.2-0.3	SE218964.008	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH106M_0.2-0.3	SE218964.009	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH106M_1.4-1.5	SE218964.010	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH107_0.2-0.3	SE218964.011	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH108_0.2-0.3	SE218964.012	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH108_0.7-0.8	SE218964.013	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH109_0.3-0.4	SE218964.014	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH109_0.7-0.8	SE218964.015	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH110M_0.2-0.3	SE218964.016	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH111_0.2-0.3	SE218964.017	LB223666	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH111_0.6-0.7	SE218964.018	LB223666	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH112M_0.4-0.5	SE218964.019	LB223666	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH113M_0.2-0.3	SE218964.020	LB223666	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
32-BH101_0.1-0.2	SE218964.021	LB223668	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
32-BH102_0.2-0.3	SE218964.022	LB223668	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
2-BH103_0.3-0.4	SE218964.023	LB223668	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
2-BH103_0.9-1.0	SE218964.024	LB223668	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021

HOLDING TIME SUMMARY

SE218964 R0

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

PCBs in Soil (continued)

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
32-BH104M_0.2-0.3	SE218964.025	LB223668	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
32-BH105_0.2-0.3	SE218964.026	LB223668	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
32-BH106_0.2-0.3	SE218964.027	LB223668	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
32-BH106_1.4-1.5	SE218964.028	LB223668	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
32-BH107M_0.2-0.3	SE218964.029	LB223668	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
QD1	SE218964.030	LB223668	20 Feb 2021	23 Apr 2021	06 Mar 2021	29 Apr 2021†	08 Jun 2021	03 May 2021
QD2	SE218964.031	LB223668	22 Feb 2021	23 Apr 2021	08 Mar 2021	29 Apr 2021†	08 Jun 2021	03 May 2021
QD3	SE218964.032	LB223668	22 Feb 2021	23 Apr 2021	08 Mar 2021	29 Apr 2021†	08 Jun 2021	03 May 2021
QD4	SE218964.033	LB223668	22 Feb 2021	23 Apr 2021	08 Mar 2021	29 Apr 2021†	08 Jun 2021	03 May 2021

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
30-BH110M_2.2-2.3	SE218964.001	LB223702	21 Apr 2021	23 Apr 2021	18 Oct 2021	30 Apr 2021	18 Oct 2021	03 May 2021
30-BH111M_0.2-0.3	SE218964.002	LB223702	21 Apr 2021	23 Apr 2021	18 Oct 2021	30 Apr 2021	18 Oct 2021	03 May 2021
30-BH117_0.2-0.3	SE218964.003	LB223702	21 Apr 2021	23 Apr 2021	18 Oct 2021	30 Apr 2021	18 Oct 2021	03 May 2021
112-BH101_0.3-0.4	SE218964.004	LB223702	22 Apr 2021	23 Apr 2021	19 Oct 2021	30 Apr 2021	19 Oct 2021	03 May 2021
112-BH102_0.4-0.5	SE218964.005	LB223702	22 Apr 2021	23 Apr 2021	19 Oct 2021	30 Apr 2021	19 Oct 2021	03 May 2021
112-BH103_0.2-0.3	SE218964.006	LB223702	21 Apr 2021	23 Apr 2021	18 Oct 2021	30 Apr 2021	18 Oct 2021	03 May 2021
112-BH104_0.2-0.3	SE218964.007	LB223702	21 Apr 2021	23 Apr 2021	18 Oct 2021	30 Apr 2021	18 Oct 2021	03 May 2021
112-BH105_0.2-0.3	SE218964.008	LB223702	21 Apr 2021	23 Apr 2021	18 Oct 2021	30 Apr 2021	18 Oct 2021	03 May 2021
112-BH106M_0.2-0.3	SE218964.009	LB223702	21 Apr 2021	23 Apr 2021	18 Oct 2021	30 Apr 2021	18 Oct 2021	03 May 2021
112-BH106M_1.4-1.5	SE218964.010	LB223702	21 Apr 2021	23 Apr 2021	18 Oct 2021	30 Apr 2021	18 Oct 2021	03 May 2021
112-BH107_0.2-0.3	SE218964.011	LB223702	21 Apr 2021	23 Apr 2021	18 Oct 2021	30 Apr 2021	18 Oct 2021	03 May 2021
112-BH108_0.2-0.3	SE218964.012	LB223702	21 Apr 2021	23 Apr 2021	18 Oct 2021	30 Apr 2021	18 Oct 2021	03 May 2021
112-BH108_0.7-0.8	SE218964.013	LB223702	21 Apr 2021	23 Apr 2021	18 Oct 2021	30 Apr 2021	18 Oct 2021	03 May 2021
112-BH109_0.3-0.4	SE218964.014	LB223702	21 Apr 2021	23 Apr 2021	18 Oct 2021	30 Apr 2021	18 Oct 2021	03 May 2021
112-BH109_0.7-0.8	SE218964.015	LB223702	21 Apr 2021	23 Apr 2021	18 Oct 2021	30 Apr 2021	18 Oct 2021	03 May 2021
112-BH110M_0.2-0.3	SE218964.016	LB223702	21 Apr 2021	23 Apr 2021	18 Oct 2021	30 Apr 2021	18 Oct 2021	03 May 2021
112-BH111_0.2-0.3	SE218964.017	LB223702	22 Apr 2021	23 Apr 2021	19 Oct 2021	30 Apr 2021	19 Oct 2021	03 May 2021
112-BH111_0.6-0.7	SE218964.018	LB223702	22 Apr 2021	23 Apr 2021	19 Oct 2021	30 Apr 2021	19 Oct 2021	03 May 2021
112-BH112M_0.4-0.5	SE218964.019	LB223702	22 Apr 2021	23 Apr 2021	19 Oct 2021	30 Apr 2021	19 Oct 2021	03 May 2021
112-BH113M_0.2-0.3	SE218964.020	LB223703	22 Apr 2021	23 Apr 2021	19 Oct 2021	30 Apr 2021	19 Oct 2021	03 May 2021
32-BH101_0.1-0.2	SE218964.021	LB223703	22 Apr 2021	23 Apr 2021	19 Oct 2021	30 Apr 2021	19 Oct 2021	03 May 2021
32-BH102_0.2-0.3	SE218964.022	LB223703	22 Apr 2021	23 Apr 2021	19 Oct 2021	30 Apr 2021	19 Oct 2021	03 May 2021
2-BH103_0.3-0.4	SE218964.023	LB223703	22 Apr 2021	23 Apr 2021	19 Oct 2021	30 Apr 2021	19 Oct 2021	03 May 2021
2-BH103_0.9-1.0	SE218964.024	LB223703	22 Apr 2021	23 Apr 2021	19 Oct 2021	30 Apr 2021	19 Oct 2021	03 May 2021
32-BH104M_0.2-0.3	SE218964.025	LB223703	22 Apr 2021	23 Apr 2021	19 Oct 2021	30 Apr 2021	19 Oct 2021	03 May 2021
32-BH105_0.2-0.3	SE218964.026	LB223703	22 Apr 2021	23 Apr 2021	19 Oct 2021	30 Apr 2021	19 Oct 2021	03 May 2021
32-BH106_0.2-0.3	SE218964.027	LB223703	22 Apr 2021	23 Apr 2021	19 Oct 2021	30 Apr 2021	19 Oct 2021	03 May 2021
32-BH106_1.4-1.5	SE218964.028	LB223703	22 Apr 2021	23 Apr 2021	19 Oct 2021	30 Apr 2021	19 Oct 2021	03 May 2021
32-BH107M_0.2-0.3	SE218964.029	LB223703	22 Apr 2021	23 Apr 2021	19 Oct 2021	30 Apr 2021	19 Oct 2021	03 May 2021
QD1	SE218964.030	LB223703	20 Feb 2021	23 Apr 2021	19 Aug 2021	30 Apr 2021	19 Aug 2021	03 May 2021
QD2	SE218964.031	LB223703	22 Feb 2021	23 Apr 2021	21 Aug 2021	30 Apr 2021	21 Aug 2021	03 May 2021
QD3	SE218964.032	LB223703	22 Feb 2021	23 Apr 2021	21 Aug 2021	30 Apr 2021	21 Aug 2021	03 May 2021
QD4	SE218964.033	LB223703	22 Feb 2021	23 Apr 2021	21 Aug 2021	30 Apr 2021	21 Aug 2021	03 May 2021

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	SE218964.034	LB223492	22 Feb 2021	23 Apr 2021	21 Aug 2021	28 Apr 2021	21 Aug 2021	28 Apr 2021

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
30-BH110M_2.2-2.3	SE218964.001	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
30-BH111M_0.2-0.3	SE218964.002	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
30-BH117_0.2-0.3	SE218964.003	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH101_0.3-0.4	SE218964.004	LB223666	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH102_0.4-0.5	SE218964.005	LB223666	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH103_0.2-0.3	SE218964.006	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH104_0.2-0.3	SE218964.007	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH105_0.2-0.3	SE218964.008	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021

HOLDING TIME SUMMARY

SE218964 R0

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

TRH (Total Recoverable Hydrocarbons) in Soil (continued)

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
112-BH106M_0.2-0.3	SE218964.009	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH106M_1.4-1.5	SE218964.010	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH107_0.2-0.3	SE218964.011	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH108_0.2-0.3	SE218964.012	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH108_0.7-0.8	SE218964.013	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH109_0.3-0.4	SE218964.014	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH109_0.7-0.8	SE218964.015	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH110M_0.2-0.3	SE218964.016	LB223666	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH111_0.2-0.3	SE218964.017	LB223666	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH111_0.6-0.7	SE218964.018	LB223666	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH112M_0.4-0.5	SE218964.019	LB223666	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH113M_0.2-0.3	SE218964.020	LB223666	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
32-BH101_0.1-0.2	SE218964.021	LB223668	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	04 May 2021
32-BH102_0.2-0.3	SE218964.022	LB223668	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	04 May 2021
2-BH103_0.3-0.4	SE218964.023	LB223668	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	04 May 2021
2-BH103_0.9-1.0	SE218964.024	LB223668	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	04 May 2021
32-BH104M_0.2-0.3	SE218964.025	LB223668	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	04 May 2021
32-BH105_0.2-0.3	SE218964.026	LB223668	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	04 May 2021
32-BH106_0.2-0.3	SE218964.027	LB223668	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	04 May 2021
32-BH106_1.4-1.5	SE218964.028	LB223668	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	04 May 2021
32-BH107M_0.2-0.3	SE218964.029	LB223668	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	04 May 2021
QD1	SE218964.030	LB223668	20 Feb 2021	23 Apr 2021	06 Mar 2021	29 Apr 2021†	08 Jun 2021	04 May 2021
QD2	SE218964.031	LB223668	22 Feb 2021	23 Apr 2021	08 Mar 2021	29 Apr 2021†	08 Jun 2021	04 May 2021
QD3	SE218964.032	LB223668	22 Feb 2021	23 Apr 2021	08 Mar 2021	29 Apr 2021†	08 Jun 2021	04 May 2021
QD4	SE218964.033	LB223668	22 Feb 2021	23 Apr 2021	08 Mar 2021	29 Apr 2021†	08 Jun 2021	04 May 2021

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	SE218964.034	LB223496	22 Feb 2021	23 Apr 2021	01 Mar 2021	28 Apr 2021†	07 Jun 2021	03 May 2021

VOC's in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
30-BH110M_2.2-2.3	SE218964.001	LB223669	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
30-BH111M_0.2-0.3	SE218964.002	LB223669	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
30-BH117_0.2-0.3	SE218964.003	LB223669	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH101_0.3-0.4	SE218964.004	LB223669	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH102_0.4-0.5	SE218964.005	LB223669	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH103_0.2-0.3	SE218964.006	LB223669	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH104_0.2-0.3	SE218964.007	LB223669	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH105_0.2-0.3	SE218964.008	LB223669	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH106M_0.2-0.3	SE218964.009	LB223669	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH106M_1.4-1.5	SE218964.010	LB223669	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH107_0.2-0.3	SE218964.011	LB223669	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH108_0.2-0.3	SE218964.012	LB223669	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH108_0.7-0.8	SE218964.013	LB223669	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH109_0.3-0.4	SE218964.014	LB223669	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH109_0.7-0.8	SE218964.015	LB223669	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH110M_0.2-0.3	SE218964.016	LB223669	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH111_0.2-0.3	SE218964.017	LB223669	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH111_0.6-0.7	SE218964.018	LB223669	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH112M_0.4-0.5	SE218964.019	LB223669	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH113M_0.2-0.3	SE218964.020	LB223669	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
32-BH101_0.1-0.2	SE218964.021	LB223671	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
32-BH102_0.2-0.3	SE218964.022	LB223671	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
2-BH103_0.3-0.4	SE218964.023	LB223671	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
2-BH103_0.9-1.0	SE218964.024	LB223671	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
32-BH104M_0.2-0.3	SE218964.025	LB223671	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
32-BH105_0.2-0.3	SE218964.026	LB223671	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
32-BH106_0.2-0.3	SE218964.027	LB223671	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
32-BH106_1.4-1.5	SE218964.028	LB223671	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021

HOLDING TIME SUMMARY

SE218964 R0

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

VOC's in Soil (continued)

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
32-BH107M_0.2-0.3	SE218964.029	LB223671	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
QD1	SE218964.030	LB223671	20 Feb 2021	23 Apr 2021	06 Mar 2021	29 Apr 2021†	08 Jun 2021	03 May 2021
QD2	SE218964.031	LB223671	22 Feb 2021	23 Apr 2021	08 Mar 2021	29 Apr 2021†	08 Jun 2021	03 May 2021
QD3	SE218964.032	LB223671	22 Feb 2021	23 Apr 2021	08 Mar 2021	29 Apr 2021†	08 Jun 2021	03 May 2021
QD4	SE218964.033	LB223671	22 Feb 2021	23 Apr 2021	08 Mar 2021	29 Apr 2021†	08 Jun 2021	03 May 2021
QTB1	SE218964.035	LB223671	22 Feb 2021	23 Apr 2021	08 Mar 2021	29 Apr 2021†	08 Jun 2021	03 May 2021
QTS1	SE218964.036	LB223671	22 Feb 2021	23 Apr 2021	08 Mar 2021	29 Apr 2021†	08 Jun 2021	03 May 2021

VOCs in Water

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QR1	SE218964.034	LB223620	22 Feb 2021	23 Apr 2021	01 Mar 2021	29 Apr 2021†	08 Jun 2021	30 Apr 2021

Volatile Petroleum Hydrocarbons in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
30-BH110M_2.2-2.3	SE218964.001	LB223669	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
30-BH111M_0.2-0.3	SE218964.002	LB223669	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
30-BH117_0.2-0.3	SE218964.003	LB223669	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH101_0.3-0.4	SE218964.004	LB223669	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH102_0.4-0.5	SE218964.005	LB223669	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH103_0.2-0.3	SE218964.006	LB223669	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH104_0.2-0.3	SE218964.007	LB223669	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH105_0.2-0.3	SE218964.008	LB223669	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH106M_0.2-0.3	SE218964.009	LB223669	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH106M_1.4-1.5	SE218964.010	LB223669	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH107_0.2-0.3	SE218964.011	LB223669	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH108_0.2-0.3	SE218964.012	LB223669	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH108_0.7-0.8	SE218964.013	LB223669	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH109_0.3-0.4	SE218964.014	LB223669	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH109_0.7-0.8	SE218964.015	LB223669	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH110M_0.2-0.3	SE218964.016	LB223669	21 Apr 2021	23 Apr 2021	05 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH111_0.2-0.3	SE218964.017	LB223669	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH111_0.6-0.7	SE218964.018	LB223669	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH112M_0.4-0.5	SE218964.019	LB223669	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
112-BH113M_0.2-0.3	SE218964.020	LB223669	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
32-BH101_0.1-0.2	SE218964.021	LB223671	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
32-BH102_0.2-0.3	SE218964.022	LB223671	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
2-BH103_0.3-0.4	SE218964.023	LB223671	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
2-BH103_0.9-1.0	SE218964.024	LB223671	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
32-BH104M_0.2-0.3	SE218964.025	LB223671	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
32-BH105_0.2-0.3	SE218964.026	LB223671	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
32-BH106_0.2-0.3	SE218964.027	LB223671	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
32-BH106_1.4-1.5	SE218964.028	LB223671	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
32-BH107M_0.2-0.3	SE218964.029	LB223671	22 Apr 2021	23 Apr 2021	06 May 2021	29 Apr 2021	08 Jun 2021	03 May 2021
QD1	SE218964.030	LB223671	20 Feb 2021	23 Apr 2021	06 Mar 2021	29 Apr 2021†	08 Jun 2021	03 May 2021
QD2	SE218964.031	LB223671	22 Feb 2021	23 Apr 2021	08 Mar 2021	29 Apr 2021†	08 Jun 2021	03 May 2021
QD3	SE218964.032	LB223671	22 Feb 2021	23 Apr 2021	08 Mar 2021	29 Apr 2021†	08 Jun 2021	03 May 2021
QD4	SE218964.033	LB223671	22 Feb 2021	23 Apr 2021	08 Mar 2021	29 Apr 2021†	08 Jun 2021	03 May 2021
QTB1	SE218964.035	LB223671	22 Feb 2021	23 Apr 2021	08 Mar 2021	29 Apr 2021†	08 Jun 2021	03 May 2021
QTS1	SE218964.036	LB223671	22 Feb 2021	23 Apr 2021	08 Mar 2021	29 Apr 2021†	08 Jun 2021	03 May 2021

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	SE218964.034	LB223620	22 Feb 2021	23 Apr 2021	01 Mar 2021	29 Apr 2021†	08 Jun 2021	30 Apr 2021

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)	112-BH102_0.4-0.5	SE218964.005	%	60 - 130%	105
	112-BH104_0.2-0.3	SE218964.007	%	60 - 130%	109
	112-BH105_0.2-0.3	SE218964.008	%	60 - 130%	109
	112-BH106M_0.2-0.3	SE218964.009	%	60 - 130%	108
	112-BH107_0.2-0.3	SE218964.011	%	60 - 130%	109
	112-BH109_0.3-0.4	SE218964.014	%	60 - 130%	103
	112-BH110M_0.2-0.3	SE218964.016	%	60 - 130%	105
	112-BH112M_0.4-0.5	SE218964.019	%	60 - 130%	107
	112-BH113M_0.2-0.3	SE218964.020	%	60 - 130%	117
	32-BH101_0.1-0.2	SE218964.021	%	60 - 130%	106
	32-BH102_0.2-0.3	SE218964.022	%	60 - 130%	104
	2-BH103_0.3-0.4	SE218964.023	%	60 - 130%	105
	32-BH104M_0.2-0.3	SE218964.025	%	60 - 130%	99
	32-BH105_0.2-0.3	SE218964.026	%	60 - 130%	109
	32-BH107M_0.2-0.3	SE218964.029	%	60 - 130%	102

OP Pesticides in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	112-BH102_0.4-0.5	SE218964.005	%	60 - 130%	85
	112-BH104_0.2-0.3	SE218964.007	%	60 - 130%	94
	112-BH105_0.2-0.3	SE218964.008	%	60 - 130%	86
	112-BH106M_0.2-0.3	SE218964.009	%	60 - 130%	87
	112-BH107_0.2-0.3	SE218964.011	%	60 - 130%	99
	112-BH109_0.3-0.4	SE218964.014	%	60 - 130%	89
	112-BH110M_0.2-0.3	SE218964.016	%	60 - 130%	97
	112-BH112M_0.4-0.5	SE218964.019	%	60 - 130%	93
	112-BH113M_0.2-0.3	SE218964.020	%	60 - 130%	85
	32-BH101_0.1-0.2	SE218964.021	%	60 - 130%	85
	32-BH102_0.2-0.3	SE218964.022	%	60 - 130%	96
	2-BH103_0.3-0.4	SE218964.023	%	60 - 130%	103
	32-BH104M_0.2-0.3	SE218964.025	%	60 - 130%	95
	32-BH105_0.2-0.3	SE218964.026	%	60 - 130%	100
	32-BH107M_0.2-0.3	SE218964.029	%	60 - 130%	84
d14-p-terphenyl (Surrogate)	112-BH102_0.4-0.5	SE218964.005	%	60 - 130%	100
	112-BH104_0.2-0.3	SE218964.007	%	60 - 130%	105
	112-BH105_0.2-0.3	SE218964.008	%	60 - 130%	99
	112-BH106M_0.2-0.3	SE218964.009	%	60 - 130%	106
	112-BH107_0.2-0.3	SE218964.011	%	60 - 130%	102
	112-BH109_0.3-0.4	SE218964.014	%	60 - 130%	114
	112-BH110M_0.2-0.3	SE218964.016	%	60 - 130%	114
	112-BH112M_0.4-0.5	SE218964.019	%	60 - 130%	104
	112-BH113M_0.2-0.3	SE218964.020	%	60 - 130%	110
	32-BH101_0.1-0.2	SE218964.021	%	60 - 130%	84
	32-BH102_0.2-0.3	SE218964.022	%	60 - 130%	98
	2-BH103_0.3-0.4	SE218964.023	%	60 - 130%	98
	32-BH104M_0.2-0.3	SE218964.025	%	60 - 130%	103
	32-BH105_0.2-0.3	SE218964.026	%	60 - 130%	94
	32-BH107M_0.2-0.3	SE218964.029	%	60 - 130%	89

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	30-BH110M_2.2-2.3	SE218964.001	%	70 - 130%	89
	30-BH111M_0.2-0.3	SE218964.002	%	70 - 130%	87
	30-BH117_0.2-0.3	SE218964.003	%	70 - 130%	85
	112-BH101_0.3-0.4	SE218964.004	%	70 - 130%	85
	112-BH102_0.4-0.5	SE218964.005	%	70 - 130%	85
	112-BH103_0.2-0.3	SE218964.006	%	70 - 130%	86
	112-BH104_0.2-0.3	SE218964.007	%	70 - 130%	94
	112-BH105_0.2-0.3	SE218964.008	%	70 - 130%	86
	112-BH106M_0.2-0.3	SE218964.009	%	70 - 130%	87
	112-BH106M_1.4-1.5	SE218964.010	%	70 - 130%	85
	112-BH107_0.2-0.3	SE218964.011	%	70 - 130%	99

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 Soil (continued) — **Method: ME-(AU)-[ENV]AN420**

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	112-BH108_0.2-0.3	SE218964.012	%	70 - 130%	87
	112-BH108_0.7-0.8	SE218964.013	%	70 - 130%	90
	112-BH109_0.3-0.4	SE218964.014	%	70 - 130%	89
	112-BH109_0.7-0.8	SE218964.015	%	70 - 130%	94
	112-BH110M_0.2-0.3	SE218964.016	%	70 - 130%	97
	112-BH111_0.2-0.3	SE218964.017	%	70 - 130%	85
	112-BH111_0.6-0.7	SE218964.018	%	70 - 130%	86
	112-BH112M_0.4-0.5	SE218964.019	%	70 - 130%	93
	112-BH113M_0.2-0.3	SE218964.020	%	70 - 130%	85
	32-BH101_0.1-0.2	SE218964.021	%	70 - 130%	85
	32-BH102_0.2-0.3	SE218964.022	%	70 - 130%	96
	2-BH103_0.3-0.4	SE218964.023	%	70 - 130%	103
	2-BH103_0.9-1.0	SE218964.024	%	70 - 130%	98
	32-BH104M_0.2-0.3	SE218964.025	%	70 - 130%	95
	32-BH105_0.2-0.3	SE218964.026	%	70 - 130%	100
	32-BH106_0.2-0.3	SE218964.027	%	70 - 130%	95
	32-BH106_1.4-1.5	SE218964.028	%	70 - 130%	89
	32-BH107M_0.2-0.3	SE218964.029	%	70 - 130%	84
	QD1	SE218964.030	%	70 - 130%	96
	QD2	SE218964.031	%	70 - 130%	96
	QD3	SE218964.032	%	70 - 130%	92
	QD4	SE218964.033	%	70 - 130%	94
d14-p-terphenyl (Surrogate)	30-BH110M_2.2-2.3	SE218964.001	%	70 - 130%	93
	30-BH111M_0.2-0.3	SE218964.002	%	70 - 130%	110
	30-BH117_0.2-0.3	SE218964.003	%	70 - 130%	105
	112-BH101_0.3-0.4	SE218964.004	%	70 - 130%	100
	112-BH102_0.4-0.5	SE218964.005	%	70 - 130%	100
	112-BH103_0.2-0.3	SE218964.006	%	70 - 130%	104
	112-BH104_0.2-0.3	SE218964.007	%	70 - 130%	105
	112-BH105_0.2-0.3	SE218964.008	%	70 - 130%	99
	112-BH106M_0.2-0.3	SE218964.009	%	70 - 130%	106
	112-BH106M_1.4-1.5	SE218964.010	%	70 - 130%	100
	112-BH107_0.2-0.3	SE218964.011	%	70 - 130%	102
	112-BH108_0.2-0.3	SE218964.012	%	70 - 130%	96
	112-BH108_0.7-0.8	SE218964.013	%	70 - 130%	110
	112-BH109_0.3-0.4	SE218964.014	%	70 - 130%	114
	112-BH109_0.7-0.8	SE218964.015	%	70 - 130%	108
	112-BH110M_0.2-0.3	SE218964.016	%	70 - 130%	114
	112-BH111_0.2-0.3	SE218964.017	%	70 - 130%	104
	112-BH111_0.6-0.7	SE218964.018	%	70 - 130%	98
	112-BH112M_0.4-0.5	SE218964.019	%	70 - 130%	104
	112-BH113M_0.2-0.3	SE218964.020	%	70 - 130%	110
	32-BH101_0.1-0.2	SE218964.021	%	70 - 130%	84
	32-BH102_0.2-0.3	SE218964.022	%	70 - 130%	98
	2-BH103_0.3-0.4	SE218964.023	%	70 - 130%	98
	2-BH103_0.9-1.0	SE218964.024	%	70 - 130%	99
	32-BH104M_0.2-0.3	SE218964.025	%	70 - 130%	103
	32-BH105_0.2-0.3	SE218964.026	%	70 - 130%	94
	32-BH106_0.2-0.3	SE218964.027	%	70 - 130%	102
	32-BH106_1.4-1.5	SE218964.028	%	70 - 130%	93
	32-BH107M_0.2-0.3	SE218964.029	%	70 - 130%	89
	QD1	SE218964.030	%	70 - 130%	96
	QD2	SE218964.031	%	70 - 130%	98
	QD3	SE218964.032	%	70 - 130%	89
	QD4	SE218964.033	%	70 - 130%	100
d5-nitrobenzene (Surrogate)	30-BH110M_2.2-2.3	SE218964.001	%	70 - 130%	96
	30-BH111M_0.2-0.3	SE218964.002	%	70 - 130%	106
	30-BH117_0.2-0.3	SE218964.003	%	70 - 130%	104
	112-BH101_0.3-0.4	SE218964.004	%	70 - 130%	105
	112-BH102_0.4-0.5	SE218964.005	%	70 - 130%	111
	112-BH103_0.2-0.3	SE218964.006	%	70 - 130%	102

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 Soil (continued)

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d5-nitrobenzene (Surrogate)	112-BH104_0.2-0.3	SE218964.007	%	70 - 130%	96
	112-BH105_0.2-0.3	SE218964.008	%	70 - 130%	102
	112-BH106M_0.2-0.3	SE218964.009	%	70 - 130%	104
	112-BH106M_1.4-1.5	SE218964.010	%	70 - 130%	97
	112-BH107_0.2-0.3	SE218964.011	%	70 - 130%	95
	112-BH108_0.2-0.3	SE218964.012	%	70 - 130%	92
	112-BH108_0.7-0.8	SE218964.013	%	70 - 130%	112
	112-BH109_0.3-0.4	SE218964.014	%	70 - 130%	101
	112-BH109_0.7-0.8	SE218964.015	%	70 - 130%	101
	112-BH110M_0.2-0.3	SE218964.016	%	70 - 130%	123
	112-BH111_0.2-0.3	SE218964.017	%	70 - 130%	102
	112-BH111_0.6-0.7	SE218964.018	%	70 - 130%	105
	112-BH112M_0.4-0.5	SE218964.019	%	70 - 130%	105
	112-BH113M_0.2-0.3	SE218964.020	%	70 - 130%	95
	32-BH101_0.1-0.2	SE218964.021	%	70 - 130%	93
	32-BH102_0.2-0.3	SE218964.022	%	70 - 130%	108
	2-BH103_0.3-0.4	SE218964.023	%	70 - 130%	110
	2-BH103_0.9-1.0	SE218964.024	%	70 - 130%	100
	32-BH104M_0.2-0.3	SE218964.025	%	70 - 130%	100
	32-BH105_0.2-0.3	SE218964.026	%	70 - 130%	96
	32-BH106_0.2-0.3	SE218964.027	%	70 - 130%	97
	32-BH106_1.4-1.5	SE218964.028	%	70 - 130%	89
	32-BH107M_0.2-0.3	SE218964.029	%	70 - 130%	90
	QD1	SE218964.030	%	70 - 130%	98
	QD2	SE218964.031	%	70 - 130%	98
	QD3	SE218964.032	%	70 - 130%	93
	QD4	SE218964.033	%	70 - 130%	98

PCBs in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	112-BH102_0.4-0.5	SE218964.005	%	60 - 130%	105
	112-BH104_0.2-0.3	SE218964.007	%	60 - 130%	109
	112-BH105_0.2-0.3	SE218964.008	%	60 - 130%	109
	112-BH106M_0.2-0.3	SE218964.009	%	60 - 130%	108
	112-BH107_0.2-0.3	SE218964.011	%	60 - 130%	109
	112-BH109_0.3-0.4	SE218964.014	%	60 - 130%	103
	112-BH110M_0.2-0.3	SE218964.016	%	60 - 130%	105
	112-BH112M_0.4-0.5	SE218964.019	%	60 - 130%	107
	112-BH113M_0.2-0.3	SE218964.020	%	60 - 130%	117
	32-BH101_0.1-0.2	SE218964.021	%	60 - 130%	106
	32-BH102_0.2-0.3	SE218964.022	%	60 - 130%	104
	2-BH103_0.3-0.4	SE218964.023	%	60 - 130%	105
	32-BH104M_0.2-0.3	SE218964.025	%	60 - 130%	99
	32-BH105_0.2-0.3	SE218964.026	%	60 - 130%	109
	32-BH107M_0.2-0.3	SE218964.029	%	60 - 130%	102

Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples

Method: MA-1523

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
(13C2_PFTeDA) Isotopically Labelled Internal Recovery Standard	112-BH102_0.4-0.5	SE218964.005	%	0 - 130%	45
	112-BH105_0.2-0.3	SE218964.008	%	0 - 130%	46
	112-BH106M_0.2-0.3	SE218964.009	%	0 - 130%	85
	112-BH109_0.3-0.4	SE218964.014	%	0 - 130%	47
	112-BH112M_0.4-0.5	SE218964.019	%	0 - 130%	62
	112-BH113M_0.2-0.3	SE218964.020	%	0 - 130%	25
	32-BH101_0.1-0.2	SE218964.021	%	0 - 130%	94
	32-BH104M_0.2-0.3	SE218964.025	%	0 - 130%	44
	32-BH107M_0.2-0.3	SE218964.029	%	0 - 130%	70
(13C2-4:2 FTS) Isotopically Labelled Internal Recovery Standard	112-BH102_0.4-0.5	SE218964.005	%	0 - 150%	77
	112-BH105_0.2-0.3	SE218964.008	%	0 - 150%	75
	112-BH106M_0.2-0.3	SE218964.009	%	0 - 150%	74
	112-BH109_0.3-0.4	SE218964.014	%	0 - 150%	72
	112-BH112M_0.4-0.5	SE218964.019	%	0 - 150%	84

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 Solid Samples (continued) **Method: MA-1523**

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
(13C2-4:2 FTS) Isotopically Labelled Internal Recovery Standard	112-BH113M_0.2-0.3	SE218964.020	%	0 - 150%	82
	32-BH101_0.1-0.2	SE218964.021	%	0 - 150%	76
	32-BH104M_0.2-0.3	SE218964.025	%	0 - 150%	78
	32-BH107M_0.2-0.3	SE218964.029	%	0 - 150%	73
(13C2-6:2 FTS) Isotopically Labelled Internal Recovery Standard	112-BH102_0.4-0.5	SE218964.005	%	0 - 150%	41
	112-BH105_0.2-0.3	SE218964.008	%	0 - 150%	37
	112-BH106M_0.2-0.3	SE218964.009	%	0 - 150%	39
	112-BH109_0.3-0.4	SE218964.014	%	0 - 150%	48
	112-BH112M_0.4-0.5	SE218964.019	%	0 - 150%	45
	112-BH113M_0.2-0.3	SE218964.020	%	0 - 150%	50
	32-BH101_0.1-0.2	SE218964.021	%	0 - 150%	40
	32-BH104M_0.2-0.3	SE218964.025	%	0 - 150%	38
	32-BH107M_0.2-0.3	SE218964.029	%	0 - 150%	37
(13C2-8:2 FTS) Isotopically Labelled Internal Recovery Standard	112-BH102_0.4-0.5	SE218964.005	%	0 - 150%	46
	112-BH105_0.2-0.3	SE218964.008	%	0 - 150%	48
	112-BH106M_0.2-0.3	SE218964.009	%	0 - 150%	50
	112-BH109_0.3-0.4	SE218964.014	%	0 - 150%	53
	112-BH112M_0.4-0.5	SE218964.019	%	0 - 150%	44
	112-BH113M_0.2-0.3	SE218964.020	%	0 - 150%	46
	32-BH101_0.1-0.2	SE218964.021	%	0 - 150%	48
	32-BH104M_0.2-0.3	SE218964.025	%	0 - 150%	44
	32-BH107M_0.2-0.3	SE218964.029	%	0 - 150%	48
(13C2-PFDoA) Isotopically Labelled Internal Recovery Standard	112-BH102_0.4-0.5	SE218964.005	%	0 - 150%	89
	112-BH105_0.2-0.3	SE218964.008	%	0 - 150%	81
	112-BH106M_0.2-0.3	SE218964.009	%	0 - 150%	105
	112-BH109_0.3-0.4	SE218964.014	%	0 - 150%	80
	112-BH112M_0.4-0.5	SE218964.019	%	0 - 150%	80
	112-BH113M_0.2-0.3	SE218964.020	%	0 - 150%	87
	32-BH101_0.1-0.2	SE218964.021	%	0 - 150%	99
	32-BH104M_0.2-0.3	SE218964.025	%	0 - 150%	78
	32-BH107M_0.2-0.3	SE218964.029	%	0 - 150%	98
(13C2-PFHxDA) Isotopically Labelled Internal Recovery Standard	112-BH102_0.4-0.5	SE218964.005	%	0 - 150%	19
	112-BH105_0.2-0.3	SE218964.008	%	0 - 150%	18
	112-BH106M_0.2-0.3	SE218964.009	%	0 - 150%	46
	112-BH109_0.3-0.4	SE218964.014	%	0 - 150%	16
	112-BH112M_0.4-0.5	SE218964.019	%	0 - 150%	19
	112-BH113M_0.2-0.3	SE218964.020	%	0 - 150%	9
	32-BH101_0.1-0.2	SE218964.021	%	0 - 150%	42
	32-BH104M_0.2-0.3	SE218964.025	%	0 - 150%	14
	32-BH107M_0.2-0.3	SE218964.029	%	0 - 150%	26
(13C3-PFBS) Isotopically Labelled Internal Recovery Standard	112-BH102_0.4-0.5	SE218964.005	%	0 - 150%	111
	112-BH105_0.2-0.3	SE218964.008	%	0 - 150%	113
	112-BH106M_0.2-0.3	SE218964.009	%	0 - 150%	105
	112-BH109_0.3-0.4	SE218964.014	%	0 - 150%	95
	112-BH112M_0.4-0.5	SE218964.019	%	0 - 150%	124
	112-BH113M_0.2-0.3	SE218964.020	%	0 - 150%	113
	32-BH101_0.1-0.2	SE218964.021	%	0 - 150%	109
	32-BH104M_0.2-0.3	SE218964.025	%	0 - 150%	111
	32-BH107M_0.2-0.3	SE218964.029	%	0 - 150%	105
(13C3-PFHxS) Isotopically Labelled Internal Recovery Standard	112-BH102_0.4-0.5	SE218964.005	%	0 - 150%	97
	112-BH105_0.2-0.3	SE218964.008	%	0 - 150%	103
	112-BH106M_0.2-0.3	SE218964.009	%	0 - 150%	96
	112-BH109_0.3-0.4	SE218964.014	%	0 - 150%	95
	112-BH112M_0.4-0.5	SE218964.019	%	0 - 150%	90
	112-BH113M_0.2-0.3	SE218964.020	%	0 - 150%	96
	32-BH101_0.1-0.2	SE218964.021	%	0 - 150%	95
	32-BH104M_0.2-0.3	SE218964.025	%	0 - 150%	105
	32-BH107M_0.2-0.3	SE218964.029	%	0 - 150%	101
(13C4_PFOA) Isotopically Labelled Internal Recovery Standard	112-BH102_0.4-0.5	SE218964.005	%	0 - 150%	121
	112-BH105_0.2-0.3	SE218964.008	%	0 - 150%	114
	112-BH106M_0.2-0.3	SE218964.009	%	0 - 150%	113

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 Solid Samples (continued) — **Method: MA-1523**

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
(13C4_PFOA) Isotopically Labelled Internal Recovery Standard	112-BH109_0.3-0.4	SE218964.014	%	0 - 150%	112
	112-BH112M_0.4-0.5	SE218964.019	%	0 - 150%	113
	112-BH113M_0.2-0.3	SE218964.020	%	0 - 150%	125
	32-BH101_0.1-0.2	SE218964.021	%	0 - 150%	123
	32-BH104M_0.2-0.3	SE218964.025	%	0 - 150%	106
	32-BH107M_0.2-0.3	SE218964.029	%	0 - 150%	114
(13C4-PFBA) Isotopically Labelled Internal Recovery Standard	112-BH102_0.4-0.5	SE218964.005	%	0 - 150%	101
	112-BH105_0.2-0.3	SE218964.008	%	0 - 150%	100
	112-BH106M_0.2-0.3	SE218964.009	%	0 - 150%	100
	112-BH109_0.3-0.4	SE218964.014	%	0 - 150%	107
	112-BH112M_0.4-0.5	SE218964.019	%	0 - 150%	103
	112-BH113M_0.2-0.3	SE218964.020	%	0 - 150%	100
	32-BH101_0.1-0.2	SE218964.021	%	0 - 150%	101
	32-BH104M_0.2-0.3	SE218964.025	%	0 - 150%	102
	32-BH107M_0.2-0.3	SE218964.029	%	0 - 150%	100
(13C4-PFHpA) Isotopically Labelled Internal Recovery Standard	112-BH102_0.4-0.5	SE218964.005	%	0 - 150%	121
	112-BH105_0.2-0.3	SE218964.008	%	0 - 150%	113
	112-BH106M_0.2-0.3	SE218964.009	%	0 - 150%	103
	112-BH109_0.3-0.4	SE218964.014	%	0 - 150%	102
	112-BH112M_0.4-0.5	SE218964.019	%	0 - 150%	125
	112-BH113M_0.2-0.3	SE218964.020	%	0 - 150%	119
	32-BH101_0.1-0.2	SE218964.021	%	0 - 150%	119
	32-BH104M_0.2-0.3	SE218964.025	%	0 - 150%	105
	32-BH107M_0.2-0.3	SE218964.029	%	0 - 150%	105
(13C5-PFHxA) Isotopically Labelled Internal Recovery Standard	112-BH102_0.4-0.5	SE218964.005	%	0 - 150%	153 †
	112-BH105_0.2-0.3	SE218964.008	%	0 - 150%	144
	112-BH106M_0.2-0.3	SE218964.009	%	0 - 150%	131
	112-BH109_0.3-0.4	SE218964.014	%	0 - 150%	126
	112-BH112M_0.4-0.5	SE218964.019	%	0 - 150%	161 †
	112-BH113M_0.2-0.3	SE218964.020	%	0 - 150%	144
	32-BH101_0.1-0.2	SE218964.021	%	0 - 150%	145
	32-BH104M_0.2-0.3	SE218964.025	%	0 - 150%	129
	32-BH107M_0.2-0.3	SE218964.029	%	0 - 150%	133
(13C5-PFPeA) Isotopically Labelled Internal Recovery Standard	112-BH102_0.4-0.5	SE218964.005	%	0 - 150%	94
	112-BH105_0.2-0.3	SE218964.008	%	0 - 150%	93
	112-BH106M_0.2-0.3	SE218964.009	%	0 - 150%	92
	112-BH109_0.3-0.4	SE218964.014	%	0 - 150%	102
	112-BH112M_0.4-0.5	SE218964.019	%	0 - 150%	94
	112-BH113M_0.2-0.3	SE218964.020	%	0 - 150%	96
	32-BH101_0.1-0.2	SE218964.021	%	0 - 150%	93
	32-BH104M_0.2-0.3	SE218964.025	%	0 - 150%	93
	32-BH107M_0.2-0.3	SE218964.029	%	0 - 150%	92
(13C6-PFDA) Isotopically Labelled Internal Recovery Standard	112-BH102_0.4-0.5	SE218964.005	%	0 - 150%	110
	112-BH105_0.2-0.3	SE218964.008	%	0 - 150%	91
	112-BH106M_0.2-0.3	SE218964.009	%	0 - 150%	99
	112-BH109_0.3-0.4	SE218964.014	%	0 - 150%	94
	112-BH112M_0.4-0.5	SE218964.019	%	0 - 150%	77
	112-BH113M_0.2-0.3	SE218964.020	%	0 - 150%	93
	32-BH101_0.1-0.2	SE218964.021	%	0 - 150%	84
	32-BH104M_0.2-0.3	SE218964.025	%	0 - 150%	95
	32-BH107M_0.2-0.3	SE218964.029	%	0 - 150%	87
(13C7-PFUdA) Isotopically Labelled Internal Recovery Standard	112-BH102_0.4-0.5	SE218964.005	%	0 - 150%	82
	112-BH105_0.2-0.3	SE218964.008	%	0 - 150%	78
	112-BH106M_0.2-0.3	SE218964.009	%	0 - 150%	101
	112-BH109_0.3-0.4	SE218964.014	%	0 - 150%	80
	112-BH112M_0.4-0.5	SE218964.019	%	0 - 150%	68
	112-BH113M_0.2-0.3	SE218964.020	%	0 - 150%	93
	32-BH101_0.1-0.2	SE218964.021	%	0 - 150%	88
	32-BH104M_0.2-0.3	SE218964.025	%	0 - 150%	82
	32-BH107M_0.2-0.3	SE218964.029	%	0 - 150%	88
(13C8-PFOS) Isotopically Labelled Internal Recovery Standard	112-BH102_0.4-0.5	SE218964.005	%	0 - 150%	92

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 Solid Samples (continued) **Method: MA-1523**

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
(13C8-PFOS) Isotopically Labelled Internal Recovery Standard	112-BH105_0.2-0.3	SE218964.008	%	0 - 150%	99
	112-BH106M_0.2-0.3	SE218964.009	%	0 - 150%	98
	112-BH109_0.3-0.4	SE218964.014	%	0 - 150%	123
	112-BH112M_0.4-0.5	SE218964.019	%	0 - 150%	103
	112-BH113M_0.2-0.3	SE218964.020	%	0 - 150%	121
	32-BH101_0.1-0.2	SE218964.021	%	0 - 150%	110
	32-BH104M_0.2-0.3	SE218964.025	%	0 - 150%	109
	32-BH107M_0.2-0.3	SE218964.029	%	0 - 150%	97
(13C8-PFOSA) Isotopically Labelled Internal Recovery Standard	112-BH102_0.4-0.5	SE218964.005	%	0 - 150%	79
	112-BH105_0.2-0.3	SE218964.008	%	0 - 150%	83
	112-BH106M_0.2-0.3	SE218964.009	%	0 - 150%	98
	112-BH109_0.3-0.4	SE218964.014	%	0 - 150%	67
	112-BH112M_0.4-0.5	SE218964.019	%	0 - 150%	115
	112-BH113M_0.2-0.3	SE218964.020	%	0 - 150%	107
	32-BH101_0.1-0.2	SE218964.021	%	0 - 150%	83
	32-BH104M_0.2-0.3	SE218964.025	%	0 - 150%	68
	32-BH107M_0.2-0.3	SE218964.029	%	0 - 150%	84
(13C9-PFNA) Isotopically Labelled Internal Recovery Standard	112-BH102_0.4-0.5	SE218964.005	%	0 - 150%	111
	112-BH105_0.2-0.3	SE218964.008	%	0 - 150%	106
	112-BH106M_0.2-0.3	SE218964.009	%	0 - 150%	101
	112-BH109_0.3-0.4	SE218964.014	%	0 - 150%	111
	112-BH112M_0.4-0.5	SE218964.019	%	0 - 150%	108
	112-BH113M_0.2-0.3	SE218964.020	%	0 - 150%	120
	32-BH101_0.1-0.2	SE218964.021	%	0 - 150%	103
	32-BH104M_0.2-0.3	SE218964.025	%	0 - 150%	96
	32-BH107M_0.2-0.3	SE218964.029	%	0 - 150%	112
(D3-N-MeFOSA) Isotopically Labelled Internal Recovery Standard	112-BH102_0.4-0.5	SE218964.005	%	0 - 150%	59
	112-BH105_0.2-0.3	SE218964.008	%	0 - 150%	51
	112-BH106M_0.2-0.3	SE218964.009	%	0 - 150%	65
	112-BH109_0.3-0.4	SE218964.014	%	0 - 150%	48
	112-BH112M_0.4-0.5	SE218964.019	%	0 - 150%	84
	112-BH113M_0.2-0.3	SE218964.020	%	0 - 150%	42
	32-BH101_0.1-0.2	SE218964.021	%	0 - 150%	69
	32-BH104M_0.2-0.3	SE218964.025	%	0 - 150%	39
	32-BH107M_0.2-0.3	SE218964.029	%	0 - 150%	65
(D3-N-MeFOSAA) Isotopically Labelled Internal Recovery Standard	112-BH102_0.4-0.5	SE218964.005	%	0 - 150%	60
	112-BH105_0.2-0.3	SE218964.008	%	0 - 150%	50
	112-BH106M_0.2-0.3	SE218964.009	%	0 - 150%	69
	112-BH109_0.3-0.4	SE218964.014	%	0 - 150%	50
	112-BH112M_0.4-0.5	SE218964.019	%	0 - 150%	71
	112-BH113M_0.2-0.3	SE218964.020	%	0 - 150%	62
	32-BH101_0.1-0.2	SE218964.021	%	0 - 150%	65
	32-BH104M_0.2-0.3	SE218964.025	%	0 - 150%	53
	32-BH107M_0.2-0.3	SE218964.029	%	0 - 150%	59
(D5-N-EtFOSA) Isotopically Labelled Internal Recovery Standard	112-BH102_0.4-0.5	SE218964.005	%	0 - 150%	44
	112-BH105_0.2-0.3	SE218964.008	%	0 - 150%	40
	112-BH106M_0.2-0.3	SE218964.009	%	0 - 150%	57
	112-BH109_0.3-0.4	SE218964.014	%	0 - 150%	36
	112-BH112M_0.4-0.5	SE218964.019	%	0 - 150%	60
	112-BH113M_0.2-0.3	SE218964.020	%	0 - 150%	28
	32-BH101_0.1-0.2	SE218964.021	%	0 - 150%	55
	32-BH104M_0.2-0.3	SE218964.025	%	0 - 150%	26
	32-BH107M_0.2-0.3	SE218964.029	%	0 - 150%	52
(D5-N-EtFOSAA) Isotopically Labelled Internal Recovery Standard	112-BH102_0.4-0.5	SE218964.005	%	0 - 150%	46
	112-BH105_0.2-0.3	SE218964.008	%	0 - 150%	49
	112-BH106M_0.2-0.3	SE218964.009	%	0 - 150%	61
	112-BH109_0.3-0.4	SE218964.014	%	0 - 150%	41
	112-BH112M_0.4-0.5	SE218964.019	%	0 - 150%	41
	112-BH113M_0.2-0.3	SE218964.020	%	0 - 150%	44
	32-BH101_0.1-0.2	SE218964.021	%	0 - 150%	60
	32-BH104M_0.2-0.3	SE218964.025	%	0 - 150%	47

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 Solid Samples (continued)

Method: MA-1523

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
(D5-N-EtFOSAA) Isotopically Labelled Internal Recovery Standard	32-BH107M_0.2-0.3	SE218964.029	%	0 - 150%	53
(D7-N-MeFOSE) Isotopically Labelled Internal Recovery Standard	112-BH102_0.4-0.5	SE218964.005	%	0 - 150%	83
	112-BH105_0.2-0.3	SE218964.008	%	0 - 150%	71
	112-BH106M_0.2-0.3	SE218964.009	%	0 - 150%	96
	112-BH109_0.3-0.4	SE218964.014	%	0 - 150%	74
	112-BH112M_0.4-0.5	SE218964.019	%	0 - 150%	114
	112-BH113M_0.2-0.3	SE218964.020	%	0 - 150%	91
	32-BH101_0.1-0.2	SE218964.021	%	0 - 150%	84
	32-BH104M_0.2-0.3	SE218964.025	%	0 - 150%	65
	32-BH107M_0.2-0.3	SE218964.029	%	0 - 150%	85
(D9-N-EtFOSE) Isotopically Labelled Internal Recovery Standard	112-BH102_0.4-0.5	SE218964.005	%	0 - 150%	63
	112-BH105_0.2-0.3	SE218964.008	%	0 - 150%	51
	112-BH106M_0.2-0.3	SE218964.009	%	0 - 150%	82
	112-BH109_0.3-0.4	SE218964.014	%	0 - 150%	59
	112-BH112M_0.4-0.5	SE218964.019	%	0 - 150%	89
	112-BH113M_0.2-0.3	SE218964.020	%	0 - 150%	74
	32-BH101_0.1-0.2	SE218964.021	%	0 - 150%	73
	32-BH104M_0.2-0.3	SE218964.025	%	0 - 150%	48
	32-BH107M_0.2-0.3	SE218964.029	%	0 - 150%	71

VOC's in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	30-BH110M_2.2-2.3	SE218964.001	%	60 - 130%	64
	30-BH111M_0.2-0.3	SE218964.002	%	60 - 130%	71
	30-BH117_0.2-0.3	SE218964.003	%	60 - 130%	71
	112-BH101_0.3-0.4	SE218964.004	%	60 - 130%	66
	112-BH102_0.4-0.5	SE218964.005	%	60 - 130%	67
	112-BH103_0.2-0.3	SE218964.006	%	60 - 130%	68
	112-BH104_0.2-0.3	SE218964.007	%	60 - 130%	69
	112-BH105_0.2-0.3	SE218964.008	%	60 - 130%	68
	112-BH106M_0.2-0.3	SE218964.009	%	60 - 130%	69
	112-BH106M_1.4-1.5	SE218964.010	%	60 - 130%	67
	112-BH107_0.2-0.3	SE218964.011	%	60 - 130%	57 ①
	112-BH108_0.2-0.3	SE218964.012	%	60 - 130%	69
	112-BH108_0.7-0.8	SE218964.013	%	60 - 130%	64
	112-BH109_0.3-0.4	SE218964.014	%	60 - 130%	66
	112-BH109_0.7-0.8	SE218964.015	%	60 - 130%	69
	112-BH110M_0.2-0.3	SE218964.016	%	60 - 130%	63
	112-BH111_0.2-0.3	SE218964.017	%	60 - 130%	66
	112-BH111_0.6-0.7	SE218964.018	%	60 - 130%	67
	112-BH112M_0.4-0.5	SE218964.019	%	60 - 130%	65
	112-BH113M_0.2-0.3	SE218964.020	%	60 - 130%	67
	32-BH101_0.1-0.2	SE218964.021	%	60 - 130%	106
	32-BH102_0.2-0.3	SE218964.022	%	60 - 130%	107
	2-BH103_0.3-0.4	SE218964.023	%	60 - 130%	111
	2-BH103_0.9-1.0	SE218964.024	%	60 - 130%	104
	32-BH104M_0.2-0.3	SE218964.025	%	60 - 130%	105
	32-BH105_0.2-0.3	SE218964.026	%	60 - 130%	97
	32-BH106_0.2-0.3	SE218964.027	%	60 - 130%	97
	32-BH106_1.4-1.5	SE218964.028	%	60 - 130%	102
	32-BH107M_0.2-0.3	SE218964.029	%	60 - 130%	104
	QD1	SE218964.030	%	60 - 130%	103
	QD2	SE218964.031	%	60 - 130%	97
	QD3	SE218964.032	%	60 - 130%	107
	QD4	SE218964.033	%	60 - 130%	103
	QTB1	SE218964.035	%	60 - 130%	108
	QTS1	SE218964.036	%	60 - 130%	102
d4-1,2-dichloroethane (Surrogate)	30-BH110M_2.2-2.3	SE218964.001	%	60 - 130%	79
	30-BH111M_0.2-0.3	SE218964.002	%	60 - 130%	89
	30-BH117_0.2-0.3	SE218964.003	%	60 - 130%	90
	112-BH101_0.3-0.4	SE218964.004	%	60 - 130%	84

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.

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d4-1,2-dichloroethane (Surrogate)	112-BH102_0.4-0.5	SE218964.005	%	60 - 130%	86
	112-BH103_0.2-0.3	SE218964.006	%	60 - 130%	88
	112-BH104_0.2-0.3	SE218964.007	%	60 - 130%	90
	112-BH105_0.2-0.3	SE218964.008	%	60 - 130%	88
	112-BH106M_0.2-0.3	SE218964.009	%	60 - 130%	90
	112-BH106M_1.4-1.5	SE218964.010	%	60 - 130%	90
	112-BH107_0.2-0.3	SE218964.011	%	60 - 130%	75
	112-BH108_0.2-0.3	SE218964.012	%	60 - 130%	90
	112-BH108_0.7-0.8	SE218964.013	%	60 - 130%	83
	112-BH109_0.3-0.4	SE218964.014	%	60 - 130%	86
	112-BH109_0.7-0.8	SE218964.015	%	60 - 130%	91
	112-BH110M_0.2-0.3	SE218964.016	%	60 - 130%	79
	112-BH111_0.2-0.3	SE218964.017	%	60 - 130%	86
	112-BH111_0.6-0.7	SE218964.018	%	60 - 130%	85
	112-BH112M_0.4-0.5	SE218964.019	%	60 - 130%	85
	112-BH113M_0.2-0.3	SE218964.020	%	60 - 130%	87
	32-BH101_0.1-0.2	SE218964.021	%	60 - 130%	109
	32-BH102_0.2-0.3	SE218964.022	%	60 - 130%	110
	2-BH103_0.3-0.4	SE218964.023	%	60 - 130%	113
	2-BH103_0.9-1.0	SE218964.024	%	60 - 130%	106
	32-BH104M_0.2-0.3	SE218964.025	%	60 - 130%	109
	32-BH105_0.2-0.3	SE218964.026	%	60 - 130%	105
	32-BH106_0.2-0.3	SE218964.027	%	60 - 130%	99
	32-BH106_1.4-1.5	SE218964.028	%	60 - 130%	107
	32-BH107M_0.2-0.3	SE218964.029	%	60 - 130%	110
	QD1	SE218964.030	%	60 - 130%	109
	QD2	SE218964.031	%	60 - 130%	102
	QD3	SE218964.032	%	60 - 130%	109
	QD4	SE218964.033	%	60 - 130%	109
	QTB1	SE218964.035	%	60 - 130%	112
	QTS1	SE218964.036	%	60 - 130%	108
d8-toluene (Surrogate)	30-BH110M_2.2-2.3	SE218964.001	%	60 - 130%	83
	30-BH111M_0.2-0.3	SE218964.002	%	60 - 130%	95
	30-BH117_0.2-0.3	SE218964.003	%	60 - 130%	97
	112-BH101_0.3-0.4	SE218964.004	%	60 - 130%	90
	112-BH102_0.4-0.5	SE218964.005	%	60 - 130%	91
	112-BH103_0.2-0.3	SE218964.006	%	60 - 130%	94
	112-BH104_0.2-0.3	SE218964.007	%	60 - 130%	94
	112-BH105_0.2-0.3	SE218964.008	%	60 - 130%	94
	112-BH106M_0.2-0.3	SE218964.009	%	60 - 130%	96
	112-BH106M_1.4-1.5	SE218964.010	%	60 - 130%	95
	112-BH107_0.2-0.3	SE218964.011	%	60 - 130%	78
	112-BH108_0.2-0.3	SE218964.012	%	60 - 130%	95
	112-BH108_0.7-0.8	SE218964.013	%	60 - 130%	88
	112-BH109_0.3-0.4	SE218964.014	%	60 - 130%	91
	112-BH109_0.7-0.8	SE218964.015	%	60 - 130%	97
	112-BH110M_0.2-0.3	SE218964.016	%	60 - 130%	84
	112-BH111_0.2-0.3	SE218964.017	%	60 - 130%	92
	112-BH111_0.6-0.7	SE218964.018	%	60 - 130%	90
	112-BH112M_0.4-0.5	SE218964.019	%	60 - 130%	91
	112-BH113M_0.2-0.3	SE218964.020	%	60 - 130%	93
	32-BH101_0.1-0.2	SE218964.021	%	60 - 130%	109
	32-BH102_0.2-0.3	SE218964.022	%	60 - 130%	111
	2-BH103_0.3-0.4	SE218964.023	%	60 - 130%	113
	2-BH103_0.9-1.0	SE218964.024	%	60 - 130%	107
	32-BH104M_0.2-0.3	SE218964.025	%	60 - 130%	109
	32-BH105_0.2-0.3	SE218964.026	%	60 - 130%	104
	32-BH106_0.2-0.3	SE218964.027	%	60 - 130%	99
	32-BH106_1.4-1.5	SE218964.028	%	60 - 130%	106
	32-BH107M_0.2-0.3	SE218964.029	%	60 - 130%	108
	QD1	SE218964.030	%	60 - 130%	109

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.

VOC's in Soil (continued)

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d8-toluene (Surrogate)	QD2	SE218964.031	%	60 - 130%	103
	QD3	SE218964.032	%	60 - 130%	110
	QD4	SE218964.033	%	60 - 130%	108
	QTB1	SE218964.035	%	60 - 130%	114
	QTS1	SE218964.036	%	60 - 130%	107

VOCs in Water

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	QR1	SE218964.034	%	40 - 130%	103
d4-1,2-dichloroethane (Surrogate)	QR1	SE218964.034	%	40 - 130%	108
d8-toluene (Surrogate)	QR1	SE218964.034	%	40 - 130%	100

Volatile Petroleum Hydrocarbons in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	30-BH110M_2.2-2.3	SE218964.001	%	60 - 130%	64
	30-BH111M_0.2-0.3	SE218964.002	%	60 - 130%	71
	30-BH117_0.2-0.3	SE218964.003	%	60 - 130%	71
	112-BH101_0.3-0.4	SE218964.004	%	60 - 130%	66
	112-BH102_0.4-0.5	SE218964.005	%	60 - 130%	67
	112-BH103_0.2-0.3	SE218964.006	%	60 - 130%	68
	112-BH104_0.2-0.3	SE218964.007	%	60 - 130%	69
	112-BH105_0.2-0.3	SE218964.008	%	60 - 130%	68
	112-BH106M_0.2-0.3	SE218964.009	%	60 - 130%	69
	112-BH106M_1.4-1.5	SE218964.010	%	60 - 130%	67
	112-BH107_0.2-0.3	SE218964.011	%	60 - 130%	57 ⓘ
	112-BH108_0.2-0.3	SE218964.012	%	60 - 130%	69
	112-BH108_0.7-0.8	SE218964.013	%	60 - 130%	64
	112-BH109_0.3-0.4	SE218964.014	%	60 - 130%	66
	112-BH109_0.7-0.8	SE218964.015	%	60 - 130%	69
	112-BH110M_0.2-0.3	SE218964.016	%	60 - 130%	63
	112-BH111_0.2-0.3	SE218964.017	%	60 - 130%	66
	112-BH111_0.6-0.7	SE218964.018	%	60 - 130%	67
	112-BH112M_0.4-0.5	SE218964.019	%	60 - 130%	65
	112-BH113M_0.2-0.3	SE218964.020	%	60 - 130%	67
	32-BH101_0.1-0.2	SE218964.021	%	60 - 130%	106
	32-BH102_0.2-0.3	SE218964.022	%	60 - 130%	107
	2-BH103_0.3-0.4	SE218964.023	%	60 - 130%	111
	2-BH103_0.9-1.0	SE218964.024	%	60 - 130%	104
	32-BH104M_0.2-0.3	SE218964.025	%	60 - 130%	105
	32-BH105_0.2-0.3	SE218964.026	%	60 - 130%	97
	32-BH106_0.2-0.3	SE218964.027	%	60 - 130%	97
	32-BH106_1.4-1.5	SE218964.028	%	60 - 130%	102
	32-BH107M_0.2-0.3	SE218964.029	%	60 - 130%	104
	QD1	SE218964.030	%	60 - 130%	103
	QD2	SE218964.031	%	60 - 130%	97
	QD3	SE218964.032	%	60 - 130%	107
	QD4	SE218964.033	%	60 - 130%	103
d4-1,2-dichloroethane (Surrogate)	30-BH110M_2.2-2.3	SE218964.001	%	60 - 130%	79
	30-BH111M_0.2-0.3	SE218964.002	%	60 - 130%	89
	30-BH117_0.2-0.3	SE218964.003	%	60 - 130%	90
	112-BH101_0.3-0.4	SE218964.004	%	60 - 130%	84
	112-BH102_0.4-0.5	SE218964.005	%	60 - 130%	86
	112-BH103_0.2-0.3	SE218964.006	%	60 - 130%	88
	112-BH104_0.2-0.3	SE218964.007	%	60 - 130%	90
	112-BH105_0.2-0.3	SE218964.008	%	60 - 130%	88
	112-BH106M_0.2-0.3	SE218964.009	%	60 - 130%	90
	112-BH106M_1.4-1.5	SE218964.010	%	60 - 130%	90
	112-BH107_0.2-0.3	SE218964.011	%	60 - 130%	75
	112-BH108_0.2-0.3	SE218964.012	%	60 - 130%	90
	112-BH108_0.7-0.8	SE218964.013	%	60 - 130%	83
	112-BH109_0.3-0.4	SE218964.014	%	60 - 130%	86
	112-BH109_0.7-0.8	SE218964.015	%	60 - 130%	91

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.

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d4-1,2-dichloroethane (Surrogate)	112-BH110M_0.2-0.3	SE218964.016	%	60 - 130%	79
	112-BH111_0.2-0.3	SE218964.017	%	60 - 130%	86
	112-BH111_0.6-0.7	SE218964.018	%	60 - 130%	85
	112-BH112M_0.4-0.5	SE218964.019	%	60 - 130%	85
	112-BH113M_0.2-0.3	SE218964.020	%	60 - 130%	87
	32-BH101_0.1-0.2	SE218964.021	%	60 - 130%	109
	32-BH102_0.2-0.3	SE218964.022	%	60 - 130%	110
	2-BH103_0.3-0.4	SE218964.023	%	60 - 130%	113
	2-BH103_0.9-1.0	SE218964.024	%	60 - 130%	106
	32-BH104M_0.2-0.3	SE218964.025	%	60 - 130%	109
	32-BH105_0.2-0.3	SE218964.026	%	60 - 130%	105
	32-BH106_0.2-0.3	SE218964.027	%	60 - 130%	99
	32-BH106_1.4-1.5	SE218964.028	%	60 - 130%	107
	32-BH107M_0.2-0.3	SE218964.029	%	60 - 130%	110
	QD1	SE218964.030	%	60 - 130%	109
	QD2	SE218964.031	%	60 - 130%	102
	QD3	SE218964.032	%	60 - 130%	109
	QD4	SE218964.033	%	60 - 130%	109
d8-toluene (Surrogate)	30-BH110M_2.2-2.3	SE218964.001	%	60 - 130%	83
	30-BH111M_0.2-0.3	SE218964.002	%	60 - 130%	95
	30-BH117_0.2-0.3	SE218964.003	%	60 - 130%	97
	112-BH101_0.3-0.4	SE218964.004	%	60 - 130%	90
	112-BH102_0.4-0.5	SE218964.005	%	60 - 130%	91
	112-BH103_0.2-0.3	SE218964.006	%	60 - 130%	94
	112-BH104_0.2-0.3	SE218964.007	%	60 - 130%	94
	112-BH105_0.2-0.3	SE218964.008	%	60 - 130%	94
	112-BH106M_0.2-0.3	SE218964.009	%	60 - 130%	96
	112-BH106M_1.4-1.5	SE218964.010	%	60 - 130%	95
	112-BH107_0.2-0.3	SE218964.011	%	60 - 130%	78
	112-BH108_0.2-0.3	SE218964.012	%	60 - 130%	95
	112-BH108_0.7-0.8	SE218964.013	%	60 - 130%	88
	112-BH109_0.3-0.4	SE218964.014	%	60 - 130%	91
	112-BH109_0.7-0.8	SE218964.015	%	60 - 130%	97
	112-BH110M_0.2-0.3	SE218964.016	%	60 - 130%	84
	112-BH111_0.2-0.3	SE218964.017	%	60 - 130%	92
	112-BH111_0.6-0.7	SE218964.018	%	60 - 130%	90
	112-BH112M_0.4-0.5	SE218964.019	%	60 - 130%	91
	112-BH113M_0.2-0.3	SE218964.020	%	60 - 130%	93
	32-BH101_0.1-0.2	SE218964.021	%	60 - 130%	109
	32-BH102_0.2-0.3	SE218964.022	%	60 - 130%	111
	2-BH103_0.3-0.4	SE218964.023	%	60 - 130%	113
	2-BH103_0.9-1.0	SE218964.024	%	60 - 130%	107
	32-BH104M_0.2-0.3	SE218964.025	%	60 - 130%	109
	32-BH105_0.2-0.3	SE218964.026	%	60 - 130%	104
	32-BH106_0.2-0.3	SE218964.027	%	60 - 130%	99
	32-BH106_1.4-1.5	SE218964.028	%	60 - 130%	106
	32-BH107M_0.2-0.3	SE218964.029	%	60 - 130%	108
	QD1	SE218964.030	%	60 - 130%	109
	QD2	SE218964.031	%	60 - 130%	103
	QD3	SE218964.032	%	60 - 130%	110
	QD4	SE218964.033	%	60 - 130%	108

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	QR1	SE218964.034	%	40 - 130%	103
d4-1,2-dichloroethane (Surrogate)	QR1	SE218964.034	%	60 - 130%	108
d8-toluene (Surrogate)	QR1	SE218964.034	%	40 - 130%	100

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
LB223386.001	Mercury	mg/L	0.0001	<0.0001

Mercury in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB223707.001	Mercury	mg/kg	0.05	<0.05
LB223708.001	Mercury	mg/kg	0.05	<0.05

OC Pesticides in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB223666.001		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
		Alpha BHC	mg/kg	0.1	<0.1
		Lindane	mg/kg	0.1	<0.1
		Heptachlor	mg/kg	0.1	<0.1
		Aldrin	mg/kg	0.1	<0.1
		Beta BHC	mg/kg	0.1	<0.1
		Delta BHC	mg/kg	0.1	<0.1
		Heptachlor epoxide	mg/kg	0.1	<0.1
		Alpha Endosulfan	mg/kg	0.2	<0.2
		Gamma Chlordane	mg/kg	0.1	<0.1
		Alpha Chlordane	mg/kg	0.1	<0.1
		p,p'-DDE	mg/kg	0.1	<0.1
		Dieldrin	mg/kg	0.2	<0.2
		Endrin	mg/kg	0.2	<0.2
		Beta Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDD	mg/kg	0.1	<0.1
		p,p'-DDT	mg/kg	0.1	<0.1
		Endosulfan sulphate	mg/kg	0.1	<0.1
		Endrin Aldehyde	mg/kg	0.1	<0.1
		Methoxychlor	mg/kg	0.1	<0.1
		Endrin Ketone	mg/kg	0.1	<0.1
		Isodrin	mg/kg	0.1	<0.1
		Mirex	mg/kg	0.1	<0.1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	103
LB223668.001		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
		Alpha BHC	mg/kg	0.1	<0.1
		Lindane	mg/kg	0.1	<0.1
		Heptachlor	mg/kg	0.1	<0.1
		Aldrin	mg/kg	0.1	<0.1
		Beta BHC	mg/kg	0.1	<0.1
		Delta BHC	mg/kg	0.1	<0.1
		Heptachlor epoxide	mg/kg	0.1	<0.1
		Alpha Endosulfan	mg/kg	0.2	<0.2
		Gamma Chlordane	mg/kg	0.1	<0.1
		Alpha Chlordane	mg/kg	0.1	<0.1
		p,p'-DDE	mg/kg	0.1	<0.1
		Dieldrin	mg/kg	0.2	<0.2
		Endrin	mg/kg	0.2	<0.2
		Beta Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDD	mg/kg	0.1	<0.1
		p,p'-DDT	mg/kg	0.1	<0.1
		Endosulfan sulphate	mg/kg	0.1	<0.1
		Endrin Aldehyde	mg/kg	0.1	<0.1
		Methoxychlor	mg/kg	0.1	<0.1
		Endrin Ketone	mg/kg	0.1	<0.1
		Isodrin	mg/kg	0.1	<0.1
		Mirex	mg/kg	0.1	<0.1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	101

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.

OP Pesticides in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB223666.001		Dichlorvos	mg/kg	0.5	<0.5
		Dimethoate	mg/kg	0.5	<0.5
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5
		Fenitrothion	mg/kg	0.2	<0.2
		Malathion	mg/kg	0.2	<0.2
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2
		Bromophos Ethyl	mg/kg	0.2	<0.2
		Methidathion	mg/kg	0.5	<0.5
		Ethion	mg/kg	0.2	<0.2
		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2
	Surrogates	2-fluorobiphenyl (Surrogate)	%	-	99
		d14-p-terphenyl (Surrogate)	%	-	115
LB223668.001		Dichlorvos	mg/kg	0.5	<0.5
		Dimethoate	mg/kg	0.5	<0.5
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5
		Fenitrothion	mg/kg	0.2	<0.2
		Malathion	mg/kg	0.2	<0.2
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2
		Bromophos Ethyl	mg/kg	0.2	<0.2
		Methidathion	mg/kg	0.5	<0.5
		Ethion	mg/kg	0.2	<0.2
		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2
	Surrogates	2-fluorobiphenyl (Surrogate)	%	-	102
		d14-p-terphenyl (Surrogate)	%	-	98

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB223666.001		Naphthalene	mg/kg	0.1	<0.1
		2-methylnaphthalene	mg/kg	0.1	<0.1
		1-methylnaphthalene	mg/kg	0.1	<0.1
		Acenaphthylene	mg/kg	0.1	<0.1
		Acenaphthene	mg/kg	0.1	<0.1
		Fluorene	mg/kg	0.1	<0.1
		Phenanthrene	mg/kg	0.1	<0.1
		Anthracene	mg/kg	0.1	<0.1
		Fluoranthene	mg/kg	0.1	<0.1
		Pyrene	mg/kg	0.1	<0.1
		Benzo(a)anthracene	mg/kg	0.1	<0.1
		Chrysene	mg/kg	0.1	<0.1
		Benzo(a)pyrene	mg/kg	0.1	<0.1
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1
		Benzo(ghi)perylene	mg/kg	0.1	<0.1
		Total PAH (18)	mg/kg	0.8	<0.8
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	115
		2-fluorobiphenyl (Surrogate)	%	-	99
		d14-p-terphenyl (Surrogate)	%	-	115
LB223668.001		Naphthalene	mg/kg	0.1	<0.1
		2-methylnaphthalene	mg/kg	0.1	<0.1
		1-methylnaphthalene	mg/kg	0.1	<0.1
		Acenaphthylene	mg/kg	0.1	<0.1
		Acenaphthene	mg/kg	0.1	<0.1
		Fluorene	mg/kg	0.1	<0.1
		Phenanthrene	mg/kg	0.1	<0.1
		Anthracene	mg/kg	0.1	<0.1
		Fluoranthene	mg/kg	0.1	<0.1
		Pyrene	mg/kg	0.1	<0.1
		Benzo(a)anthracene	mg/kg	0.1	<0.1
		Chrysene	mg/kg	0.1	<0.1

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
LB223668.001		Benzo(a)pyrene	mg/kg	0.1	<0.1
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1
		Benzo(ghi)perylene	mg/kg	0.1	<0.1
		Total PAH (18)	mg/kg	0.8	<0.8
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	108
		2-fluorobiphenyl (Surrogate)	%	-	102
		d14-p-terphenyl (Surrogate)	%	-	98

PCBs in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB223666.001		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	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	103
LB223668.001		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	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	101

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

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

Sample Number	Parameter	Units	LOR	Result
LB223702.001	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
LB223703.001	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
LB223492.001	Arsenic, As	µg/L	1	<1
	Cadmium, Cd	µg/L	0.1	<0.1
	Chromium, Cr	µg/L	1	<1
	Copper, Cu	µg/L	1	<1
	Lead, Pb	µg/L	1	<1
	Nickel, Ni	µg/L	1	<1
	Zinc, Zn	µg/L	5	<5

TRH (Total Recoverable Hydrocarbons) in Soil

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

Sample Number	Parameter	Units	LOR

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TRH (Total Recoverable Hydrocarbons) in Soil (continued)

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

Sample Number	Parameter	Units	LOR	Result
LB223666.001	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
LB223668.001	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
LB223496.001	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
LB223669.001	Monocyclic Aromatic	Benzene	mg/kg	0.1	<0.1
	Hydrocarbons	Toluene	mg/kg	0.1	<0.1
		Ethylbenzene	mg/kg	0.1	<0.1
		m/p-xylene	mg/kg	0.2	<0.2
		o-xylene	mg/kg	0.1	<0.1
	Polycyclic VOCs	Naphthalene	mg/kg	0.1	<0.1
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	92
		d8-toluene (Surrogate)	%	-	97
		Bromofluorobenzene (Surrogate)	%	-	72
	Totals	Total BTEX	mg/kg	0.6	<0.6
LB223671.001	Monocyclic Aromatic	Benzene	mg/kg	0.1	<0.1
	Hydrocarbons	Toluene	mg/kg	0.1	<0.1
		Ethylbenzene	mg/kg	0.1	<0.1
		m/p-xylene	mg/kg	0.2	<0.2
		o-xylene	mg/kg	0.1	<0.1
	Polycyclic VOCs	Naphthalene	mg/kg	0.1	<0.1
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	115
		d8-toluene (Surrogate)	%	-	116
		Bromofluorobenzene (Surrogate)	%	-	112
	Totals	Total BTEX	mg/kg	0.6	<0.6

VOCs in Water

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

Sample Number		Parameter	Units	LOR	Result
LB223620.001	Monocyclic Aromatic	Benzene	µg/L	0.5	<0.5
	Hydrocarbons	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	µg/L	0.5	<0.5
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	96
		d8-toluene (Surrogate)	%	-	93
		Bromofluorobenzene (Surrogate)	%	-	99

Volatile Petroleum Hydrocarbons in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB223669.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	92
LB223671.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	115

Volatile Petroleum Hydrocarbons in Water

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

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.

Volatile Petroleum Hydrocarbons in Water (continued)

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

Sample Number		Parameter	Units	LOR	Result
LB223620.001		TRH C6-C9	µg/L	40	<40
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	96
		d8-toluene (Surrogate)	%	-	93
		Bromofluorobenzene (Surrogate)	%	-	99

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

Mercury (dissolved) in Water

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE218956.003	LB223386.014	Mercury	µg/L	0.0001	<0.0001	<0.0001	200	0
SE218964.034	LB223386.018	Mercury	µg/L	0.0001	<0.0001	<0.0001	200	102

Mercury in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE218964.010	LB223707.014	Mercury	mg/kg	0.05	<0.05	<0.05	190	0
SE218964.019	LB223707.024	Mercury	mg/kg	0.05	0.13	0.08	77	46
SE218964.024	LB223708.014	Mercury	mg/kg	0.05	0.07	0.09	93	14
SE218964.027	LB223708.018	Mercury	mg/kg	0.05	4.7	5.0	31	5
SE218964.033	LB223708.025	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 %
SE218964.010	LB223672.011	% Moisture	%w/w	1	15.6	15.8	36	1
SE218964.020	LB223672.022	% Moisture	%w/w	1	13.9	14.0	37	1
SE218964.030	LB223673.011	% Moisture	%w/w	1	13.4	14.7	37	9
SE218972.004	LB223673.020	% Moisture	%w/w	1	13.5	12.4	38	9

OC Pesticides in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE218964.009	LB223666.028		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane	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
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDE	mg/kg	0.1	<0.1	<0.1	171	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	171	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
			trans-Nonachlor	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
			o,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin Ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.16	0.18	30	12
SE218972.001	LB223668.024		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane	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
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDE	mg/kg	0.1	<0.1	<0.1	162	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	162	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

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

OC Pesticides in Soil (continued)

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE218972.001	LB223668.024		trans-Nonachlor	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	174	0
			Endrin	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	166	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin Ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
			Total CLP OC Pesticides	mg/kg	1	<1	<1	185	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.16	0.17	30	1

OP Pesticides in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE218964.020	LB223666.025		Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
			Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
			Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
			Malathion	mg/kg	0.2	<0.2	<0.2	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
			Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
			Ethion	mg/kg	0.2	<0.2	<0.2	200	0
			Azinphos-methyl (Guthion)	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	0.5	30	12
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.6	30	3
SE218972.001	LB223668.026		Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
			Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
			Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
			Malathion	mg/kg	0.2	<0.2	<0.2	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
			Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
			Ethion	mg/kg	0.2	<0.2	<0.2	200	0
			Azinphos-methyl (Guthion)	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	-	0.5	0.5	30	4
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	6

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE218964.009	LB223666.027	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
		Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
		Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
		Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
		Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
		Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
		Pyrene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0

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

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE218964.009	LB223666.027		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	mg/kg	0.3	<0.3	<0.3	134	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	mg/kg	0.2	<0.2	<0.2	175	0
			Total PAH (18)	mg/kg	0.8	<0.8	<0.8	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	3
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	30	11
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	6
SE218964.020	LB223666.025		Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
			Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	<0.1	<0.1	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	mg/kg	0.3	<0.3	<0.3	134	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	mg/kg	0.2	<0.2	<0.2	175	0
			Total PAH (18)	mg/kg	0.8	<0.8	<0.8	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	10
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	30	12
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.6	30	3
SE218964.030	LB223668.014		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	163	4
			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	0.2	0.6	56	92 ②
			Anthracene	mg/kg	0.1	<0.1	0.2	120	47
			Fluoranthene	mg/kg	0.1	0.5	1.1	43	78 ②
			Pyrene	mg/kg	0.1	0.5	1.2	42	76 ②
			Benzo(a)anthracene	mg/kg	0.1	0.2	0.5	57	71 ②
			Chrysene	mg/kg	0.1	0.3	0.6	54	63 ②
			Benzo(b&j)fluoranthene	mg/kg	0.1	0.3	0.6	53	58 ②
			Benzo(k)fluoranthene	mg/kg	0.1	0.2	0.3	66	47
			Benzo(a)pyrene	mg/kg	0.1	0.3	0.5	56	59 ②
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.2	0.4	64	45
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	0.2	0.4	64	61
			Carcinogenic PAHs, BaP TEQ <LOR=0	mg/kg	0.2	0.4	0.7	48	58 ②
			Carcinogenic PAHs, BaP TEQ <LOR=LOR	mg/kg	0.3	0.5	0.8	58	49
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	mg/kg	0.2	0.4	0.7	45	53 ②
			Total PAH (18)	mg/kg	0.8	3.0	6.3	47	72 ②

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

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE218964.030	LB223668.014	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	2
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	2
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	0
SE218972.001	LB223668.026		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	0.2	<0.1	99	74
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	0.4	0.3	60	49
			Pyrene	mg/kg	0.1	0.5	0.3	55	49
			Benzo(a)anthracene	mg/kg	0.1	0.2	0.1	93	44
			Chrysene	mg/kg	0.1	0.3	0.2	75	47
			Benzo(b&j)fluoranthene	mg/kg	0.1	0.3	0.2	69	30
			Benzo(k)fluoranthene	mg/kg	0.1	0.2	0.1	96	60
			Benzo(a)pyrene	mg/kg	0.1	0.2	0.2	78	37
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.2	0.2	81	43
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	0.2	0.1	85	41
			Carcinogenic PAHs, BaP TEQ <LOR=0	mg/kg	0.2	0.3	0.2	80	38
			Carcinogenic PAHs, BaP TEQ <LOR=LOR	mg/kg	0.3	0.4	0.3	88	28
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	mg/kg	0.2	0.4	0.3	70	33
			Total PAH (18)	mg/kg	0.8	2.8	1.6	66	52
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	1
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	4
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	6

PCBs in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE218964.009	LB223666.028		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	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0	0	30	12
SE218972.001	LB223668.024		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	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0	0	30	1

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 %
SE218964.010	LB223702.014	Arsenic, As	mg/kg	1	10	8	41	20
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.5	15	13	34	14
		Copper, Cu	mg/kg	0.5	23	17	33	27
		Nickel, Ni	mg/kg	0.5	5.3	5.5	39	4
		Lead, Pb	mg/kg	1	57	44	32	26

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

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE218964.010	LB223702.014		Zinc, Zn	mg/kg	2	46	47	34	2
SE218964.019	LB223702.024		Arsenic, As	mg/kg	1	7	7	44	10
			Cadmium, Cd	mg/kg	0.3	0.3	<0.3	152	2
			Chromium, Cr	mg/kg	0.5	23	16	33	37 ②
			Copper, Cu	mg/kg	0.5	31	25	32	20
			Nickel, Ni	mg/kg	0.5	38	10	32	115 ②
			Lead, Pb	mg/kg	1	31	31	33	1
			Zinc, Zn	mg/kg	2	210	160	31	28
SE218964.024	LB223703.014		Arsenic, As	mg/kg	1	11	12	38	8
			Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
			Chromium, Cr	mg/kg	0.5	18	19	33	5
			Copper, Cu	mg/kg	0.5	23	23	32	2
			Nickel, Ni	mg/kg	0.5	8.0	9.9	36	21
			Lead, Pb	mg/kg	1	30	36	33	21
			Zinc, Zn	mg/kg	2	39	41	35	5
SE218964.033	LB223703.024		Arsenic, As	mg/kg	1	2	2	78	21
			Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
			Chromium, Cr	mg/kg	0.5	9.7	8.0	36	19
			Copper, Cu	mg/kg	0.5	53	46	31	13
			Nickel, Ni	mg/kg	0.5	53	52	31	1
			Lead, Pb	mg/kg	1	2	2	80	13
			Zinc, Zn	mg/kg	2	34	35	36	1

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE218964.009	LB223666.027		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
SE218964.020	LB223666.025		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
SE218964.030	LB223668.014		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	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
SE218972.001	LB223668.024		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

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

TRH (Total Recoverable Hydrocarbons) in Soil (continued)

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE218972.001	LB223668.024	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
SE218972.004	LB223668.022		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

VOC's in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE218964.010	LB223669.014	Monocyclic Aromatic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
			Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.0	8.2	50	9
			d8-toluene (Surrogate)	mg/kg	-	9.5	8.7	50	9
			Bromofluorobenzene (Surrogate)	mg/kg	-	6.7	6.2	50	8
		Totals	Total Xylenes	mg/kg	0.3	<0.3	<0.3	200	0
			Total BTEX	mg/kg	0.6	<0.6	<0.6	200	0
SE218964.020	LB223669.025	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	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.7	8.5	50	2
			d8-toluene (Surrogate)	mg/kg	-	9.3	9.0	50	4
			Bromofluorobenzene (Surrogate)	mg/kg	-	6.7	6.4	50	4
		Totals	Total Xylenes	mg/kg	0.3	<0.3	<0.3	200	0
			Total BTEX	mg/kg	0.6	<0.6	<0.6	200	0
SE218964.030	LB223671.014	Monocyclic Aromatic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
			Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	10.9	10.5	50	4
			d8-toluene (Surrogate)	mg/kg	-	10.9	10.3	50	6
			Bromofluorobenzene (Surrogate)	mg/kg	-	10.3	10.1	50	2
		Totals	Total Xylenes	mg/kg	0.3	<0.3	<0.3	200	0
			Total BTEX	mg/kg	0.6	<0.6	<0.6	200	0
SE218972.004	LB223671.024	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	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	11.0	10.8	50	2
			d8-toluene (Surrogate)	mg/kg	-	10.9	10.7	50	2
			Bromofluorobenzene (Surrogate)	mg/kg	-	10.3	10.3	50	0
		Totals	Total Xylenes	mg/kg	0.3	<0.3	<0.3	200	0
			Total BTEX	mg/kg	0.6	<0.6	<0.6	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

VOCs in Water

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE218964.034	LB223620.025	Monocyclic	Benzene	µg/L	0.5	<0.5	<0.5	200	0
		Aromatic	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	µg/L	0.5	<0.5	<0.5	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	10.8	10.1	30	7
			d8-toluene (Surrogate)	µg/L	-	10.0	9.9	30	0
			Bromofluorobenzene (Surrogate)	µg/L	-	10.3	9.7	30	5
SE219026.002	LB223620.024	Monocyclic	Benzene	µg/L	0.5	<0.5	<0.5	200	0
		Aromatic	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	µg/L	0.5	<0.5	<0.5	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	11.1	10.2	30	8
			d8-toluene (Surrogate)	µg/L	-	10.0	9.9	30	1
			Bromofluorobenzene (Surrogate)	µg/L	-	10.4	9.8	30	6

Volatile Petroleum Hydrocarbons in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE218964.010	LB223669.014		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.0	8.2	30	9
			d8-toluene (Surrogate)	mg/kg	-	9.5	8.7	30	9
			Bromofluorobenzene (Surrogate)	mg/kg	-	6.7	6.2	30	8
		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
SE218964.020	LB223669.025		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.7	8.5	30	2
			d8-toluene (Surrogate)	mg/kg	-	9.3	9.0	30	4
			Bromofluorobenzene (Surrogate)	mg/kg	-	6.7	6.4	30	4
		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
SE218964.030	LB223671.014		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	10.9	10.5	30	4
			d8-toluene (Surrogate)	mg/kg	-	10.9	10.3	30	6
			Bromofluorobenzene (Surrogate)	mg/kg	-	10.3	10.1	30	2
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0
SE218972.004	LB223671.024		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	-	11.0	10.8	30	2
			d8-toluene (Surrogate)	mg/kg	-	10.9	10.7	30	2
			Bromofluorobenzene (Surrogate)	mg/kg	-	10.3	10.3	30	0
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0

Volatile Petroleum Hydrocarbons in Water

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE218964.034	LB223620.025		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	-	10.8	10.1	30	7
			d8-toluene (Surrogate)	µg/L	-	10.0	9.9	30	0
			Bromofluorobenzene (Surrogate)	µg/L	-	10.3	9.7	30	5
		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
SE219026.002	LB223620.024		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	-	11.1	10.2	30	8

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

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE219026.002	LB223620.024	Surrogates	d8-toluene (Surrogate)	µg/L	-	10.0	9.9	30	1
			Bromofluorobenzene (Surrogate)	µg/L	-	10.4	9.8	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	200	0

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

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

Mercury in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB223707.002	Mercury	mg/kg	0.05	0.20	0.2	70 - 130	98
LB223708.002	Mercury	mg/kg	0.05	0.19	0.2	70 - 130	93

OC Pesticides in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB223666.002		Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	100
		Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	100
		Delta BHC	mg/kg	0.1	0.2	0.2	60 - 140	104
		Dieldrin	mg/kg	0.2	<0.2	0.2	60 - 140	99
		Endrin	mg/kg	0.2	0.2	0.2	60 - 140	110
		p,p'-DDT	mg/kg	0.1	0.1	0.2	60 - 140	73
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.15	0.15	40 - 130	97
LB223668.002		Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	108
		Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	107
		Delta BHC	mg/kg	0.1	0.2	0.2	60 - 140	112
		Dieldrin	mg/kg	0.2	0.2	0.2	60 - 140	108
		Endrin	mg/kg	0.2	0.2	0.2	60 - 140	120
		p,p'-DDT	mg/kg	0.1	0.2	0.2	60 - 140	112
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.14	0.15	40 - 130	92

OP Pesticides in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB223666.002		Dichlorvos	mg/kg	0.5	1.6	2	60 - 140	79
		Diazinon (Dimpylate)	mg/kg	0.5	2.1	2	60 - 140	107
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.9	2	60 - 140	97
		Ethion	mg/kg	0.2	1.9	2	60 - 140	93
	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	95
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	99
LB223668.002		Dichlorvos	mg/kg	0.5	1.6	2	60 - 140	78
		Diazinon (Dimpylate)	mg/kg	0.5	1.8	2	60 - 140	88
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.9	2	60 - 140	93
		Ethion	mg/kg	0.2	1.6	2	60 - 140	81
	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	92
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	96

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB223666.002		Naphthalene	mg/kg	0.1	4.5	4	60 - 140	111
		Acenaphthylene	mg/kg	0.1	4.1	4	60 - 140	102
		Acenaphthene	mg/kg	0.1	4.5	4	60 - 140	114
		Phenanthrene	mg/kg	0.1	4.6	4	60 - 140	114
		Anthracene	mg/kg	0.1	4.8	4	60 - 140	119
		Fluoranthene	mg/kg	0.1	4.5	4	60 - 140	114
		Pyrene	mg/kg	0.1	4.8	4	60 - 140	120
		Benzo(a)pyrene	mg/kg	0.1	4.8	4	60 - 140	119
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	103
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	95
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	99
LB223668.002		Naphthalene	mg/kg	0.1	4.8	4	60 - 140	120
		Acenaphthylene	mg/kg	0.1	4.2	4	60 - 140	105
		Acenaphthene	mg/kg	0.1	4.8	4	60 - 140	120
		Phenanthrene	mg/kg	0.1	4.3	4	60 - 140	107
		Anthracene	mg/kg	0.1	4.5	4	60 - 140	111
		Fluoranthene	mg/kg	0.1	4.2	4	60 - 140	105
		Pyrene	mg/kg	0.1	4.7	4	60 - 140	118
		Benzo(a)pyrene	mg/kg	0.1	4.4	4	60 - 140	110
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.6	0.5	40 - 130	113
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	109
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	95

PCBs in Soil

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

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.

PCBs in Soil (continued)

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB223666.002	Arochlor 1260	mg/kg	0.2	0.4	0.4	60 - 140	97
LB223668.002	Arochlor 1260	mg/kg	0.2	0.5	0.4	60 - 140	125

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 %
LB223702.002	Arsenic, As	mg/kg	1	350	318.22	80 - 120	111
	Cadmium, Cd	mg/kg	0.3	4.4	4.81	70 - 130	91
	Chromium, Cr	mg/kg	0.5	46	38.31	80 - 120	119
	Copper, Cu	mg/kg	0.5	310	290	80 - 120	109
	Nickel, Ni	mg/kg	0.5	200	187	80 - 120	105
	Lead, Pb	mg/kg	1	95	89.9	80 - 120	106
	Zinc, Zn	mg/kg	2	290	273	80 - 120	105
LB223703.002	Arsenic, As	mg/kg	1	330	318.22	80 - 120	104
	Cadmium, Cd	mg/kg	0.3	4.2	4.81	70 - 130	88
	Chromium, Cr	mg/kg	0.5	37	38.31	80 - 120	96
	Copper, Cu	mg/kg	0.5	310	290	80 - 120	106
	Nickel, Ni	mg/kg	0.5	190	187	80 - 120	101
	Lead, Pb	mg/kg	1	94	89.9	80 - 120	105
	Zinc, Zn	mg/kg	2	270	273	80 - 120	101

Trace Metals (Dissolved) in Water by ICPMS

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB223492.002	Arsenic, As	µg/L	1	20	20	80 - 120	102
	Cadmium, Cd	µg/L	0.1	22	20	80 - 120	110
	Chromium, Cr	µg/L	1	21	20	80 - 120	107
	Copper, Cu	µg/L	1	22	20	80 - 120	108
	Lead, Pb	µg/L	1	23	20	80 - 120	115
	Nickel, Ni	µg/L	1	22	20	80 - 120	110
	Zinc, Zn	µg/L	5	23	20	80 - 120	114

TRH (Total Recoverable Hydrocarbons) in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB223666.002		TRH C10-C14	mg/kg	20	42	40	60 - 140	105
		TRH C15-C28	mg/kg	45	<45	40	60 - 140	95
		TRH C29-C36	mg/kg	45	<45	40	60 - 140	93
	TRH F Bands	TRH >C10-C16	mg/kg	25	40	40	60 - 140	100
		TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	95
		TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	110
LB223668.002		TRH C10-C14	mg/kg	20	43	40	60 - 140	108
		TRH C15-C28	mg/kg	45	<45	40	60 - 140	95
		TRH C29-C36	mg/kg	45	<45	40	60 - 140	88
	TRH F Bands	TRH >C10-C16	mg/kg	25	41	40	60 - 140	103
		TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	93
		TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	90

TRH (Total Recoverable Hydrocarbons) in Water

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB223496.002		TRH C10-C14	µg/L	50	1300	1200	60 - 140	110
		TRH C15-C28	µg/L	200	1500	1200	60 - 140	125
		TRH C29-C36	µg/L	200	1500	1200	60 - 140	125
	TRH F Bands	TRH >C10-C16	µg/L	60	1500	1200	60 - 140	123
		TRH >C16-C34 (F3)	µg/L	500	1500	1200	60 - 140	128
		TRH >C34-C40 (F4)	µg/L	500	680	600	60 - 140	114

VOC's in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB223669.002	Monocyclic Aromatic	Benzene	mg/kg	0.1	4.7	5	60 - 140	94
		Toluene	mg/kg	0.1	5.0	5	60 - 140	99
		Ethylbenzene	mg/kg	0.1	5.2	5	60 - 140	105
		m/p-xylene	mg/kg	0.2	10	10	60 - 140	104
		o-xylene	mg/kg	0.1	5.3	5	60 - 140	107
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.9	10	70 - 130	99

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.

VOC's in Soil (continued)

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB223669.002	Surrogates	d8-toluene (Surrogate)	mg/kg	-	10.6	10	70 - 130	106
		Bromofluorobenzene (Surrogate)	mg/kg	-	7.5	10	70 - 130	75
LB223671.002	Monocyclic	Benzene	mg/kg	0.1	4.7	5	60 - 140	94
	Aromatic	Toluene	mg/kg	0.1	4.9	5	60 - 140	97
		Ethylbenzene	mg/kg	0.1	5.2	5	60 - 140	104
		m/p-xylene	mg/kg	0.2	10	10	60 - 140	102
		o-xylene	mg/kg	0.1	5.2	5	60 - 140	103
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	12.0	10	70 - 130	120
		d8-toluene (Surrogate)	mg/kg	-	11.8	10	70 - 130	118
		Bromofluorobenzene (Surrogate)	mg/kg	-	11.5	10	70 - 130	115

VOCs in Water

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB223620.002	Monocyclic	Benzene	µg/L	0.5	42	45.45	60 - 140	93
	Aromatic	Toluene	µg/L	0.5	47	45.45	60 - 140	104
		Ethylbenzene	µg/L	0.5	48	45.45	60 - 140	105
		m/p-xylene	µg/L	1	99	90.9	60 - 140	109
		o-xylene	µg/L	0.5	48	45.45	60 - 140	106
	Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	11.1	10	60 - 140	111
		d8-toluene (Surrogate)	µg/L	-	9.8	10	70 - 130	98
		Bromofluorobenzene (Surrogate)	µg/L	-	10.4	10	70 - 130	104

Volatile Petroleum Hydrocarbons in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB223669.002		TRH C6-C10	mg/kg	25	80	92.5	60 - 140	86
		TRH C6-C9	mg/kg	20	71	80	60 - 140	89
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	9.9	10	70 - 130	99
		Bromofluorobenzene (Surrogate)	mg/kg	-	7.5	10	70 - 130	75
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	49	62.5	60 - 140	78
LB223671.002		TRH C6-C10	mg/kg	25	72	92.5	60 - 140	77
		TRH C6-C9	mg/kg	20	64	80	60 - 140	80
	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	12.0	10	70 - 130	120
		Bromofluorobenzene (Surrogate)	mg/kg	-	11.5	10	70 - 130	115
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	41	62.5	60 - 140	66

Volatile Petroleum Hydrocarbons in Water

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB223620.002		TRH C6-C10	µg/L	50	810	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	-	11.1	10	60 - 140	111
		d8-toluene (Surrogate)	µg/L	-	9.8	10	70 - 130	98
		Bromofluorobenzene (Surrogate)	µg/L	-	10.4	10	70 - 130	104
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	µg/L	50	520	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 in Soil

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE218950.001	LB223708.004	Mercury	mg/kg	0.05	0.19	<0.05	0.2	88
SE218964.001	LB223707.004	Mercury	mg/kg	0.05	0.20	<0.05	0.2	86

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE218964.001	LB223666.004		Naphthalene	mg/kg	0.1	4.4	<0.1	4	110
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
			Acenaphthylene	mg/kg	0.1	4.6	<0.1	4	115
			Acenaphthene	mg/kg	0.1	4.4	<0.1	4	110
			Fluorene	mg/kg	0.1	<0.1	<0.1	-	-
			Phenanthrene	mg/kg	0.1	4.5	0.3	4	106
			Anthracene	mg/kg	0.1	4.7	0.1	4	114
			Fluoranthene	mg/kg	0.1	5.0	0.6	4	108
			Pyrene	mg/kg	0.1	5.2	0.6	4	115
			Benzo(a)anthracene	mg/kg	0.1	0.2	0.2	-	-
			Chrysene	mg/kg	0.1	0.3	0.3	-	-
			Benzo(b&j)fluoranthene	mg/kg	0.1	0.2	0.3	-	-
			Benzo(k)fluoranthene	mg/kg	0.1	0.1	0.1	-	-
			Benzo(a)pyrene	mg/kg	0.1	5.1	0.3	4	120
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.2	0.2	-	-
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(ghi)perylene	mg/kg	0.1	0.2	0.2	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	5.2	0.4	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	5.3	0.5	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	5.2	0.4	-	-
			Total PAH (18)	mg/kg	0.8	39	3.2	-	-
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	-	103
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.4	-	90
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	-	95
SE218964.021	LB223668.004		Naphthalene	mg/kg	0.1	4.7	<0.1	4	117
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
			Acenaphthylene	mg/kg	0.1	4.1	<0.1	4	102
			Acenaphthene	mg/kg	0.1	4.9	<0.1	4	121
			Fluorene	mg/kg	0.1	<0.1	<0.1	-	-
			Phenanthrene	mg/kg	0.1	4.3	<0.1	4	106
			Anthracene	mg/kg	0.1	4.5	<0.1	4	112
			Fluoranthene	mg/kg	0.1	4.1	<0.1	4	102
			Pyrene	mg/kg	0.1	4.7	<0.1	4	116
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	-	-
			Chrysene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(a)pyrene	mg/kg	0.1	4.2	<0.1	4	106
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	-	-
			Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	4.2	<0.2	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	4.4	<0.3	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	4.3	<0.2	-	-
			Total PAH (18)	mg/kg	0.8	35	<0.8	-	-
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	-	92
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	-	86
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.4	-	80

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

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

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.

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

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE218950.001	LB223703.004	Arsenic, As	mg/kg	1	50	1	50	96
		Cadmium, Cd	mg/kg	0.3	48	<0.3	50	95
		Chromium, Cr	mg/kg	0.5	62	9.8	50	105
		Copper, Cu	mg/kg	0.5	52	<0.5	50	104
		Nickel, Ni	mg/kg	0.5	52	1.4	50	101
		Lead, Pb	mg/kg	1	55	4	50	100
		Zinc, Zn	mg/kg	2	52	2.1	50	101
SE218964.001	LB223702.004	Arsenic, As	mg/kg	1	52	6	50	90
		Cadmium, Cd	mg/kg	0.3	44	<0.3	50	87
		Chromium, Cr	mg/kg	0.5	62	13	50	98
		Copper, Cu	mg/kg	0.5	56	9.2	50	93
		Nickel, Ni	mg/kg	0.5	55	5.5	50	99
		Lead, Pb	mg/kg	1	64	24	50	80
		Zinc, Zn	mg/kg	2	73	28	50	89

Trace Metals (Dissolved) in Water by ICPMS

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE218957.010	LB223492.004	Arsenic, As	µg/L	1	21	<1	20	105
		Cadmium, Cd	µg/L	0.1	22	<0.1	20	111
		Chromium, Cr	µg/L	1	22	<1	20	109
		Copper, Cu	µg/L	1	22	<1	20	110
		Lead, Pb	µg/L	1	23	<1	20	116
		Nickel, Ni	µg/L	1	23	<1	20	114
		Zinc, Zn	µg/L	5	28	<5	20	122

TRH (Total Recoverable Hydrocarbons) in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE218964.001	LB223666.004		TRH C10-C14	mg/kg	20	42	<20	40	105
			TRH C15-C28	mg/kg	45	120	85	40	83
			TRH C29-C36	mg/kg	45	120	93	40	73
			TRH C37-C40	mg/kg	100	<100	<100	-	-
			TRH C10-C36 Total	mg/kg	110	280	180	-	-
			TRH >C10-C40 Total (F bands)	mg/kg	210	220	<210	-	-
		TRH F Bands	TRH >C10-C16	mg/kg	25	41	<25	40	103
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	37	<25	-	-
			TRH >C16-C34 (F3)	mg/kg	90	180	150	40	60
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	-	-
SE218964.021	LB223668.004		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	<45	<45	40	100
			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	40	<25	40	100
			TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	35	<25	-	-
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	40	110
			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%
SE218964.001	LB223669.004	Monocyclic Aromatic	Benzene	mg/kg	0.1	3.9	<0.1	5	79
			Toluene	mg/kg	0.1	4.2	<0.1	5	84
			Ethylbenzene	mg/kg	0.1	4.6	<0.1	5	91
			m/p-xylene	mg/kg	0.2	9.2	<0.2	10	92
			o-xylene	mg/kg	0.1	4.7	<0.1	5	94
		Polycyclic	Naphthalene	mg/kg	0.1	<0.1	<0.1	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.9	7.9	10	89
			d8-toluene (Surrogate)	mg/kg	-	9.4	8.3	10	94
			Bromofluorobenzene (Surrogate)	mg/kg	-	6.7	6.4	10	67 ⓘ
		Totals	Total Xylenes	mg/kg	0.3	14	<0.3	-	-
			Total BTEX	mg/kg	0.6	27	<0.6	-	-
SE218964.021	LB223671.004	Monocyclic	Benzene	mg/kg	0.1	4.4	<0.1	5	89

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.

VOC's in Soil (continued)

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE218964.021	LB223671.004	Monocyclic	Toluene	mg/kg	0.1	4.6	<0.1	5	93
		Aromatic	Ethylbenzene	mg/kg	0.1	5.0	<0.1	5	100
			m/p-xylene	mg/kg	0.2	10	<0.2	10	100
			o-xylene	mg/kg	0.1	5.0	<0.1	5	100
		Polycyclic	Naphthalene	mg/kg	0.1	<0.1	<0.1	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	10.5	10.9	10	105
			d8-toluene (Surrogate)	mg/kg	-	10.4	10.9	10	104
			Bromofluorobenzene (Surrogate)	mg/kg	-	10.1	10.6	10	101
		Totals	Total Xylenes	mg/kg	0.3	15	<0.3	-	-
			Total BTEX	mg/kg	0.6	29	<0.6	-	-

VOCs in Water

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE219026.001	LB223620.026	Monocyclic	Benzene	µg/L	0.5	47	<0.5	45.45	104
		Aromatic	Toluene	µg/L	0.5	47	<0.5	45.45	104
			Ethylbenzene	µg/L	0.5	48	<0.5	45.45	106
			m/p-xylene	µg/L	1	96	<1	90.9	105
			o-xylene	µg/L	0.5	48	<0.5	45.45	105
		Polycyclic	Naphthalene	µg/L	0.5	48	<0.5	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	10.3	11.0	-	103
			d8-toluene (Surrogate)	µg/L	-	9.9	10.0	-	99
			Bromofluorobenzene (Surrogate)	µg/L	-	9.9	10.4	-	99

Volatile Petroleum Hydrocarbons in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE218964.001	LB223669.004		TRH C6-C10	mg/kg	25	83	<25	92.5	89
			TRH C6-C9	mg/kg	20	69	<20	80	85
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.9	7.9	10	89
			d8-toluene (Surrogate)	mg/kg	-	9.4	8.3	10	94
			Bromofluorobenzene (Surrogate)	mg/kg	-	6.7	6.4	-	67
		VPH F	Benzene (F0)	mg/kg	0.1	3.9	<0.1	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	56	<25	62.5	89
SE218964.021	LB223671.004		TRH C6-C10	mg/kg	25	67	<25	92.5	73
			TRH C6-C9	mg/kg	20	60	<20	80	75
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	10.5	10.9	10	105
			d8-toluene (Surrogate)	mg/kg	-	10.4	10.9	10	104
			Bromofluorobenzene (Surrogate)	mg/kg	-	10.1	10.6	-	101
		VPH F	Benzene (F0)	mg/kg	0.1	4.4	<0.1	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	38	<25	62.5	61

Volatile Petroleum Hydrocarbons in Water

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE219026.001	LB223620.026		TRH C6-C10	µg/L	50	870	<50	946.63	92
			TRH C6-C9	µg/L	40	760	<40	818.71	92
		Surrogates	d4-1,2-dichloroethane (Surrogate)	µg/L	-	10.3	11.0	-	103
			d8-toluene (Surrogate)	µg/L	-	9.9	10.0	-	99
			Bromofluorobenzene (Surrogate)	µg/L	-	9.9	10.4	-	99
		VPH F	Benzene (F0)	µg/L	0.5		0	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	µg/L	50	580	<50	639.67	91

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

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.

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Andrew Ibrahim
Client	EI AUSTRALIA
Address	SUITE 6.01 55 MILLER STREET PYRMONT NSW 2009
Telephone	61 2 95160722
Facsimile	(Not specified)
Email	andrew.ibrahim@eiaustralia.com.au
Project	**E25077 Hughes,Waratah,Wharf Melrose Pk**
Order Number	**E25077**
Samples	29

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	**SE218964 R0**
Date Received	23 Apr 2021
Date Reported	04 May 2021

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 Numbe. 2562/14420. Report No: ME320182

No respirable fibres detected in all soil samples using trace analysis technique.

Asbestos analysed by Approved Identifiers Yusuf Kuthpudin and Ravee Sivasubramaniam .

SIGNATORIES

Akheeqar BENIAMEEN
Chemist

Bennet LO
Senior Organic Chemist/Metals Chemis

Huong CRAWFORD
Production Manager

Ly Kim HA
Organic Section Head

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*
SE218964.001	30-BH110M_2.2-2.3	Soil	191g Clay, Sand, Rocks	21 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE218964.002	30-BH111M_0.2-0.3	Soil	134g Clay, Sand, Rocks	21 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg Organic Fibres Detected	<0.01
SE218964.003	30-BH117_0.2-0.3	Soil	182g Clay, Sand, Rocks	21 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE218964.004	112-BH101_0.3-0.4	Soil	261g Clay, Sand, Rocks	22 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE218964.005	112-BH102_0.4-0.5	Soil	260g Sand, Rocks, Bitumen	22 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE218964.006	112-BH103_0.2-0.3	Soil	325g Clay, Sand, Rocks	21 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE218964.007	112-BH104_0.2-0.3	Soil	295g Clay, Sand, Rocks	21 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE218964.008	112-BH105_0.2-0.3	Soil	142g Clay, Sand, Rocks, Concrete	21 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg Organic Fibres Detected	<0.01
SE218964.009	112-BH106M_0.2-0.3	Soil	217g Clay, Sand, Rocks	21 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE218964.010	112-BH106M_1.4-1.5	Soil	109g Clay, Soil, Rocks	21 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE218964.011	112-BH107_0.2-0.3	Soil	270g Clay, Sand, Rocks	21 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE218964.012	112-BH108_0.2-0.3	Soil	243g Clay, Sand, Rocks	21 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg Organic Fibres Detected	<0.01
SE218964.013	112-BH108_0.7-0.8	Soil	276g Clay, Sand, Rocks	21 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE218964.014	112-BH109_0.3-0.4	Soil	254g Clay, Sand, Rocks, Concrete	21 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE218964.015	112-BH109_0.7-0.8	Soil	221g Clay, Sand, Rocks	21 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE218964.016	112-BH110M_0.2-0.3	Soil	282g Clay, Sand, Rocks	21 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE218964.017	112-BH111_0.2-0.3	Soil	198g Clay, Rocks	22 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE218964.018	112-BH111_0.6-0.7	Soil	206g Clay, Sand, Rocks	22 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg Organic Fibres Detected	<0.01
SE218964.019	112-BH112M_0.4-0.5	Soil	217g Clay, Sand, Soil, Rocks	22 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg Organic Fibres Detected	<0.01
SE218964.020	112-BH113M_0.2-0.3	Soil	220g Clay, Sand, Soil, Rocks	22 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg Organic Fibres Detected	<0.01
SE218964.021	32-BH101_0.1-0.2	Soil	143g Clay, Sand, Soil, Rocks	22 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg Organic Fibres Detected	<0.01
SE218964.022	32-BH102_0.2-0.3	Soil	248g Clay, Sand, Rocks	22 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE218964.023	2-BH103_0.3-0.4	Soil	252g Clay, Sand, Rocks	22 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE218964.024	2-BH103_0.9-1.0	Soil	208g Clay, Rocks	22 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE218964.025	32-BH104M_0.2-0.3	Soil	236g Clay, Sand, Soil, Rocks	22 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg Organic Fibres Detected	<0.01

RESULTS

Fibre Identification in soil — Method AN602

Laboratory Reference	Client Reference	Matrix	Sample Description	Date Sampled	Fibre Identification	Est.%w/w*
SE218964.026	32-BH105_0.2-0.3	Soil	166g Clay, Sand, Soil, Rocks	22 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE218964.027	32-BH106_0.2-0.3	Soil	171g Clay, Sand, Rocks	22 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE218964.028	32-BH106_1.4-1.5	Soil	190g Clay, Soil, Rocks	22 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01
SE218964.029	32-BH107M_0.2-0.3	Soil	190g Clay, Sand, Rocks	22 Apr 2021	No Asbestos Found at reporting limit of 0.1g/kg	<0.01

METHOD SUMMARY

METHOD	METHODOLOGY SUMMARY
AN602	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	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	AS4964.2004 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 limit 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	The sample can be reported “no asbestos found at the reporting limit 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	**E25077 Hughes,Waratah,Wharf Melrose Pk**	SGS Reference	**ME320182 R0**
Order Number	**SE218964**	Date Received	28 Apr 2021
Samples	36	Date Reported	03 May 2021

COMMENTS

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

PFAS was analysed from a glass jar instead of a plastic jar
MA1523 : Some surrogate recovery out of range due to the sample matrix.

SIGNATORIES

Adam ATKINSON
Australian Chemistry Manager

Parameter	Units	LOR	Sample Number ME320182.001 Sample Matrix Soil Sample Date 21 Apr 2021 Sample Name SE218964.001	ME320182.002 Soil 21 Apr 2021 SE218964.002	ME320182.003 Soil 21 Apr 2021 SE218964.003	ME320182.004 Soil 22 Apr 2021 SE218964.004
Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples Method: MA-1523 Tested: 30/4/2021						
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	-	-	-	-
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	-	-	-	-
Perfluorooctane sulfonamide (PFOSA)	mg/kg	0.0016	-	-	-	-
N-Methylperfluorooctane sulfonamide (N-MeFOSA)	mg/kg	0.008	-	-	-	-
N-Ethylperfluorooctane 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	-	-	-	-
(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	%	-	-	-	-	-

Moisture Content Method: AN002 Tested: 30/4/2021

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name ME320182.001 Soil 21 Apr 2021 SE218964.001	ME320182.002 Soil 21 Apr 2021 SE218964.002	ME320182.003 Soil 21 Apr 2021 SE218964.003	ME320182.004 Soil 22 Apr 2021 SE218964.004
Moisture Content Method: AN002 Tested: 30/4/2021 (continued)						
% Moisture*	%w/w	1	-	-	-	-

Parameter	Units	LOR	Sample Number ME320182.005 Sample Matrix Soil Sample Date 22 Apr 2021 Sample Name SE218964.005	ME320182.006 Soil 21 Apr 2021 SE218964.006	ME320182.007 Soil 21 Apr 2021 SE218964.007	ME320182.008 Soil 21 Apr 2021 SE218964.008
Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples	**Method: MA-1523**	**Tested: 28/4/2021**				
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	-	-	<0.0016
Sum PFOS and PFHXS	mg/kg	0.0016	<0.0016	-	-	<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
Perfluorooctane sulfonamide (PFOSA)	mg/kg	0.0016	<0.0016	-	-	<0.0016
N-Methylperfluorooctane sulfonamide (N-MeFOSA)	mg/kg	0.008	<0.008	-	-	<0.008
N-Ethylperfluorooctane 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
(13C4-PFBA) Isotopically Labelled Internal Recovery	%	-	**101**	-	-	**100**
(13C5-PFPeA) Isotopically Labelled Internal Recovery	%	-	**94**	-	-	**93**
(13C5-PFHxA) Isotopically Labelled Internal Recovery	%	-	**153**	-	-	**144**
(13C4-PFHpA) Isotopically Labelled Internal Recovery	%	-	**121**	-	-	**113**
(13C4_PFOA) Isotopically Labelled Internal Recovery	%	-	**121**	-	-	**114**
(13C9-PFNA) Isotopically Labelled Internal Recovery	%	-	**111**	-	-	**106**
(13C6-PFDA) Isotopically Labelled Internal Recovery	%	-	**110**	-	-	**91**
(13C7-PFUdA) Isotopically Labelled Internal Recovery	%	-	**82**	-	-	**78**
(13C2-PFDoA) Isotopically Labelled Internal Recovery	%	-	**89**	-	-	**81**
(13C2_PFTeDA) Isotopically Labelled Internal Recovery	%	-	**45**	-	-	**46**
(13C2-PFHxDA) Isotopically Labelled Internal Recovery	%	-	**19**	-	-	**18**
(13C3-PFBS) Isotopically Labelled Internal Recovery	%	-	**111**	-	-	**113**
(13C3-PFHxS) Isotopically Labelled Internal Recovery	%	-	**97**	-	-	**103**
(13C8-PFOS) Isotopically Labelled Internal Recovery	%	-	**92**	-	-	**99**
(13C2-4:2 FTS) Isotopically Labelled Internal Recovery	%	-	**77**	-	-	**75**
(13C2-6:2 FTS) Isotopically Labelled Internal Recovery	%	-	**41**	-	-	**37**
(13C2-8:2 FTS) Isotopically Labelled Internal Recovery	%	-	**46**	-	-	**48**
(13C8-PFOSA) Isotopically Labelled Internal Recovery	%	-	**79**	-	-	**83**
(D3-N-MeFOSA) Isotopically Labelled Internal Recovery	%	-	**59**	-	-	**51**
(D5-N-EtFOSA) Isotopically Labelled Internal Recovery	%	-	**44**	-	-	**40**
(D7-N-MeFOSE) Isotopically Labelled Internal Recovery	%	-	**83**	-	-	**71**
(D9-N-EtFOSE) Isotopically Labelled Internal Recovery	%	-	**63**	-	-	**51**
(D3-N-MeFOSAA) Isotopically Labelled Internal Recovery	%	-	**60**	-	-	**50**
(D5-N-EtFOSAA) Isotopically Labelled Internal Recovery	%	-	**46**	-	-	**49**
Moisture Content	**Method: AN002**	**Tested: 28/4/2021**				

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name ME320182.005 Soil 22 Apr 2021 SE218964.005	ME320182.006 Soil 21 Apr 2021 SE218964.006	ME320182.007 Soil 21 Apr 2021 SE218964.007	ME320182.008 Soil 21 Apr 2021 SE218964.008
Moisture Content Method: AN002 Tested: 28/4/2021 (continued)						
% Moisture*	%w/w	1	**4.9**	-	-	**11.5**

Parameter	Units	LOR	Sample Number: ME320182.009 Sample Matrix: Soil Sample Date: 21 Apr 2021 Sample Name: SE218964.009	ME320182.010 Soil 21 Apr 2021 SE218964.010	ME320182.011 Soil 21 Apr 2021 SE218964.011	ME320182.012 Soil 21 Apr 2021 SE218964.012
Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples	**Method: MA-1523**	**Tested: 28/4/2021**				
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	<0.0016	-	-	-
Sum PFOS and PFHXS	mg/kg	0.0016	<0.0016	-	-	-
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	-	-	-
Perfluorooctane sulfonamide (PFOSA)	mg/kg	0.0016	<0.0016	-	-	-
N-Methylperfluorooctane sulfonamide (N-MeFOSA)	mg/kg	0.008	<0.008	-	-	-
N-Ethylperfluorooctane 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	-	-	-
(13C4-PFBA) Isotopically Labelled Internal Recovery	%	-	**100**	-	-	-
(13C5-PFPeA) Isotopically Labelled Internal Recovery	%	-	**92**	-	-	-
(13C5-PFHxA) Isotopically Labelled Internal Recovery	%	-	**131**	-	-	-
(13C4-PFHpA) Isotopically Labelled Internal Recovery	%	-	**103**	-	-	-
(13C4_PFOA) Isotopically Labelled Internal Recovery	%	-	**113**	-	-	-
(13C9-PFNA) Isotopically Labelled Internal Recovery	%	-	**101**	-	-	-
(13C6-PFDA) Isotopically Labelled Internal Recovery	%	-	**99**	-	-	-
(13C7-PFUdA) Isotopically Labelled Internal Recovery	%	-	**101**	-	-	-
(13C2-PFDoA) Isotopically Labelled Internal Recovery	%	-	**105**	-	-	-
(13C2_PFTeDA) Isotopically Labelled Internal Recovery	%	-	**85**	-	-	-
(13C2-PFHxDA) Isotopically Labelled Internal Recovery	%	-	**46**	-	-	-
(13C3-PFBS) Isotopically Labelled Internal Recovery	%	-	**105**	-	-	-
(13C3-PFHxS) Isotopically Labelled Internal Recovery	%	-	**96**	-	-	-
(13C8-PFOS) Isotopically Labelled Internal Recovery	%	-	**98**	-	-	-
(13C2-4:2 FTS) Isotopically Labelled Internal Recovery	%	-	**74**	-	-	-
(13C2-6:2 FTS) Isotopically Labelled Internal Recovery	%	-	**39**	-	-	-
(13C2-8:2 FTS) Isotopically Labelled Internal Recovery	%	-	**50**	-	-	-
(13C8-PFOSA) Isotopically Labelled Internal Recovery	%	-	**98**	-	-	-
(D3-N-MeFOSA) Isotopically Labelled Internal Recovery	%	-	**65**	-	-	-
(D5-N-EtFOSA) Isotopically Labelled Internal Recovery	%	-	**57**	-	-	-
(D7-N-MeFOSE) Isotopically Labelled Internal Recovery	%	-	**96**	-	-	-
(D9-N-EtFOSE) Isotopically Labelled Internal Recovery	%	-	**82**	-	-	-
(D3-N-MeFOSAA) Isotopically Labelled Internal Recovery	%	-	**69**	-	-	-
(D5-N-EtFOSAA) Isotopically Labelled Internal Recovery	%	-	**61**	-	-	-
Moisture Content	**Method: AN002**	**Tested: 28/4/2021**				

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name ME320182.009 Soil 21 Apr 2021 SE218964.009	ME320182.010 Soil 21 Apr 2021 SE218964.010	ME320182.011 Soil 21 Apr 2021 SE218964.011	ME320182.012 Soil 21 Apr 2021 SE218964.012
Moisture Content Method: AN002 Tested: 30/4/2021 (continued)						
% Moisture*	%w/w	1	**12.1**	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	ME320182.013 Soil 21 Apr 2021 SE218964.013	ME320182.014 Soil 21 Apr 2021 SE218964.014	ME320182.015 Soil 21 Apr 2021 SE218964.015	ME320182.016 Soil 21 Apr 2021 SE218964.016
Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples	**Method: MA-1523**	**Tested: 30/4/2021**					
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		-	**0.0009**	-	-
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		-	**0.0049**	-	-
Perfluoroheptane sulfonate (PFHpS)	mg/kg	0.0016		-	<0.0016	-	-
Perfluorooctane sulfonate (PFOS)	mg/kg	0.0016		-	**0.034**	-	-
Sum PFOS and PFHXS	mg/kg	0.0016		-	**0.039**	-	-
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		-	**0.0026**	-	-
1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS)	mg/kg	0.0016		-	<0.0016	-	-
Perfluorooctane sulfonamide (PFOSA)	mg/kg	0.0016		-	<0.0016	-	-
N-Methylperfluorooctane sulfonamide (N-MeFOSA)	mg/kg	0.008		-	<0.008	-	-
N-Ethylperfluorooctane 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	-	-
(13C4-PFBA) Isotopically Labelled Internal Recovery	%	-		-	**107**	-	-
(13C5-PFPeA) Isotopically Labelled Internal Recovery	%	-		-	**102**	-	-
(13C5-PFHxA) Isotopically Labelled Internal Recovery	%	-		-	**126**	-	-
(13C4-PFHpA) Isotopically Labelled Internal Recovery	%	-		-	**102**	-	-
(13C4_PFOA) Isotopically Labelled Internal Recovery	%	-		-	**112**	-	-
(13C9-PFNA) Isotopically Labelled Internal Recovery	%	-		-	**111**	-	-
(13C6-PFDA) Isotopically Labelled Internal Recovery	%	-		-	**94**	-	-
(13C7-PFUdA) Isotopically Labelled Internal Recovery	%	-		-	**80**	-	-
(13C2-PFDoA) Isotopically Labelled Internal Recovery	%	-		-	**80**	-	-
(13C2_PFTeDA) Isotopically Labelled Internal Recovery	%	-		-	**47**	-	-
(13C2-PFHxDA) Isotopically Labelled Internal Recovery	%	-		-	**16**	-	-
(13C3-PFBS) Isotopically Labelled Internal Recovery	%	-		-	**95**	-	-
(13C3-PFHxS) Isotopically Labelled Internal Recovery	%	-		-	**95**	-	-
(13C8-PFOS) Isotopically Labelled Internal Recovery	%	-		-	**123**	-	-
(13C2-4:2 FTS) Isotopically Labelled Internal Recovery	%	-		-	**72**	-	-
(13C2-6:2 FTS) Isotopically Labelled Internal Recovery	%	-		-	**48**	-	-
(13C2-8:2 FTS) Isotopically Labelled Internal Recovery	%	-		-	**53**	-	-
(13C8-PFOSA) Isotopically Labelled Internal Recovery	%	-		-	**67**	-	-
(D3-N-MeFOSA) Isotopically Labelled Internal Recovery	%	-		-	**48**	-	-
(D5-N-EtFOSA) Isotopically Labelled Internal Recovery	%	-		-	**36**	-	-
(D7-N-MeFOSE) Isotopically Labelled Internal Recovery	%	-		-	**74**	-	-
(D9-N-EtFOSE) Isotopically Labelled Internal Recovery	%	-		-	**59**	-	-
(D3-N-MeFOSAA) Isotopically Labelled Internal Recovery	%	-		-	**50**	-	-
(D5-N-EtFOSAA) Isotopically Labelled Internal Recovery	%	-		-	**41**	-	-
Moisture Content	**Method: AN002**	**Tested: 30/4/2021**					

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name ME320182.013 Soil 21 Apr 2021 SE218964.013	ME320182.014 Soil 21 Apr 2021 SE218964.014	ME320182.015 Soil 21 Apr 2021 SE218964.015	ME320182.016 Soil 21 Apr 2021 SE218964.016
Moisture Content Method: AN002 Tested: 30/4/2021 (continued)						
% Moisture*	%w/w	1	-	**7.6**	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	ME320182.017 Soil 22 Apr 2021 SE218964.017	ME320182.018 Soil 22 Apr 2021 SE218964.018	ME320182.019 Soil 22 Apr 2021 SE218964.019	ME320182.020 Soil 22 Apr 2021 SE218964.020
Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples	**Method: MA-1523**	**Tested: 30/4/2021**					
Perfluorobutanoic acid (PFBA)	mg/kg	0.0016		-	-	<0.0016	<0.0016
Perfluoropentanoic acid (PFPeA)	mg/kg	0.0016		-	-	<0.0016	**0.0024**
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	**0.0073**
Perfluorononanoic acid (PFNA)	mg/kg	0.0016		-	-	<0.0016	**0.0021**
Perfluorodecanoic acid (PFDA)	mg/kg	0.0016		-	-	<0.0016	**0.011**
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		-	-	**0.0098**	**0.0029**
Sum PFOS and PFHXS	mg/kg	0.0016		-	-	**0.0098**	**0.0029**
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
Perfluorooctane sulfonamide (PFOSA)	mg/kg	0.0016		-	-	<0.0016	<0.0016
N-Methylperfluorooctane sulfonamide (N-MeFOSA)	mg/kg	0.008		-	-	<0.008	<0.008
N-Ethylperfluorooctane 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
(13C4-PFBA) Isotopically Labelled Internal Recovery	%	-		-	-	**103**	**100**
(13C5-PFPeA) Isotopically Labelled Internal Recovery	%	-		-	-	**94**	**96**
(13C5-PFHxA) Isotopically Labelled Internal Recovery	%	-		-	-	**161**	**144**
(13C4-PFHpA) Isotopically Labelled Internal Recovery	%	-		-	-	**125**	**119**
(13C4_PFOA) Isotopically Labelled Internal Recovery	%	-		-	-	**113**	**125**
(13C9-PFNA) Isotopically Labelled Internal Recovery	%	-		-	-	**108**	**120**
(13C6-PFDA) Isotopically Labelled Internal Recovery	%	-		-	-	**77**	**93**
(13C7-PFUdA) Isotopically Labelled Internal Recovery	%	-		-	-	**68**	**93**
(13C2-PFDoA) Isotopically Labelled Internal Recovery	%	-		-	-	**80**	**87**
(13C2_PFTeDA) Isotopically Labelled Internal Recovery	%	-		-	-	**62**	**25**
(13C2-PFHxDA) Isotopically Labelled Internal Recovery	%	-		-	-	**19**	**9**
(13C3-PFBS) Isotopically Labelled Internal Recovery	%	-		-	-	**124**	**113**
(13C3-PFHxS) Isotopically Labelled Internal Recovery	%	-		-	-	**90**	**96**
(13C8-PFOS) Isotopically Labelled Internal Recovery	%	-		-	-	**103**	**121**
(13C2-4:2 FTS) Isotopically Labelled Internal Recovery	%	-		-	-	**84**	**82**
(13C2-6:2 FTS) Isotopically Labelled Internal Recovery	%	-		-	-	**45**	**50**
(13C2-8:2 FTS) Isotopically Labelled Internal Recovery	%	-		-	-	**44**	**46**
(13C8-PFOSA) Isotopically Labelled Internal Recovery	%	-		-	-	**115**	**107**
(D3-N-MeFOSA) Isotopically Labelled Internal Recovery	%	-		-	-	**84**	**42**
(D5-N-EtFOSA) Isotopically Labelled Internal Recovery	%	-		-	-	**60**	**28**
(D7-N-MeFOSE) Isotopically Labelled Internal Recovery	%	-		-	-	**114**	**91**
(D9-N-EtFOSE) Isotopically Labelled Internal Recovery	%	-		-	-	**89**	**74**
(D3-N-MeFOSAA) Isotopically Labelled Internal Recovery	%	-		-	-	**71**	**62**
(D5-N-EtFOSAA) Isotopically Labelled Internal Recovery	%	-		-	-	**41**	**44**

Moisture Content **Method: AN002** **Tested: 30/4/2021**

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name ME320182.017 Soil 22 Apr 2021 SE218964.017	ME320182.018 Soil 22 Apr 2021 SE218964.018	ME320182.019 Soil 22 Apr 2021 SE218964.019	ME320182.020 Soil 22 Apr 2021 SE218964.020
Moisture Content Method: AN002 Tested: 28/4/2021 (continued)						
% Moisture*	%w/w	1	-	-	**12.6**	**15.0**

Parameter	Units	LOR	Sample Number ME320182.021 Sample Matrix Soil Sample Date 22 Apr 2021 Sample Name SE218964.021	ME320182.022 Soil 22 Apr 2021 SE218964.022	ME320182.023 Soil 22 Apr 2021 SE218964.023	ME320182.024 Soil 22 Apr 2021 SE218964.024
Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples Method: MA-1523 Tested: 28/4/2021						
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	<0.0016	-	-	-
Sum PFOS and PFHXS	mg/kg	0.0016	<0.0016	-	-	-
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	-	-	-
Perfluorooctane sulfonamide (PFOSA)	mg/kg	0.0016	<0.0016	-	-	-
N-Methylperfluorooctane sulfonamide (N-MeFOSA)	mg/kg	0.008	<0.008	-	-	-
N-Ethylperfluorooctane 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	-	-	-
(13C4-PFBA) Isotopically Labelled Internal Recovery	%	-	**101**	-	-	-
(13C5-PFPeA) Isotopically Labelled Internal Recovery	%	-	**93**	-	-	-
(13C5-PFHxA) Isotopically Labelled Internal Recovery	%	-	**145**	-	-	-
(13C4-PFHpA) Isotopically Labelled Internal Recovery	%	-	**119**	-	-	-
(13C4_PFOA) Isotopically Labelled Internal Recovery	%	-	**123**	-	-	-
(13C9-PFNA) Isotopically Labelled Internal Recovery	%	-	**103**	-	-	-
(13C6-PFDA) Isotopically Labelled Internal Recovery	%	-	**84**	-	-	-
(13C7-PFUdA) Isotopically Labelled Internal Recovery	%	-	**88**	-	-	-
(13C2-PFDoA) Isotopically Labelled Internal Recovery	%	-	**99**	-	-	-
(13C2_PFTeDA) Isotopically Labelled Internal Recovery	%	-	**94**	-	-	-
(13C2-PFHxDA) Isotopically Labelled Internal Recovery	%	-	**42**	-	-	-
(13C3-PFBS) Isotopically Labelled Internal Recovery	%	-	**109**	-	-	-
(13C3-PFHxS) Isotopically Labelled Internal Recovery	%	-	**95**	-	-	-
(13C8-PFOS) Isotopically Labelled Internal Recovery	%	-	**110**	-	-	-
(13C2-4:2 FTS) Isotopically Labelled Internal Recovery	%	-	**76**	-	-	-
(13C2-6:2 FTS) Isotopically Labelled Internal Recovery	%	-	**40**	-	-	-
(13C2-8:2 FTS) Isotopically Labelled Internal Recovery	%	-	**48**	-	-	-
(13C8-PFOSA) Isotopically Labelled Internal Recovery	%	-	**83**	-	-	-
(D3-N-MeFOSA) Isotopically Labelled Internal Recovery	%	-	**69**	-	-	-
(D5-N-EtFOSA) Isotopically Labelled Internal Recovery	%	-	**55**	-	-	-
(D7-N-MeFOSE) Isotopically Labelled Internal Recovery	%	-	**84**	-	-	-
(D9-N-EtFOSE) Isotopically Labelled Internal Recovery	%	-	**73**	-	-	-
(D3-N-MeFOSAA) Isotopically Labelled Internal Recovery	%	-	**65**	-	-	-
(D5-N-EtFOSAA) Isotopically Labelled Internal Recovery	%	-	**60**	-	-	-

Moisture Content Method: AN002 Tested: 28/4/2021

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name ME320182.021 Soil 22 Apr 2021 SE218964.021	ME320182.022 Soil 22 Apr 2021 SE218964.022	ME320182.023 Soil 22 Apr 2021 SE218964.023	ME320182.024 Soil 22 Apr 2021 SE218964.024
Moisture Content Method: AN002 Tested: 30/4/2021 (continued)						
% Moisture*	%w/w	1	**11.1**	-	-	-

Parameter	Units	LOR	Sample Number ME320182.025 Sample Matrix Soil Sample Date 22 Apr 2021 Sample Name SE218964.025	ME320182.026 Soil 22 Apr 2021 SE218964.026	ME320182.027 Soil 22 Apr 2021 SE218964.027	ME320182.028 Soil 22 Apr 2021 SE218964.028
Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples	**Method: MA-1523**	**Tested: 28/4/2021**				
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	<0.0016	-	-	-
Sum PFOS and PFHXS	mg/kg	0.0016	<0.0016	-	-	-
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	-	-	-
Perfluorooctane sulfonamide (PFOSA)	mg/kg	0.0016	<0.0016	-	-	-
N-Methylperfluorooctane sulfonamide (N-MeFOSA)	mg/kg	0.008	<0.008	-	-	-
N-Ethylperfluorooctane 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	-	-	-
(13C4-PFBA) Isotopically Labelled Internal Recovery	%	-	**102**	-	-	-
(13C5-PFPeA) Isotopically Labelled Internal Recovery	%	-	**93**	-	-	-
(13C5-PFHxA) Isotopically Labelled Internal Recovery	%	-	**129**	-	-	-
(13C4-PFHpA) Isotopically Labelled Internal Recovery	%	-	**105**	-	-	-
(13C4_PFOA) Isotopically Labelled Internal Recovery	%	-	**106**	-	-	-
(13C9-PFNA) Isotopically Labelled Internal Recovery	%	-	**96**	-	-	-
(13C6-PFDA) Isotopically Labelled Internal Recovery	%	-	**95**	-	-	-
(13C7-PFUdA) Isotopically Labelled Internal Recovery	%	-	**82**	-	-	-
(13C2-PFDoA) Isotopically Labelled Internal Recovery	%	-	**78**	-	-	-
(13C2_PFTeDA) Isotopically Labelled Internal Recovery	%	-	**44**	-	-	-
(13C2-PFHxDA) Isotopically Labelled Internal Recovery	%	-	**14**	-	-	-
(13C3-PFBS) Isotopically Labelled Internal Recovery	%	-	**111**	-	-	-
(13C3-PFHxS) Isotopically Labelled Internal Recovery	%	-	**105**	-	-	-
(13C8-PFOS) Isotopically Labelled Internal Recovery	%	-	**109**	-	-	-
(13C2-4:2 FTS) Isotopically Labelled Internal Recovery	%	-	**78**	-	-	-
(13C2-6:2 FTS) Isotopically Labelled Internal Recovery	%	-	**38**	-	-	-
(13C2-8:2 FTS) Isotopically Labelled Internal Recovery	%	-	**44**	-	-	-
(13C8-PFOSA) Isotopically Labelled Internal Recovery	%	-	**68**	-	-	-
(D3-N-MeFOSA) Isotopically Labelled Internal Recovery	%	-	**39**	-	-	-
(D5-N-EtFOSA) Isotopically Labelled Internal Recovery	%	-	**26**	-	-	-
(D7-N-MeFOSE) Isotopically Labelled Internal Recovery	%	-	**65**	-	-	-
(D9-N-EtFOSE) Isotopically Labelled Internal Recovery	%	-	**48**	-	-	-
(D3-N-MeFOSAA) Isotopically Labelled Internal Recovery	%	-	**53**	-	-	-
(D5-N-EtFOSAA) Isotopically Labelled Internal Recovery	%	-	**47**	-	-	-
Moisture Content	**Method: AN002**	**Tested: 28/4/2021**				

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name ME320182.025 Soil 22 Apr 2021 SE218964.025	ME320182.026 Soil 22 Apr 2021 SE218964.026	ME320182.027 Soil 22 Apr 2021 SE218964.027	ME320182.028 Soil 22 Apr 2021 SE218964.028
Moisture Content Method: AN002 Tested: 30/4/2021 (continued)						
% Moisture*	%w/w	1	**11.1**	-	-	-

Parameter	Units	LOR	Sample Number: ME320182.029 Sample Matrix: Soil Sample Date: 22 Apr 2021 Sample Name: SE218964.029	ME320182.030 Soil 20 Feb 2021 SE218964.030	ME320182.031 Soil 22 Feb 2021 SE218964.031	ME320182.032 Soil 22 Feb 2021 SE218964.032
Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples **Method: MA-1523** **Tested: 28/4/2021**						
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	<0.0016	-	-	-
Sum PFOS and PFHXS	mg/kg	0.0016	<0.0016	-	-	-
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	-	-	-
Perfluorooctane sulfonamide (PFOSA)	mg/kg	0.0016	<0.0016	-	-	-
N-Methylperfluorooctane sulfonamide (N-MeFOSA)	mg/kg	0.008	<0.008	-	-	-
N-Ethylperfluorooctane 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	-	-	-
(13C4-PFBA) Isotopically Labelled Internal Recovery	%	-	**100**	-	-	-
(13C5-PFPeA) Isotopically Labelled Internal Recovery	%	-	**92**	-	-	-
(13C5-PFHxA) Isotopically Labelled Internal Recovery	%	-	**133**	-	-	-
(13C4-PFHpA) Isotopically Labelled Internal Recovery	%	-	**105**	-	-	-
(13C4_PFOA) Isotopically Labelled Internal Recovery	%	-	**114**	-	-	-
(13C9-PFNA) Isotopically Labelled Internal Recovery	%	-	**112**	-	-	-
(13C6-PFDA) Isotopically Labelled Internal Recovery	%	-	**87**	-	-	-
(13C7-PFUdA) Isotopically Labelled Internal Recovery	%	-	**88**	-	-	-
(13C2-PFDoA) Isotopically Labelled Internal Recovery	%	-	**98**	-	-	-
(13C2_PFTeDA) Isotopically Labelled Internal Recovery	%	-	**70**	-	-	-
(13C2-PFHxDA) Isotopically Labelled Internal Recovery	%	-	**26**	-	-	-
(13C3-PFBS) Isotopically Labelled Internal Recovery	%	-	**105**	-	-	-
(13C3-PFHxS) Isotopically Labelled Internal Recovery	%	-	**101**	-	-	-
(13C8-PFOS) Isotopically Labelled Internal Recovery	%	-	**97**	-	-	-
(13C2-4:2 FTS) Isotopically Labelled Internal Recovery	%	-	**73**	-	-	-
(13C2-6:2 FTS) Isotopically Labelled Internal Recovery	%	-	**37**	-	-	-
(13C2-8:2 FTS) Isotopically Labelled Internal Recovery	%	-	**48**	-	-	-
(13C8-PFOSA) Isotopically Labelled Internal Recovery	%	-	**84**	-	-	-
(D3-N-MeFOSA) Isotopically Labelled Internal Recovery	%	-	**65**	-	-	-
(D5-N-EtFOSA) Isotopically Labelled Internal Recovery	%	-	**52**	-	-	-
(D7-N-MeFOSE) Isotopically Labelled Internal Recovery	%	-	**85**	-	-	-
(D9-N-EtFOSE) Isotopically Labelled Internal Recovery	%	-	**71**	-	-	-
(D3-N-MeFOSAA) Isotopically Labelled Internal Recovery	%	-	**59**	-	-	-
(D5-N-EtFOSAA) Isotopically Labelled Internal Recovery	%	-	**53**	-	-	-
Moisture Content **Method: AN002** **Tested: 28/4/2021**						

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name ME320182.029 Soil 22 Apr 2021 SE218964.029	ME320182.030 Soil 20 Feb 2021 SE218964.030	ME320182.031 Soil 22 Feb 2021 SE218964.031	ME320182.032 Soil 22 Feb 2021 SE218964.032
Moisture Content Method: AN002 Tested: 30/4/2021 (continued)						
% Moisture*	%w/w	1	**12.5**	-	-	-

Parameter	Units	LOR	Sample Number ME320182.033 Sample Matrix Soil Sample Date 22 Feb 2021 Sample Name SE218964.033	ME320182.034 Water 22 Feb 2021 SE218964.034	ME320182.035 Soil 22 Feb 2021 SE218964.035	ME320182.036 Soil 22 Feb 2021 SE218964.036
Per- and Polyfluoroalkyl Substances (PFAS) in Solid Samples Method: MA-1523 Tested: 30/4/2021						
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	-	-	-	-
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	-	-	-	-
Perfluorooctane sulfonamide (PFOSA)	mg/kg	0.0016	-	-	-	-
N-Methylperfluorooctane sulfonamide (N-MeFOSA)	mg/kg	0.008	-	-	-	-
N-Ethylperfluorooctane 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	-	-	-	-
(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	%	-	-	-	-	-

Moisture Content Method: AN002 Tested: 30/4/2021

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name ME320182.033 Soil 22 Feb 2021 SE218964.033	ME320182.034 Water 22 Feb 2021 SE218964.034	ME320182.035 Soil 22 Feb 2021 SE218964.035	ME320182.036 Soil 22 Feb 2021 SE218964.036
Moisture Content Method: AN002 Tested: 30/4/2021 (continued)						
% 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*	LB040859	%w/w	1	3 - 21%

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

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
Perfluorobutanoic acid (PFBA)	LB040858	mg/kg	0.0016	<0.0016	0%	NA
Perfluoropentanoic acid (PFPeA)	LB040858	mg/kg	0.0016	<0.0016	0%	NA
Perfluorohexanoic acid (PFHxA)	LB040858	mg/kg	0.0016	<0.0016	0%	NA
Perfluoroheptanoic acid (PFHpA)	LB040858	mg/kg	0.0016	<0.0016	0%	75%
Perfluorooctanoic Acid (PFOA)	LB040858	mg/kg	0.0008	<0.0008	0%	84%
Perfluorononanoic acid (PFNA)	LB040858	mg/kg	0.0016	<0.0016	0%	103%
Perfluorodecanoic acid (PFDA)	LB040858	mg/kg	0.0016	<0.0016	0%	109%
Perfluoroundecanoic acid (PFUnA)	LB040858	mg/kg	0.0016	<0.0016	0%	101%
Perfluorododecanoic acid (PFDoA)	LB040858	mg/kg	0.0016	<0.0016	0%	110%
Perfluorotridecanoic acid (PFTrDA)	LB040858	mg/kg	0.0016	<0.0016	0%	91%
Perfluorotetradecanoic acid (PFTeDA)	LB040858	mg/kg	0.0016	<0.0016	0%	NA
Perfluorohexadecanoic acid (PFHxDA)	LB040858	mg/kg	0.0032	<0.0032	0%	NA
Perfluorobutane sulfonate (PFBS)	LB040858	mg/kg	0.0016	<0.0016	0%	NA
Perfluoropentane sulfonate (PFPeS)	LB040858	mg/kg	0.0016	<0.0016	0%	NA
Perfluorohexane sulfonate (PFHxS)	LB040858	mg/kg	0.0016	<0.0016	0%	NA
Perfluoroheptane sulfonate (PFHpS)	LB040858	mg/kg	0.0016	<0.0016	0%	NA
Perfluorooctane sulfonate (PFOS)	LB040858	mg/kg	0.0016	<0.0016	0%	127%
Sum PFOS and PFHXS	LB040858	mg/kg	0.0016	<0.0016	0%	NA
Perfluorononane sulfonate (PFNS)	LB040858	mg/kg	0.0016	<0.0016	0%	NA
Perfluorodecane sulfonate (PFDS)	LB040858	mg/kg	0.0016	<0.0016	0%	NA
Perfluorododecane sulfonate (PFDoS)	LB040858	mg/kg	0.0016	<0.0016	0%	NA
1H,1H,2H,2H-Perfluorohexane sulfonate (4:2) (4:2 FTS)	LB040858	mg/kg	0.0016	<0.0016	0%	NA
1H,1H,2H,2H-Perfluorooctane sulfonate (6:2) (6:2 FTS)	LB040858	mg/kg	0.0016	<0.0016	0%	NA
1H,1H,2H,2H-Perfluorodecane sulfonate (8:2) (8:2 FTS)	LB040858	mg/kg	0.0016	<0.0016	0%	NA
Perfluorooctane sulfonamide (PFOSA)	LB040858	mg/kg	0.0016	<0.0016	0%	74%
N-Methylperfluorooctane sulfonamide (N-MeFOSA)	LB040858	mg/kg	0.008	<0.008	0%	NA
N-Ethylperfluorooctane sulfonamide (N-EtFOSA)	LB040858	mg/kg	0.008	<0.008	0%	NA
2-(N-Methylperfluorooctane sulfonamido)-ethanol (N-MeFOSE)	LB040858	mg/kg	0.016	<0.016	0%	NA
2-(N-Ethylperfluorooctane sulfonamido)-ethanol (N-EtFOSE)	LB040858	mg/kg	0.016	<0.016	0%	NA
N-Methylperfluorooctanesulfonamidoacetic acid (N_MeFOSAA)	LB040858	mg/kg	0.008	<0.008	0%	NA
N-Ethylperfluorooctanesulfonamidoacetic Acid (N-EtFOSAA)	LB040858	mg/kg	0.008	<0.008	0%	NA
(13C4-PFBA) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	99%	0 - 1%	99%
(13C5-PFPeA) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	88%	1%	90%
(13C5-PFHxA) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	136%	0 - 10%	144%
(13C4-PFHpA) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	108%	1 - 10%	119%
(13C4_PFOA) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	112%	8 - 9%	118%
(13C9-PFNA) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	110%	2 - 3%	114%
(13C6-PFDA) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	109%	19%	98%
(13C7-PFUdA) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	87%	6 - 11%	98%
(13C2-PFDoA) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	84%	5 - 6%	96%
(13C2_PFTeDA) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	49%	9 - 59%	76%
(13C2-PFHxDA) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	11%	26 - 76%	32%
(13C3-PFBS) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	123%	2 - 5%	117%
(13C3-PFHxS) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	102%	0 - 13%	100%
(13C8-PFOS) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	115%	5 - 6%	108%
(13C2-4:2 FTS) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	89%	1 - 4%	84%
(13C2-6:2 FTS) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	47%	3 - 9%	46%
(13C2-8:2 FTS) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	55%	5 - 11%	51%
(13C8-PFOSA) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	101%	2 - 7%	99%
(D3-N-MeFOSA) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	65%	1 - 80%	69%
(D5-N-EtFOSA) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	59%	10 - 95%	56%

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
(D7-N-MeFOSE) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	92%	0 - 6%	98%
(D9-N-EtFOSE) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	79%	11%	91%
(D3-N-MeFOSAA) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	65%	4 - 9%	70%
(D5-N-EtFOSAA) Isotopically Labelled Internal Recovery Standard	LB040858	%	-	69%	9 - 11%	58%

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.

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ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Andrew Ibrahim
Client	EI AUSTRALIA
Address	SUITE 6.01 55 MILLER STREET PYRMONT NSW 2009
Telephone	61 2 95160722
Facsimile	(Not specified)
Email	andrew.ibrahim@eiaustralia.com.au
Project	**E25077 Hughes,Waratah,Wharf Melrose Pk**
Order Number	**E25077**
Samples	29

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	**SE218963ARE R0**
Date Received	10/5/2021
Date Reported	11/5/2021

COMMENTS

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

SIGNATORIES

Shane MCDERMOTT
Inorganic/Metals Chemist

Teresa NGUYEN
Organic Chemist

TCLP (Toxicity Characteristic Leaching Procedure) for Organics/SVOC [AN006] Tested: 10/5/2021

PARAMETER	UOM	LOR	30-BH104_0.4-0.5 SOIL - 20/4/2021 SE218963ARE.012
pH 1:20	pH Units	-	**9.8**
pH 1:20 plus HCL	pH Units	-	**6.1**
Extraction Solution Used	No unit	-	**2**
Mass of Sample Used*	g	-	**25**
Volume of ExtractionSolution Used*	mL	-	**500**
pH TCLP after 18 hours	pH Units	-	**5.2**

PAH (Polynuclear Aromatic Hydrocarbons) in TCLP Extract [AN420] Tested: 10/5/2021

PARAMETER	UOM	LOR	30-BH104_0.4-0.5 SOIL - 20/4/2021 SE218963ARE.012
Benzo(a)pyrene	µg/L	0.1	<0.1

METHOD	METHODOLOGY SUMMARY
AN006	Contaminants of interest in a waste material are leached out of the waste with a selected leaching solution under controlled conditions. The ratio of sample to extraction fluid is 100g to 2L (1 to 20 by mass). The concentration of each contaminant of interest is determined in the leachate by appropriate methods after separation from the sample by filtering. Base on USEPA 1311.
AN006	Extraction Fluid #1: This fluid is made by combining 128.6mL of dilute sodium hydroxide solution and 11.5mL glacial acetic acid with water and diluting to a volume of 2 litres. The pH of this fluid should be 4.93 ± 0.05.
AN006	Extraction Fluid #2: This fluid is made by diluting 5.7mL glacial acetic acid with water to a volume of 1 litre. The pH of this fluid should be 2.88 ± 0.05.
AN020	Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B.
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.
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).

FOOTNOTES

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

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Solid samples expressed on a dry weight basis.

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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.

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STATEMENT OF QA/QC PERFORMANCE

SE218963ARE R0

CLIENT DETAILS

Contact	Andrew Ibrahim
Client	EI AUSTRALIA
Address	SUITE 6.01 55 MILLER STREET PYRMONT NSW 2009
Telephone	61 2 95160722
Facsimile	(Not specified)
Email	andrew.ibrahim@eiaustralia.com.au
Project	**E25077 Hughes,Waratah,Wharf Melrose Pk**
Order Number	**E25077**
Samples	29

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	**SE218963ARE R0**
Date Received	10 May 2021
Date Reported	11 May 2021

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	TCLP (Toxicity Characteristic Leaching Procedure) for Organics/SVOC	1 item
Analysis Date	TCLP (Toxicity Characteristic Leaching Procedure) for Organics/SVOC	1 item

SAMPLE SUMMARY

HOLDING TIME SUMMARY

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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

PAH (Polynuclear Aromatic Hydrocarbons) in TCLP Extract — **Method: ME-(AU)-[ENV]AN420**

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
30-BH104_0.4-0.5	SE218963ARE.01	LB224320	20 Apr 2021	10 May 2021	11 May 2021	10 May 2021	19 Jun 2021	11 May 2021

TCLP (Toxicity Characteristic Leaching Procedure) for Organics/SVOC — **Method: ME-(AU)-[ENV]AN006**

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
30-BH104_0.4-0.5	SE218963ARE.01	LB224293	20 Apr 2021	10 May 2021	04 May 2021	10 May 2021†	04 May 2021	11 May 2021†

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 TCLP Extract — **Method: ME-(AU)-[ENV]AN420**

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	30-BH104_0.4-0.5	SE218963ARE.012	%	40 - 130%	52
d14-p-terphenyl (Surrogate)	30-BH104_0.4-0.5	SE218963ARE.012	%	40 - 130%	58
d5-nitrobenzene (Surrogate)	30-BH104_0.4-0.5	SE218963ARE.012	%	40 - 130%	46

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 TCLP Extract — **Method: ME-(AU)-[ENV]AN420**

Sample Number		Parameter	Units	LOR	Result
LB224320.001		Benzo(a)pyrene	µg/L	0.1	<0.1
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	56
		2-fluorobiphenyl (Surrogate)	%	-	68
		d14-p-terphenyl (Surrogate)	%	-	88

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

Original	Duplicate	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.

PAH (Polynuclear Aromatic Hydrocarbons) in TCLP Extract — **Method: ME-(AU)-[ENV]AN420**

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB224320.002		Benzo(a)pyrene	µg/L	0.1	33	40	60 - 140	83
	Surrogates	d5-nitrobenzene (Surrogate)	µg/L	-	0.3	0.5	40 - 130	56
		2-fluorobiphenyl (Surrogate)	µg/L	-	0.3	0.5	40 - 130	66
		d14-p-terphenyl (Surrogate)	µg/L	-	0.4	0.5	40 - 130	78

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.

QC Sample	Sample Number	Parameter	Units	LOR

MATRIX SPIKE DUPLICATES

SE218963ARE R0

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

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.

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Andrew Ibrahim
Client	EI AUSTRALIA
Address	SUITE 6.01 55 MILLER STREET PYRMONT NSW 2009
Telephone	61 2 95160722
Facsimile	(Not specified)
Email	andrew.ibrahim@eiaustralia.com.au
Project	**E25077 Hughes, Waratah, Wharf Melrose Pk**
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Samples	5

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	**SE218931 R0**
Date Received	23/4/2021
Date Reported	27/4/2021

COMMENTS

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

SIGNATORIES

Huong CRAWFORD
Production Manager

Field pH for Acid Sulphate Soil [AN104] Tested: 26/4/2021

PARAMETER	UOM	LOR	30-BH101_6.9-7.0 SOIL - 20/4/2021 SE218931.001	82-BH102M_5.4-5.5 SOIL - 20/4/2021 SE218931.002	30-BH106M_6.3-6.4 SOIL - 21/4/2021 SE218931.003	30-BH110M_7.0-7.1 SOIL - 21/4/2021 SE218931.004	30-BH111M_6.9-7.0 SOIL - 21/4/2021 SE218931.005
pHf	pH Units	-	**7.8**	**6.8**	**7.9**	**7.1**	**7.3**
pHfox	pH Units	-	**6.3**	**4.9**	**6.5**	**5.1**	**6.7**
Reaction Rate*	No unit	-	X	X	X	X	X
pH Difference*	pH Units	-10	**1.5**	**1.8**	**1.4**	**2.0**	**0.6**

METHOD	METHODOLOGY SUMMARY
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)

FOOTNOTES

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

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

Contact	Andrew Ibrahim
Client	EI AUSTRALIA
Address	SUITE 6.01 55 MILLER STREET PYRMONT NSW 2009
Telephone	61 2 95160722
Facsimile	(Not specified)
Email	andrew.ibrahim@eiaustralia.com.au
Project	**E25077 Hughes, Waratah, Wharf Melrose Pk**
Order Number	**E25077**
Samples	5

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	**SE218931A R0**
Date Received	28/4/2021
Date Reported	6/5/2021

COMMENTS

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

SPOCAS subcontracted to SGS Cairns, 2/58 Comport St, Portsmith QLD 4870, NATA Accreditation Number: 2562, Site Number: 3146. Repoprt Number CE152374

SIGNATORIES

Moisture Content [AN002] Tested: 6/5/2021

PARAMETER	UOM	LOR	30-BH101_6.9-7.0 SOIL - 20/4/2021 SE218931A.001	82-BH102M_5.4-5.5 SOIL - 20/4/2021 SE218931A.002	30-BH106M_6.3-6.4 SOIL - 21/4/2021 SE218931A.003	30-BH110M_7.0-7.1 SOIL - 21/4/2021 SE218931A.004
% Moisture	%w/w	0.5	**22**	**10**	**20**	**21**

TAA (Titratable Actual Acidity) [AN219] Tested: 6/5/2021

PARAMETER	UOM	LOR	30-BH101_6.9-7.0 SOIL - 20/4/2021 SE218931A.001	82-BH102M_5.4-5.5 SOIL - 20/4/2021 SE218931A.002	30-BH106M_6.3-6.4 SOIL - 21/4/2021 SE218931A.003	30-BH110M_7.0-7.1 SOIL - 21/4/2021 SE218931A.004
pH KCl*	pH Units	-	**8.7**	**9.6**	**9.1**	**8.0**
Titratable Actual Acidity	kg H2SO4/T	0.25	<0.25	<0.25	<0.25	<0.25
Titratable Actual Acidity (TAA) moles H+/tonne	moles H+/T	5	<5	<5	<5	<5
Titratable Actual Acidity (TAA) S%w/w	%w/w S	0.01	<0.01	<0.01	<0.01	<0.01
Sulphur (SKCl)	%w/w	0.005	**0.096**	**0.013**	**0.033**	**0.051**
Calcium (CaKCl)	%w/w	0.005	**0.26**	**0.17**	**0.28**	**0.15**
Magnesium (MgKCl)	%w/w	0.005	**0.054**	**0.020**	**0.023**	**0.060**

TPA (Titratable Peroxide Acidity) [AN218] Tested: 6/5/2021

PARAMETER	UOM	LOR	30-BH101_6.9-7.0 SOIL - 20/4/2021 SE218931A.001	82-BH102M_5.4-5.5 SOIL - 20/4/2021 SE218931A.002	30-BH106M_6.3-6.4 SOIL - 21/4/2021 SE218931A.003	30-BH110M_7.0-7.1 SOIL - 21/4/2021 SE218931A.004
Peroxide pH (pH Ox)	pH Units	-	**7.5**	**7.4**	**7.9**	**5.5**
TPA as kg H_2SO_4/tonne	kg H2SO4/T	0.25	<0.25	<0.25	<0.25	<0.25
TPA as moles H+/tonne	moles H+/T	5	<5	<5	<5	<5
TPA as S % W/W	%w/w S	0.01	<0.01	<0.01	<0.01	<0.01
Titratable Sulfidic Acidity as moles H+/tonne	moles H+/T	5	<5	<5	<5	<5
Titratable Sulfidic Acidity as kg H_2SO_4/tonne	kg H2SO4/T	0.25	<0.25	<0.25	<0.25	<0.25
Titratable Sulfidic Acidity as S % W/W	%w/w S	0.01	<0.01	<0.01	<0.01	<0.01
ANCE as % $CaCO_3$	% CaCO3	0.01	**0.30**	**0.55**	**0.75**	<0.01
ANCE as moles H+/tonne	moles H+/T	5	**60**	**110**	**150**	<5
ANCE as S % W/W	%w/w S	0.01	**0.10**	**0.18**	**0.24**	<0.01
Peroxide Oxidisable Sulphur (Spos)*	%w/w	0.005	**0.16**	<0.005	**0.024**	**0.12**
Peroxide Oxidisable Sulphur as moles H+/tonne*	moles H+/T	5	**101**	<5	**15**	**77**
Sulphur (Sp)	%w/w	0.005	**0.26**	**0.016**	**0.057**	**0.18**
Calcium (Cap)	%w/w	0.005	**0.41**	**0.28**	**0.52**	**0.21**
Reacted Calcium (CaA)*	%w/w	0.005	**0.15**	**0.10**	**0.25**	**0.067**
Reacted Calcium (CaA)*	moles H+/T	5	**76**	**52**	**120**	**34**
Magnesium (Mgp)	%w/w	0.005	**0.081**	**0.031**	**0.029**	**0.079**
Reacted Magnesium (MgA)*	%w/w	0.005	**0.027**	**0.011**	**0.006**	**0.019**
Reacted Magnesium (MgA)*	moles H+/T	5	**22**	**9**	<5	**15**
Net Acid Soluble Sulphur as % w/w*	%w/w	0.005	-	-	-	-
Net Acid Soluble Sulphur as moles H+/tonne*	moles H+/T	5	-	-	-	-

SPOCAS Net Acidity Calculations [AN220] Tested: 6/5/2021

PARAMETER	UOM	LOR	30-BH101_6.9-7.0 SOIL - 20/4/2021 SE218931A.001	82-BH102M_5.4-5.5 SOIL - 20/4/2021 SE218931A.002	30-BH106M_6.3-6.4 SOIL - 21/4/2021 SE218931A.003	30-BH110M_7.0-7.1 SOIL - 21/4/2021 SE218931A.004
s-Net Acidity	%w/w S	0.005	**0.097**	<0.005	<0.005	**0.12**
a-Net Acidity	moles H+/T	5	**61**	<5	<5	**77**
Liming Rate*	kg CaCO3/T	0.1	**4.5**	<0.1	<0.1	**5.8**
Verification s-Net Acidity*	%w/w S	-20	**-0.01**	**-0.12**	**-0.15**	**0.04**
a-Net Acidity without ANCE*	moles H+/T	5	**100**	<5	**15**	**77**
Liming Rate without ANCE*	kg CaCO3/T	0.1	**7.5**	<0.1	NA	**5.8**

METHOD	METHODOLOGY SUMMARY
AN002	The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.
AN218	Soil samples are subjected to extreme oxidising conditions using hydrogen peroxide. Continuous application of heat and peroxide ensure all sulfide is converted to sulfuric acid. Excess peroxide is broken down by a copper catalyst prior to titration for acidity. Calcium, magnesium, and sulfur are determined by ICP-OES. Also included is a carbonate modification step which, depending on pH after the initial oxidation, gives a measure of ANC.
AN219	Dried pulped sample is extracted for 4 hours in a 1 M KCl solution. The ratio of sample to solution is 1:40. The extract is titrated for acidity. Calcium, magnesium, and sulfur are determined by ICP-AES.
AN220	SPOCAS Suite: Scheme for the calculation of net acidities and liming rates using a Fineness Factor of 1.5.

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

Contact	Admin
Client	SGS I&E SYDNEY
Address	5058 201 I&E HSE SYDNEY (EX 5258) UNIT 16 33 MADDOX STREET ALEXANDRIA NSW 2015
Telephone	0285940400
Facsimile	0285940499
Email	au.environmental.sydney@sgs.com
Project	**E25077 Hughes, Waratah, Wharf Melrose Pk**
Order Number	**SE218931A**
Samples	5

LABORATORY DETAILS

Manager	Anthony Nilsson
Laboratory	SGS Cairns Environmental
Address	Unit 2, 58 Comport St Portsmith QLD 4870
Telephone	+61 07 4035 5111
Facsimile	+61 07 4035 5122
Email	AU.Environmental.Cairns@sgs.com
SGS Reference	**CE152374 R0**
Date Received	30 Apr 2021
Date Reported	05 May 2021

COMMENTS

Accredited for compliance with ISO/IEC 17025 - Testing. NATA accredited laboratory 2562(3146/19038)

SIGNATORIES

Anthony NILSSON
Operations Manager

Jon DICKER
Manager Northern QLD

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name CE152374.001 Soil 20 Apr 2021 SE218931A.001	CE152374.002 Soil 20 Apr 2021 SE218931A.002	CE152374.003 Soil 21 Apr 2021 SE218931A.003	CE152374.004 Soil 21 Apr 2021 SE218931A.004
Moisture Content Method: AN002 Tested: 30/4/2021						
% Moisture	%w/w	0.5	**22**	**10**	**20**	**21**
TAA (Titratable Actual Acidity) Method: AN219 Tested: 4/5/2021						
pH KCl	pH Units	-	**8.7**	**9.6**	**9.1**	**8.0**
Titratable Actual Acidity	kg H2SO4/T	0.25	<0.25	<0.25	<0.25	<0.25
Titratable Actual Acidity (TAA) moles H+/tonne	moles H+/T	5	<5	<5	<5	<5
Titratable Actual Acidity (TAA) S%w/w	%w/w S	0.01	<0.01	<0.01	<0.01	<0.01
Sulphur (SKCl)	%w/w	0.005	**0.096**	**0.013**	**0.033**	**0.051**
Calcium (CaKCl)	%w/w	0.005	**0.26**	**0.17**	**0.28**	**0.15**
Magnesium (MgKCl)	%w/w	0.005	**0.054**	**0.020**	**0.023**	**0.060**
TPA (Titratable Peroxide Acidity) Method: AN218 Tested: 4/5/2021						
Peroxide pH (pH Ox)	pH Units	-	**7.5**	**7.4**	**7.9**	**5.5**
TPA as kg H_2SO_4/tonne	kg H2SO4/T	0.25	<0.25	<0.25	<0.25	<0.25
TPA as moles H+/tonne	moles H+/T	5	<5	<5	<5	<5
TPA as S % W/W	%w/w S	0.01	<0.01	<0.01	<0.01	<0.01
Titratable Sulfidic Acidity as moles H+/tonne	moles H+/T	5	<5	<5	<5	<5
Titratable Sulfidic Acidity as kg H_2SO_4/tonne	kg H2SO4/T	0.25	<0.25	<0.25	<0.25	<0.25
Titratable Sulfidic Acidity as S % W/W	%w/w S	0.01	<0.01	<0.01	<0.01	<0.01
ANCE as % $CaCO_3$	% CaCO3	0.01	**0.30**	**0.55**	**0.75**	<0.01
ANCE as moles H+/tonne	moles H+/T	5	**60**	**110**	**150**	<5
ANCE as S % W/W	%w/w S	0.01	**0.10**	**0.18**	**0.24**	<0.01
Peroxide Oxidisable Sulphur (Spos)	%w/w	0.005	**0.16**	<0.005	**0.024**	**0.12**
Peroxide Oxidisable Sulphur as moles H+/tonne	moles H+/T	5	**101**	<5	**15**	**77**
Sulphur (Sp)	%w/w	0.005	**0.26**	**0.016**	**0.057**	**0.18**
Calcium (Cap)	%w/w	0.005	**0.41**	**0.28**	**0.52**	**0.21**
Reacted Calcium (CaA)	%w/w	0.005	**0.15**	**0.10**	**0.25**	**0.067**
Reacted Calcium (CaA)	moles H+/T	5	**76**	**52**	**120**	**34**
Magnesium (Mgp)	%w/w	0.005	**0.081**	**0.031**	**0.029**	**0.079**
Reacted Magnesium (MgA)	%w/w	0.005	**0.027**	**0.011**	**0.006**	**0.019**
Reacted Magnesium (MgA)	moles H+/T	5	**22**	**9**	<5	**15**
SPOCAS Net Acidity Calculations Method: AN220 Tested: 5/5/2021						
s-Net Acidity	%w/w S	0.005	**0.097**	<0.005	<0.005	**0.12**
a-Net Acidity	moles H+/T	5	**61**	<5	<5	**77**
Liming Rate	kg CaCO3/T	0.1	**4.5**	<0.1	<0.1	**5.8**
Verification s-Net Acidity	%w/w S	-20	**-0.01**	**-0.12**	**-0.15**	**0.04**
a-Net Acidity without ANCE	moles H+/T	5	**100**	<5	**15**	**77**
Liming Rate without ANCE	kg CaCO3/T	0.1	**7.5**	<0.1	NA	**5.8**

Parameter	Units	LOR	Sample Number CE152374.005 Sample Matrix Soil Sample Date 21 Apr 2021 Sample Name SE218931A.005
Moisture Content Method: AN002 Tested: 4/5/2021			
% Moisture	%w/w	0.5	-
TAA (Titratable Actual Acidity) Method: AN219 Tested: 5/5/2021			
pH KCl	pH Units	-	-
Titratable Actual Acidity	kg H2SO4/T	0.25	-
Titratable Actual Acidity (TAA) moles H+/tonne	moles H+/T	5	-
Titratable Actual Acidity (TAA) S%w/w	%w/w S	0.01	-
Sulphur (SKCl)	%w/w	0.005	-
Calcium (CaKCl)	%w/w	0.005	-
Magnesium (MgKCl)	%w/w	0.005	-
TPA (Titratable Peroxide Acidity) Method: AN218 Tested: 5/5/2021			
Peroxide pH (pH Ox)	pH Units	-	-
TPA as kg H_2SO_4/tonne	kg H2SO4/T	0.25	-
TPA as moles H+/tonne	moles H+/T	5	-
TPA as S % W/W	%w/w S	0.01	-
Titratable Sulfidic Acidity as moles H+/tonne	moles H+/T	5	-
Titratable Sulfidic Acidity as kg H_2SO_4/tonne	kg H2SO4/T	0.25	-
Titratable Sulfidic Acidity as S % W/W	%w/w S	0.01	-
ANCE as % $CaCO_3$	% CaCO3	0.01	-
ANCE as moles H+/tonne	moles H+/T	5	-
ANCE as S % W/W	%w/w S	0.01	-
Peroxide Oxidisable Sulphur (Spos)	%w/w	0.005	-
Peroxide Oxidisable Sulphur as moles H+/tonne	moles H+/T	5	-
Sulphur (Sp)	%w/w	0.005	-
Calcium (Cap)	%w/w	0.005	-
Reacted Calcium (CaA)	%w/w	0.005	-
Reacted Calcium (CaA)	moles H+/T	5	-
Magnesium (Mgp)	%w/w	0.005	-
Reacted Magnesium (MgA)	%w/w	0.005	-
Reacted Magnesium (MgA)	moles H+/T	5	-

Parameter	Units	LOR	Sample Number CE152374.005 Sample Matrix Soil Sample Date 21 Apr 2021 Sample Name SE218931A.005
SPOCAS Net Acidity Calculations Method: AN220 Tested: 5/5/2021			
s-Net Acidity	%w/w S	0.005	-
a-Net Acidity	moles H+/T	5	-
Liming Rate	kg CaCO3/T	0.1	-
Verification s-Net Acidity	%w/w S	-20	-
a-Net Acidity without ANCE	moles H+/T	5	-
Liming Rate without ANCE	kg CaCO3/T	0.1	-

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.

TAA (Titratable Actual Acidity) **Method: ME-(AU)-[ENV]AN219**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
pH KCl	LB089659	pH Units	-	6.0	7%	100%
Titratable Actual Acidity	LB089659	kg H2SO4/T	0.25	<0.25	0%	NA
Titratable Actual Acidity (TAA) moles H+/tonne	LB089659	moles H+/T	5	<5	0%	101%
Titratable Actual Acidity (TAA) S%w/w	LB089659	%w/w S	0.01	<0.01	0%	101%
Sulphur (SKCl)	LB089659	%w/w	0.005	<0.005	6%	87%
Calcium (CaKCl)	LB089659	%w/w	0.005	<0.005		94%
Magnesium (MgKCl)	LB089659	%w/w	0.005	<0.005		92%

TPA (Titratable Peroxide Acidity) **Method: ME-(AU)-[ENV]AN218**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
Peroxide pH (pH Ox)	LB089658	pH Units	-	5.3	0%	97%
TPA as kg H_2SO_4/tonne	LB089658	kg H2SO4/T	0.25	0.37	0%	118%
TPA as moles H+/tonne	LB089658	moles H+/T	5	7	0%	117%
TPA as S % W/W	LB089658	%w/w S	0.01	0.01	0%	117%
ANCE as % $CaCO_3$	LB089658	% CaCO3	0.01	<0.01	0%	
ANCE as moles H+/tonne	LB089658	moles H+/T	5	<5	0%	
ANCE as S % W/W	LB089658	%w/w S	0.01	<0.01	0%	
Sulphur (Sp)	LB089658	%w/w	0.005	<0.005	5%	90%
Calcium (Cap)	LB089658	%w/w	0.005	<0.005	4%	97%
Magnesium (Mgp)	LB089658	%w/w	0.005	<0.005	4%	95%

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.
AN218	Soil samples are subjected to extreme oxidising conditions using hydrogen peroxide. Continuous application of heat and peroxide ensure all sulfide is converted to sulfuric acid. Excess peroxide is broken down by a copper catalyst prior to titration for acidity. Calcium, magnesium, and sulfur are determined by ICP-OES. Also included is a carbonate modification step which, depending on pH after the initial oxidation, gives a measure of ANC.
AN219	Dried pulped sample is extracted for 4 hours in a 1 M KCl solution. The ratio of sample to solution is 1:40. The extract is titrated for acidity. Calcium, magnesium, and sulfur are determined by ICP-AES.
AN220	SPOCAS Suite: Scheme for the calculation of net acidities and liming rates using a Fineness Factor of 1.5.

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

Contact	Andrew Schmidt
Client	EI AUSTRALIA
Address	SUITE 6.01 55 MILLER STREET PYRMONT NSW 2009
Telephone	61 2 95160722
Facsimile	(Not specified)
Email	andrew.schmidt@eiaustralia.com.au
Project	**E25077 82 Hughes Ave, 30-32 Waratah St,**
Order Number	**E25077**
Samples	12

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	**SE219196 R0**
Date Received	3/5/2021
Date Reported	11/5/2021

COMMENTS

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

1,4-Dioxan subcontracted to SGS Melbourne, 10/585 Blackburn Road, Notting Hill, VIC, NATA Accreditation Numbe. 2562/14420. Report number ME320293

SIGNATORIES

Dong LIANG
Metals/Inorganics Team Leader

Ly Kim HA
Organic Section Head

Teresa NGUYEN
Organic Chemist

VOCs in Water [AN433] Tested: 6/5/2021

PARAMETER	UOM	LOR	GW-82_BH102M-1 WATER - 30/4/2021 SE219196.001	GW-Ei_MW01-1 WATER - 30/4/2021 SE219196.002	GW-Ei_MW03-1 WATER - 30/4/2021 SE219196.003	GW-30_BH102M-1 WATER - 30/4/2021 SE219196.004	GW-30_BH106M-1 WATER - 30/4/2021 SE219196.005
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	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dichlorodifluoromethane (CFC-12)	µg/L	5	<5	<5	<5	<5	<5
Chloromethane	µg/L	5	<5	<5	<5	<5	<5
Vinyl chloride (Chloroethene)	µg/L	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Bromomethane	µg/L	10	<10	<10	<10	<10	<10
Chloroethane	µg/L	5	<5	<5	<5	<5	<5
Trichlorofluoromethane	µg/L	1	<1	<1	<1	<1	<1
Acetone (2-propanone)	µg/L	10	<10	<10	<10	<10	<10
Iodomethane	µg/L	5	<5	<5	<5	<5	<5
1,1-dichloroethene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acrylonitrile	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dichloromethane (Methylene chloride)	µg/L	5	<5	<5	<5	<5	<5
Allyl chloride	µg/L	2	<2	<2	<2	<2	<2
Carbon disulfide	µg/L	2	<2	<2	<2	<2	<2
trans-1,2-dichloroethene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MtBE (Methyl-tert-butyl ether)	µg/L	2	<2	<2	<2	<2	<2
1,1-dichloroethane	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Vinyl acetate	µg/L	10	<10	<10	<10	<10	<10
MEK (2-butanone)	µg/L	10	<10	<10	<10	<10	<10
cis-1,2-dichloroethene	µg/L	0.5	<0.5	<0.5	<0.5	11	<0.5
Bromochloromethane	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroform (THM)	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,2-dichloropropane	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-dichloroethane	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-trichloroethane	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-dichloropropene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-dichloropropane	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene (Trichloroethylene,TCE)	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-nitropropane	µg/L	100	<100	<100	<100	<100	<100
Bromodichloromethane (THM)	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MIBK (4-methyl-2-pentanone)	µg/L	5	<5	<5	<5	<5	<5
cis-1,3-dichloropropene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,3-dichloropropene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-trichloroethane	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-dichloropropane	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane (THM)	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-hexanone (MBK)	µg/L	5	<5	<5	<5	<5	<5
1,2-dibromoethane (EDB)	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene (Perchloroethylene,PCE)	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1,2-tetrachloroethane	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorobenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform (THM)	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,4-dichloro-2-butene	µg/L	1	<1	<1	<1	<1	<1
Styrene (Vinyl benzene)	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2,2-tetrachloroethane	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,3-trichloropropane	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,4-dichloro-2-butene	µg/L	1	<1	<1	<1	<1	<1

VOCs in Water [AN433] Tested: 6/5/2021 (continued)

PARAMETER	UOM	LOR	GW-82_BH102M-1 WATER - 30/4/2021 SE219196.001	GW-Ei_MW01-1 WATER - 30/4/2021 SE219196.002	GW-Ei_MW03-1 WATER - 30/4/2021 SE219196.003	GW-30_BH102M-1 WATER - 30/4/2021 SE219196.004	GW-30_BH106M-1 WATER - 30/4/2021 SE219196.005
Isopropylbenzene (Cumene)	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromobenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
n-propylbenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-chlorotoluene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-chlorotoluene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3,5-trimethylbenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
tert-butylbenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-trimethylbenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
sec-butylbenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-dichlorobenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,4-dichlorobenzene	µg/L	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
p-isopropyltoluene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-dichlorobenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
n-butylbenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-dibromo-3-chloropropane	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-trichlorobenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobutadiene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2,3-trichlorobenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total VOC	µg/L	10	<10	<10	<10	22	<10

VOCs in Water [AN433] Tested: 6/5/2021 (continued)

PARAMETER	UOM	LOR	GW-30_BH110M-1 WATER - 30/4/2021 SE219196.006	GW-30_BH111M-1 WATER - 30/4/2021 SE219196.007	GW-112_BH113M-1 WATER - 30/4/2021 SE219196.008	GW_QD1 WATER - 30/4/2021 SE219196.009	GW_QR1 WATER - 30/4/2021 SE219196.010
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	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	<0.5	<0.5	<0.5	-	-
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	<0.5	<0.5	<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	<0.5	<0.5	<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	-	-
cis-1,4-dichloro-2-butene	µg/L	1	<1	<1	<1	-	-
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	-	-

VOCs in Water [AN433] Tested: 6/5/2021 (continued)

PARAMETER	UOM	LOR	GW-30_BH110M-1 WATER - 30/4/2021 SE219196.006	GW-30_BH111M-1 WATER - 30/4/2021 SE219196.007	GW-112_BH113M-1 WATER - 30/4/2021 SE219196.008	GW_QD1 WATER - 30/4/2021 SE219196.009	GW_QR1 WATER - 30/4/2021 SE219196.010
Isopropylbenzene (Cumene)	µg/L	0.5	<0.5	<0.5	<0.5	-	-
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	<10	<10	<10	-	-

VOCs in Water [AN433] Tested: 6/5/2021 (continued)

PARAMETER	UOM	LOR	GW_QTB1 WATER - 30/4/2021 SE219196.011	GW_QTS1 WATER - 30/4/2021 SE219196.012
Benzene	µg/L	0.5	<0.5	[100%]
Toluene	µg/L	0.5	<0.5	[104%]
Ethylbenzene	µg/L	0.5	<0.5	[103%]
m/p-xylene	µg/L	1	<1	[103%]
o-xylene	µg/L	0.5	<0.5	[104%]
Total Xylenes	µg/L	1.5	<1.5	-
Total BTEX	µg/L	3	<3	-
Naphthalene	µg/L	0.5	<0.5	[104%]
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	-	-
cis-1,4-dichloro-2-butene	µg/L	1	-	-
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	-	-

VOCs in Water [AN433] Tested: 6/5/2021 (continued)

PARAMETER	UOM	LOR	GW_QTB1 WATER - 30/4/2021 SE219196.011	GW_QTS1 WATER - 30/4/2021 SE219196.012
Isopropylbenzene (Cumene)	µg/L	0.5	-	-
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: 6/5/2021

PARAMETER	UOM	LOR	GW-82_BH102M-1 WATER - 30/4/2021 SE219196.001	GW-Ei_MW01-1 WATER - 30/4/2021 SE219196.002	GW-Ei_MW03-1 WATER - 30/4/2021 SE219196.003	GW-30_BH102M-1 WATER - 30/4/2021 SE219196.004	GW-30_BH106M-1 WATER - 30/4/2021 SE219196.005
TRH C6-C9	µg/L	40	<40	<40	<40	<40	<40
Benzene (F0)	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TRH C6-C10	µg/L	50	<50	<50	<50	<50	<50
TRH C6-C10 minus BTEX (F1)	µg/L	50	<50	<50	<50	<50	<50

PARAMETER	UOM	LOR	GW-30_BH110M-1 WATER - 30/4/2021 SE219196.006	GW-30_BH111M-1 WATER - 30/4/2021 SE219196.007	GW-112_BH113M-1 WATER - 30/4/2021 SE219196.008	GW_QD1 WATER - 30/4/2021 SE219196.009	GW_QR1 WATER - 30/4/2021 SE219196.010
TRH C6-C9	µg/L	40	<40	<40	<40	<40	<40
Benzene (F0)	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TRH C6-C10	µg/L	50	<50	<50	<50	<50	<50
TRH C6-C10 minus BTEX (F1)	µg/L	50	<50	<50	<50	<50	<50

TRH (Total Recoverable Hydrocarbons) in Water [AN403] Tested: 5/5/2021

PARAMETER	UOM	LOR	GW-82_BH102M-1 WATER - 30/4/2021 SE219196.001	GW-Ei_MW01-1 WATER - 30/4/2021 SE219196.002	GW-Ei_MW03-1 WATER - 30/4/2021 SE219196.003	GW-30_BH102M-1 WATER - 30/4/2021 SE219196.004	GW-30_BH106M-1 WATER - 30/4/2021 SE219196.005
TRH C10-C14	µg/L	50	<50	<50	<50	<50	<50
TRH C15-C28	µg/L	200	<200	<200	<200	<200	<200
TRH C29-C36	µg/L	200	<200	<200	<200	<200	<200
TRH C37-C40	µg/L	200	<200	<200	<200	<200	<200
TRH >C10-C16	µg/L	60	<60	<60	<60	<60	<60
TRH >C10-C16 - Naphthalene (F2)	µg/L	60	<60	<60	<60	<60	<60
TRH >C16-C34 (F3)	µg/L	500	<500	<500	<500	<500	<500
TRH >C34-C40 (F4)	µg/L	500	<500	<500	<500	<500	<500
TRH C10-C40	µg/L	320	<320	<320	<320	<320	<320

PARAMETER	UOM	LOR	GW-30_BH110M-1 WATER - 30/4/2021 SE219196.006	GW-30_BH111M-1 WATER - 30/4/2021 SE219196.007	GW-112_BH113M-1 WATER - 30/4/2021 SE219196.008	GW_QD1 WATER - 30/4/2021 SE219196.009	GW_QR1 WATER - 30/4/2021 SE219196.010
TRH C10-C14	µg/L	50	<50	<50	<50	<50	<50
TRH C15-C28	µg/L	200	<200	<200	<200	<200	<200
TRH C29-C36	µg/L	200	<200	<200	<200	<200	<200
TRH C37-C40	µg/L	200	<200	<200	<200	<200	<200
TRH >C10-C16	µg/L	60	<60	<60	<60	<60	<60
TRH >C10-C16 - Naphthalene (F2)	µg/L	60	<60	<60	<60	<60	<60
TRH >C16-C34 (F3)	µg/L	500	<500	<500	<500	<500	<500
TRH >C34-C40 (F4)	µg/L	500	<500	<500	<500	<500	<500
TRH C10-C40	µg/L	320	<320	<320	<320	<320	<320

PAH (Polynuclear Aromatic Hydrocarbons) in Water [AN420] Tested: 5/5/2021

PARAMETER	UOM	LOR	GW-82_BH102M-1 WATER - 30/4/2021 SE219196.001	GW-Ei_MW01-1 WATER - 30/4/2021 SE219196.002	GW-Ei_MW03-1 WATER - 30/4/2021 SE219196.003	GW-30_BH102M-1 WATER - 30/4/2021 SE219196.004	GW-30_BH106M-1 WATER - 30/4/2021 SE219196.005
Naphthalene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total PAH (18)	µg/L	1	<1	<1	<1	<1	<1

PARAMETER	UOM	LOR	GW-30_BH110M-1 WATER - 30/4/2021 SE219196.006	GW-30_BH111M-1 WATER - 30/4/2021 SE219196.007	GW-112_BH113M-1 WATER - 30/4/2021 SE219196.008
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(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

Trace Metals (Dissolved) in Water by ICPMS [AN318] Tested: 5/5/2021

PARAMETER	UOM	LOR	GW-82_BH102M-1 WATER - 30/4/2021 SE219196.001	GW-Ei_MW01-1 WATER - 30/4/2021 SE219196.002	GW-Ei_MW03-1 WATER - 30/4/2021 SE219196.003	GW-30_BH102M-1 WATER - 30/4/2021 SE219196.004	GW-30_BH106M-1 WATER - 30/4/2021 SE219196.005
Arsenic, As	µg/L	1	<1	4	2	80	7
Cadmium, Cd	µg/L	0.1	0.3	<0.1	1.1	<0.1	<0.1
Chromium, Cr	µg/L	1	1	<1	1	<1	<1
Copper, Cu	µg/L	1	5	7	21	15	9
Lead, Pb	µg/L	1	<1	<1	2	<1	<1
Nickel, Ni	µg/L	1	37	12	79	7	11
Zinc, Zn	µg/L	5	850	50	1400	83	99

PARAMETER	UOM	LOR	GW-30_BH110M-1 WATER - 30/4/2021 SE219196.006	GW-30_BH111M-1 WATER - 30/4/2021 SE219196.007	GW-112_BH113M-1 WATER - 30/4/2021 SE219196.008	GW_QD1 WATER - 30/4/2021 SE219196.009	GW_QR1 WATER - 30/4/2021 SE219196.010
Arsenic, As	µg/L	1	1	9	<1	1	<1
Cadmium, Cd	µg/L	0.1	<0.1	<0.1	0.1	<0.1	<0.1
Chromium, Cr	µg/L	1	2	<1	<1	2	<1
Copper, Cu	µg/L	1	6	1	15	2	<1
Lead, Pb	µg/L	1	<1	4	<1	<1	<1
Nickel, Ni	µg/L	1	6	2	8	5	<1
Zinc, Zn	µg/L	5	580	45	350	540	<5

Mercury (dissolved) in Water [AN311(Perth)/AN312] Tested: 7/5/2021

PARAMETER	UOM	LOR	GW-82_BH102M-1 WATER - 30/4/2021 SE219196.001	GW-Ei_MW01-1 WATER - 30/4/2021 SE219196.002	GW-Ei_MW03-1 WATER - 30/4/2021 SE219196.003	GW-30_BH102M-1 WATER - 30/4/2021 SE219196.004	GW-30_BH106M-1 WATER - 30/4/2021 SE219196.005
Mercury	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001

PARAMETER	UOM	LOR	GW-30_BH110M-1 WATER - 30/4/2021 SE219196.006	GW-30_BH111M-1 WATER - 30/4/2021 SE219196.007	GW-112_BH113M-1 WATER - 30/4/2021 SE219196.008	GW_QD1 WATER - 30/4/2021 SE219196.009	GW_QR1 WATER - 30/4/2021 SE219196.010
Mercury	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001

USEPA 8260B Additional VOCs in water [USEPA 8260B] Tested: 11/5/2021

PARAMETER	UOM	LOR	GW-82_BH102M-1 WATER - 30/4/2021 SE219196.001	GW-Ei_MW01-1 WATER - 30/4/2021 SE219196.002	GW-Ei_MW03-1 WATER - 30/4/2021 SE219196.003	GW-30_BH102M-1 WATER - 30/4/2021 SE219196.004	GW-30_BH106M-1 WATER - 30/4/2021 SE219196.005
1,4-Dioxane*	mg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01

PARAMETER	UOM	LOR	GW-30_BH110M-1 WATER - 30/4/2021 SE219196.006	GW-30_BH111M-1 WATER - 30/4/2021 SE219196.007	GW-112_BH113M-1 WATER - 30/4/2021 SE219196.008
1,4-Dioxane*	mg/L	0.01	<0.01	<0.01	<0.01

METHOD	METHODOLOGY SUMMARY
AN020	Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B.
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).
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).
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.
EPA8260B-ADD	This method is used to quantify additional Volatile Organic Compounds in aqueous samples using Gas Chromatography Mass Spectrometry coupled with a purge and trap sample concentrator. This method is based on USEPA 8260B (Volatile Organic Compounds by Gas Chromatography Mass Spectrometry GC/MS), using USEPA 5030B (Purge and Trap for aqueous samples).
EPA8260B-ADD	Aqueous samples are loaded onto the auto sampler in 40ml vials. A stream of helium is passed through a portion of the aqueous sample; the volatile components are ‘purged’ from the sample and are collected and concentrated on an adsorbent trap. The trap is rapidly heated and back-flushed with helium to ‘desorb’ the analytes onto the Gas Chromatographic column. The GC column separates the analytes and they are passed into the Mass Selective detector, which fragments the molecules and produces “mass spectra” of each compound.

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.

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ANALYTICAL REPORT

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	**E25077 82 Hughes Ave, 30-32 Waratah St,**	SGS Reference	**ME320293 R0**
Order Number	**SE219196**	Date Received	06 May 2021
Samples	12	Date Reported	11 May 2021

COMMENTS

Whilst SGS laboratories conform to ISO:17025 standards, results of analysis in this report fall outside of the current scope of NATA accreditation.

SIGNATORIES

Adam ATKINSON
Australian Chemistry Manager

Parameter	Units	LOR	Sample Number ME320293.001 Sample Matrix Water Sample Date 30 Apr 2021 Sample Name SE219196.001	ME320293.002 Water 30 Apr 2021 SE219196.002	ME320293.003 Water 30 Apr 2021 SE219196.003	ME320293.004 Water 30 Apr 2021 SE219196.004
USEPA 8260B Additional VOCs in water Method: USEPA 8260B Tested: 6/5/2021						
1,4-Dioxane	mg/L	0.01	<0.01	<0.01	<0.01	<0.01

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	ME320293.005 Water 30 Apr 2021 SE219196.005	ME320293.006 Water 30 Apr 2021 SE219196.006	ME320293.007 Water 30 Apr 2021 SE219196.007	ME320293.008 Water 30 Apr 2021 SE219196.008
USEPA 8260B Additional VOCs in water **Method: USEPA 8260B** **Tested: 6/5/2021**							
1,4-Dioxane	mg/L	0.01		<0.01	<0.01	<0.01	<0.01

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	ME320293.009 Water 30 Apr 2021 SE219196.009	ME320293.010 Water 30 Apr 2021 SE219196.010	ME320293.011 Water 30 Apr 2021 SE219196.011	ME320293.012 Water 30 Apr 2021 SE219196.012
USEPA 8260B Additional VOCs in water **Method: USEPA 8260B** **Tested: 11/5/2021**							
1,4-Dioxane	mg/L	0.01		-	-	-	-

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.

USEPA 8260B Additional VOCs in water **Method: USEPA 8260B**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
1,4-Dioxane	LB041093	mg/L	0.01	<0.01	0%	108%

METHOD	METHODOLOGY SUMMARY
EPA8260B-ADD	This method is used to quantify additional Volatile Organic Compounds in aqueous samples using Gas Chromatography Mass Spectrometry coupled with a purge and trap sample concentrator. This method is based on USEPA 8260B (Volatile Organic Compounds by Gas Chromatography Mass Spectrometry GC/MS), using USEPA 5030B (Purge and Trap for aqueous samples).
EPA8260B-ADD	Aqueous samples are loaded onto the auto sampler in 40ml vials. A stream of helium is passed through a portion of the aqueous sample; the volatile components are 'purged' from the sample and are collected and concentrated on an adsorbent trap. The trap is rapidly heated and back-flushed with helium to 'desorb' the analytes onto the Gas Chromatographic column. The GC column separates the analytes and they are passed into the Mass Selective detector, which fragments the molecules and produces "mass spectra" of each compound.

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.

eurofins | Environment Testing

ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
46-48 Banksia Road
Welshpool WA 6106
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: EI Australia
Address: Suite 6.01, 55 Miller Street
Pyrmont
NSW 2009

Project Name:
Project ID: E25077

Order No.:
Report #: 793536
Phone: 02 9516 0722
Fax:

Received: May 7, 2021 9:30 AM
Due: May 14, 2021
Priority: 5 Day
Contact Name: Andrew Ibrahim

Eurofins Analytical Services Manager : Elvis Dsouza

Sample Detail						Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271						
Sydney Laboratory - NATA Site # 18217						
Brisbane Laboratory - NATA Site # 20794						X
Perth Laboratory - NATA Site # 23736						
Mayfield Laboratory - NATA Site # 25079						
External Laboratory						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**	
1	GW-82-BH102M-1	Apr 30, 2021		Water	B21-My14281	X
2	GW-EI-MW01-1	Apr 30, 2021		Water	B21-My14282	X
3	GW-EI-MW03-1	Apr 30, 2021		Water	B21-My14283	X
4	GW-30-BH102M-1	Apr 30, 2021		Water	B21-My14284	X
5	GW-30-BH106M-1	Apr 30, 2021		Water	B21-My14285	X
6	GW-30-	Apr 30, 2021		Water	B21-My14286	X

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PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
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Melbourne Laboratory - NATA Site # 1254 & 14271						
Sydney Laboratory - NATA Site # 18217						
Brisbane Laboratory - NATA Site # 20794						X
Perth Laboratory - NATA Site # 23736						
Mayfield Laboratory - NATA Site # 25079						
External Laboratory						
	BH110M-1					
7	GW-30-BH111M-1	Apr 30, 2021		Water	B21-My14287	X
8	GW-30-BH104M-1	Apr 30, 2021		Water	B21-My14288	X
9	GW-30-BH113M-1	Apr 30, 2021		Water	B21-My14289	X
Test Counts						9

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Welshpool WA 6106
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NATA # 1261
Site # 23736

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Mayfield East NSW 2304
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NATA # 1261 Site # 25079

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Brisbane Laboratory - NATA Site # 20794						X
Perth Laboratory - NATA Site # 23736						
Mayfield Laboratory - NATA Site # 25079						
External Laboratory						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**	
1	GW-82-BH102M-1	Apr 30, 2021		Water	B21-My14281	X
2	GW-EI-MW01-1	Apr 30, 2021		Water	B21-My14282	X
3	GW-EI-MW03-1	Apr 30, 2021		Water	B21-My14283	X
4	GW-30-BH102M-1	Apr 30, 2021		Water	B21-My14284	X
5	GW-30-BH106M-1	Apr 30, 2021		Water	B21-My14285	X
6	GW-30-	Apr 30, 2021		Water	B21-My14286	X

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Received: May 7, 2021 9:30 AM
Due: May 14, 2021
Priority: 5 Day
Contact Name: Andrew Ibrahim

Eurofins Analytical Services Manager : Elvis Dsouza

Sample Detail						Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271						
Sydney Laboratory - NATA Site # 18217						
Brisbane Laboratory - NATA Site # 20794						X
Perth Laboratory - NATA Site # 23736						
Mayfield Laboratory - NATA Site # 25079						
External Laboratory						
	BH110M-1					
7	GW-30-BH111M-1	Apr 30, 2021		Water	B21-My14287	X
8	GW-30-BH104M-1	Apr 30, 2021		Water	B21-My14288	X
9	GW-30-BH113M-1	Apr 30, 2021		Water	B21-My14289	X
Test Counts						9

EI Australia
Suite 6.01, 55 Miller Street
Pyrmont
NSW 2009

NATA Accredited
Accreditation Number 1261
Site Number 20794

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

Attention: **Andrew Ibrahim**

Report **793536-W**
Project name
Project ID E25077
Received Date May 07, 2021

Client Sample ID			**GW-82-BH102M-1**	**GW-EI-MW01-1**	**GW-EI-MW03-1**	**GW-30-BH102M-1**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**B21-My14281**	**B21-My14282**	**B21-My14283**	**B21-My14284**
Date Sampled			**Apr 30, 2021**	**Apr 30, 2021**	**Apr 30, 2021**	**Apr 30, 2021**
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	0.06	0.06	0.10	[G10]< 0.08
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	0.02
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	102	95	115	102
13C5-PFPeA (surr.)	1	%	83	97	105	79
13C5-PFHxA (surr.)	1	%	87	105	108	102
13C4-PFHpA (surr.)	1	%	150	171	173	93
13C8-PFOA (surr.)	1	%	138	144	143	104
13C5-PFNA (surr.)	1	%	141	126	131	173
13C6-PFDA (surr.)	1	%	134	129	111	116
13C2-PFUnDA (surr.)	1	%	109	103	94	156
13C2-PFDoDA (surr.)	1	%	112	91	88	172
13C2-PFTeDA (surr.)	1	%	62	37	42	INT
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	96	98	84	INT
D3-N-MeFOSA (surr.)	1	%	86	90	86	INT

Client Sample ID			GW-82-BH102M-1	GW-EI-MW01-1	GW-EI-MW03-1	GW-30-BH102M-1
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-My14281	B21-My14282	B21-My14283	B21-My14284
Date Sampled			Apr 30, 2021	Apr 30, 2021	Apr 30, 2021	Apr 30, 2021
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
D5-N-EtFOSA (surr.)	1	%	171	184	171	INT
D7-N-MeFOSE (surr.)	1	%	69	72	65	INT
D9-N-EtFOSE (surr.)	1	%	67	71	64	199
D5-N-EtFOSAA (surr.)	1	%	19	36	40	82
D3-N-MeFOSAA (surr.)	1	%	22	36	42	82
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	0.02
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	[N09]0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	[N09]0.07
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	[N09]< 0.01	< 0.01	< 0.01	[N09]0.13
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	146	141	136	110
18O2-PFHxS (surr.)	1	%	121	124	114	107
13C8-PFOS (surr.)	1	%	102	99	94	86
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTS (surr.)	1	%	42	32	37	116
13C2-6:2 FTSA (surr.)	1	%	41	30	31	138
13C2-8:2 FTSA (surr.)	1	%	53	48	29	82
13C2-10:2 FTSA (surr.)	1	%	35	35	28	95
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	0.2
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	0.13
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	0.2
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	0.06	0.06	0.1	0.24
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	0.1	0.26

Client Sample ID			GW-30-BH106M-1	GW-30-BH110M-1	GW-30-BH111M-1	GW-30-BH104M-1
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-My14285	B21-My14286	B21-My14287	B21-My14288
Date Sampled			Apr 30, 2021	Apr 30, 2021	Apr 30, 2021	Apr 30, 2021
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	[G10]< 0.08	[G10]< 0.08	0.95	0.13
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	0.02	1.5	0.05
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	0.01	4.8	0.05
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	[N09]0.74	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	[N09]0.03	[N09]1.7	< 0.01

Client Sample ID			GW-30-BH106M-1	GW-30-BH110M-1	GW-30-BH111M-1	GW-30-BH104M-1
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			B21-My14285	B21-My14286	B21-My14287	B21-My14288
Date Sampled			Apr 30, 2021	Apr 30, 2021	Apr 30, 2021	Apr 30, 2021
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	[N09]0.26	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	82	81	62	55
13C5-PFPeA (surr.)	1	%	68	72	108	43
13C5-PFHxA (surr.)	1	%	95	82	106	56
13C4-PFHpA (surr.)	1	%	83	86	99	74
13C8-PFOA (surr.)	1	%	104	92	43	92
13C5-PFNA (surr.)	1	%	170	155	89	156
13C6-PFDA (surr.)	1	%	92	84	45	99
13C2-PFUnDA (surr.)	1	%	120	116	87	126
13C2-PFDoDA (surr.)	1	%	142	97	121	154
13C2-PFTeDA (surr.)	1	%	158	77	135	171
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	161	163	147	179
D3-N-MeFOSA (surr.)	1	%	180	92	138	140
D5-N-EtFOSA (surr.)	1	%	130	85	135	110
D7-N-MeFOSE (surr.)	1	%	131	85	115	INT
D9-N-EtFOSE (surr.)	1	%	88	80	74	121
D5-N-EtFOSAA (surr.)	1	%	93	138	147	124
D3-N-MeFOSAA (surr.)	1	%	85	106	129	103
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	< 0.01	3.8	0.12
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	0.02	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	3.2	0.11
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	[N09]< 0.01	[N09]3.9	[N09]0.03
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	[N09]0.02	[N09]28	[N09]0.09
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	[N09]0.48	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	[N09]0.02	[N09]29	[N09]0.02
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	119	122	68	96
18O2-PFHxS (surr.)	1	%	95	93	67	89
13C8-PFOS (surr.)	1	%	82	75	75	81

Client Sample ID			GW-30-BH106M-1	GW-30-BH110M-1	GW-30-BH111M-1	GW-30-BH104M-1
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**B21-My14285**	**B21-My14286**	**B21-My14287**	**B21-My14288**
Date Sampled			**Apr 30, 2021**	**Apr 30, 2021**	**Apr 30, 2021**	**Apr 30, 2021**
Test/Reference	LOR	Unit				
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	0.38	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	0.05	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTS (surr.)	1	%	88	90	69	68
13C2-6:2 FTSA (surr.)	1	%	119	86	82	123
13C2-8:2 FTSA (surr.)	1	%	58	46	41	67
13C2-10:2 FTSA (surr.)	1	%	70	39	51	74
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	0.04	57	0.11
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	0.05	30.7	0.02
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	0.07	58.7	0.11
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.08	0.1	70.92	0.46
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	0.1	78.79	0.6

Client Sample ID			GW-30-BH113M-1
Sample Matrix			**Water**
Eurofins Sample No.			**B21-My14289**
Date Sampled			**Apr 30, 2021**
Test/Reference	LOR	Unit	
Perfluoroalkyl carboxylic acids (PFCAs)			
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	0.09
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	0.07
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	0.03
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01
13C4-PFBA (surr.)	1	%	106
13C5-PFPeA (surr.)	1	%	71
13C5-PFHxA (surr.)	1	%	85
13C4-PFHpA (surr.)	1	%	76
13C8-PFOA (surr.)	1	%	91
13C5-PFNA (surr.)	1	%	160
13C6-PFDA (surr.)	1	%	89
13C2-PFUnDA (surr.)	1	%	119
13C2-PFDoDA (surr.)	1	%	132
13C2-PFTeDA (surr.)	1	%	159

Client Sample ID			GW-30-BH113M-1
Sample Matrix			**Water**
Eurofins Sample No.			**B21-My14289**
Date Sampled			**Apr 30, 2021**
Test/Reference	LOR	Unit	
Perfluoroalkyl sulfonamido substances			
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	0.05	ug/L	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	0.05	ug/L	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05
13C8-FOSA (surr.)	1	%	121
D3-N-MeFOSA (surr.)	1	%	160
D5-N-EtFOSA (surr.)	1	%	167
D7-N-MeFOSE (surr.)	1	%	120
D9-N-EtFOSE (surr.)	1	%	98
D5-N-EtFOSAA (surr.)	1	%	65
D3-N-MeFOSAA (surr.)	1	%	65
Perfluoroalkyl sulfonic acids (PFSAs)			
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01
13C3-PFBS (surr.)	1	%	100
18O2-PFHxS (surr.)	1	%	93
13C8-PFOS (surr.)	1	%	79
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	0.05	ug/L	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01
13C2-4:2 FTS (surr.)	1	%	89
13C2-6:2 FTSA (surr.)	1	%	125
13C2-8:2 FTSA (surr.)	1	%	59
13C2-10:2 FTSA (surr.)	1	%	55
PFASs Summations			
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	0.19
Sum of PFASs (n=30)*	0.1	ug/L	0.19

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Brisbane	May 08, 2021	14 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Brisbane	May 08, 2021	14 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Brisbane	May 08, 2021	14 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Brisbane	May 08, 2021	14 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

eurofins | Environment Testing

ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
46-48 Banksia Road
Welshpool WA 6106
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: EI Australia
Address: Suite 6.01, 55 Miller Street
Pyrmont
NSW 2009

Project Name:
Project ID: E25077

Order No.:
Report #: 793536
Phone: 02 9516 0722
Fax:

Received: May 7, 2021 9:30 AM
Due: May 14, 2021
Priority: 5 Day
Contact Name: Andrew Ibrahim

Eurofins Analytical Services Manager : Elvis Dsouza

Sample Detail						Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271						
Sydney Laboratory - NATA Site # 18217						
Brisbane Laboratory - NATA Site # 20794						X
Perth Laboratory - NATA Site # 23736						
Mayfield Laboratory - NATA Site # 25079						
External Laboratory						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**	
1	GW-82-BH102M-1	Apr 30, 2021		Water	B21-My14281	X
2	GW-EI-MW01-1	Apr 30, 2021		Water	B21-My14282	X
3	GW-EI-MW03-1	Apr 30, 2021		Water	B21-My14283	X
4	GW-30-BH102M-1	Apr 30, 2021		Water	B21-My14284	X
5	GW-30-BH106M-1	Apr 30, 2021		Water	B21-My14285	X
6	GW-30-	Apr 30, 2021		Water	B21-My14286	X

eurofins | Environment Testing

ABN: 50 005 085 521 web: www.eurofins.com.au email: EnviroSales@eurofins.com

Australia

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
46-48 Banksia Road
Welshpool WA 6106
Phone : +61 8 9251 9600
NATA # 1261
Site # 23736

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

New Zealand

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: EI Australia
Address: Suite 6.01, 55 Miller Street
Pyrmont
NSW 2009

Project Name:
Project ID: E25077

Order No.:
Report #: 793536
Phone: 02 9516 0722
Fax:

Received: May 7, 2021 9:30 AM
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Priority: 5 Day
Contact Name: Andrew Ibrahim

Eurofins Analytical Services Manager : Elvis Dsouza

Sample Detail						Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271						
Sydney Laboratory - NATA Site # 18217						
Brisbane Laboratory - NATA Site # 20794						X
Perth Laboratory - NATA Site # 23736						
Mayfield Laboratory - NATA Site # 25079						
External Laboratory						
	BH110M-1					
7	GW-30-BH111M-1	Apr 30, 2021		Water	B21-My14287	X
8	GW-30-BH104M-1	Apr 30, 2021		Water	B21-My14288	X
9	GW-30-BH113M-1	Apr 30, 2021		Water	B21-My14289	X
Test Counts						9

Internal Quality Control Review and Glossary

General

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

Holding Times

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

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

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

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

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

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling.Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " -" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	142			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	122			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	126			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	115			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	102			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	118			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	119			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	132			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	143			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	97			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	131			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	125			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	132			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	116			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	%	113			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	%	137			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	102			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	120			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	103			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	110			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	121			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	106			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	116			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	86			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	117			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	80			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	118			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	%	111			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	108			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	125			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	B21-My14283	CP	%	60			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	B21-My14283	CP	%	106			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	B21-My14283	CP	%	115			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	B21-My14283	CP	%	100			50-150	Pass	
Perfluorooctanoic acid (PFOA)	B21-My14283	CP	%	87			50-150	Pass	
Perfluorononanoic acid (PFNA)	B21-My14283	CP	%	109			50-150	Pass	
Perfluorodecanoic acid (PFDA)	B21-My14283	CP	%	98			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	B21-My14283	CP	%	125			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	B21-My14283	CP	%	115			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	B21-My14283	CP	%	77			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	B21-My14283	CP	%	113			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	B21-My14283	CP	%	104			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	B21-My14283	CP	%	79			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	B21-My14283	CP	%	54			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	B21-My14283	CP	%	86			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	B21-My14283	CP	%	80			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	B21-My14283	CP	%	101			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	B21-My14283	CP	%	105			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	B21-My14283	CP	%	84			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	B21-My14283	CP	%	91			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	B21-My14283	CP	%	103			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	B21-My14283	CP	%	113			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	B21-My14283	CP	%	93			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	B21-My14283	CP	%	78			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	B21-My14283	CP	%	99			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	B21-My14283	CP	%	79			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	B21-My14283	CP	%	103			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	B21-My14283	CP	%	101			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	B21-My14283	CP	%	102			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	B21-My14283	CP	%	108			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	B21-My14286	CP	%	111			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	B21-My14286	CP	%	107			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	B21-My14286	CP	%	121			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	B21-My14286	CP	%	103			50-150	Pass	
Perfluorooctanoic acid (PFOA)	B21-My14286	CP	%	111			50-150	Pass	
Perfluorononanoic acid (PFNA)	B21-My14286	CP	%	119			50-150	Pass	
Perfluorodecanoic acid (PFDA)	B21-My14286	CP	%	121			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	B21-My14286	CP	%	117			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	B21-My14286	CP	%	138			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	B21-My14286	CP	%	118			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	B21-My14286	CP	%	132			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	B21-My14286	CP	%	100			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	B21-My14286	CP	%	98			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	B21-My14286	CP	%	117			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	B21-My14286	CP	%	76			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	B21-My14286	CP	%	101			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	B21-My14286	CP	%	142			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	B21-My14286	CP	%	118			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	B21-My14286	CP	%	101			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	B21-My14286	CP	%	119			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	B21-My14286	CP	%	132			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	B21-My14286	CP	%	122			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	B21-My14286	CP	%	110			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	B21-My14286	CP	%	112			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	B21-My14286	CP	%	109			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	B21-My14286	CP	%	77			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	B21-My14286	CP	%	139			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	B21-My14286	CP	%	137			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	B21-My14286	CP	%	137			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	B21-My14286	CP	%	138			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	B21-My14281	CP	ug/L	0.06	0.05	6.0	30%	Pass	
Perfluoropentanoic acid (PFPeA)	B21-My14281	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	B21-My14281	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	B21-My14281	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	B21-My14281	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	B21-My14281	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	B21-My14281	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	B21-My14281	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	B21-My14281	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	B21-My14281	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	B21-My14281	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	B21-My14281	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	B21-My14281	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	B21-My14281	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	B21-My14281	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	B21-My14281	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	B21-My14281	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	B21-My14281	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	B21-My14281	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	B21-My14281	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	B21-My14281	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	B21-My14281	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	B21-My14281	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	B21-My14281	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	B21-My14281	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	B21-My14281	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	B21-My14281	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	B21-My14281	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	B21-My14281	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	B21-My14281	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	B21-My14282	CP	ug/L	0.06	0.06	2.0	30%	Pass	
Perfluoropentanoic acid (PFPeA)	B21-My14282	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	B21-My14282	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	B21-My14282	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	B21-My14282	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	B21-My14282	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	B21-My14282	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	B21-My14282	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	B21-My14282	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	B21-My14282	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	B21-My14282	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	B21-My14282	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	B21-My14282	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	B21-My14282	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	B21-My14282	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	B21-My14282	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	B21-My14282	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	B21-My14282	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	B21-My14282	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	B21-My14282	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	B21-My14282	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	B21-My14282	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	B21-My14282	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	B21-My14282	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	B21-My14282	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	B21-My14282	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	B21-My14282	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	B21-My14282	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	B21-My14282	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	B21-My14282	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	B21-My14284	CP	ug/L	< 0.08	< 0.08	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	B21-My14284	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	B21-My14284	CP	ug/L	0.02	0.02	7.0	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	B21-My14284	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	B21-My14284	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	B21-My14284	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	B21-My14284	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	B21-My14284	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	B21-My14284	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	B21-My14284	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	B21-My14284	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	B21-My14284	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	B21-My14284	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	B21-My14284	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	B21-My14284	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	B21-My14284	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	B21-My14284	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	B21-My14284	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	B21-My14284	CP	ug/L	0.02	0.02	4.0	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	B21-My14284	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	B21-My14284	CP	ug/L	0.01	0.01	23	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	B21-My14284	CP	ug/L	0.01	0.01	20	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	B21-My14284	CP	ug/L	0.07	0.07	1.0	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	B21-My14284	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	B21-My14284	CP	ug/L	0.13	0.13	2.0	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	B21-My14284	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	B21-My14284	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	B21-My14284	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	B21-My14284	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	B21-My14284	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	B21-My14285	CP	ug/L	< 0.08	< 0.08	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	B21-My14285	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	B21-My14285	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	B21-My14285	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	B21-My14285	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	B21-My14285	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	B21-My14285	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	B21-My14285	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	B21-My14285	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	B21-My14285	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	B21-My14285	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	B21-My14285	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	B21-My14285	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	B21-My14285	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	B21-My14285	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	B21-My14285	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	B21-My14285	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	B21-My14285	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	B21-My14285	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	B21-My14285	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	B21-My14285	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	B21-My14285	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	B21-My14285	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	B21-My14285	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	B21-My14285	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	B21-My14285	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	B21-My14285	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	B21-My14285	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	B21-My14285	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	B21-My14285	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
G10	The LOR has been raised due to suspected contamination
N09	Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

Authorised by:

Elvis Dsouza	Analytical Services Manager
Sarah McCallion	Senior Analyst-PFAS (QLD)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 267639

Client Details

Client	EI Australia
Attention	Andrew Ibrahim
Address	Suite 6.01, 55 Miller Street, Pyrmont, NSW, 2009

Sample Details

Your Reference	**E25077**
Number of Samples	4 soil
Date samples received	23/04/2021
Date completed instructions received	26/04/2021

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	03/05/2021
Date of Issue	03/05/2021

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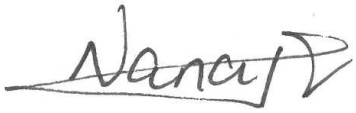
Results Approved By
Dragana Tomas, Senior Chemist
Giovanni Agosti, Group Technical Manager
Manju Dewendrage, Chemist
Steven Luong, Organics Supervisor

Authorised By



Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil			
Our Reference		267639-1	267639-2
Your Reference	UNITS	QT1	QT2
Date Sampled		20/04/2021	22/04/2021
Type of sample		soil	soil
Date extracted	-	28/04/2021	28/04/2021
Date analysed	-	29/04/2021	29/04/2021
TRH C_6 - C_9	mg/kg	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25
Benzene	mg/kg	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1
m+p-xylene	mg/kg	<2	<2
o-Xylene	mg/kg	<1	<1
naphthalene	mg/kg	<1	<1
Total +ve Xylenes	mg/kg	<3	<3
Surrogate aaa-Trifluorotoluene	%	110	118

svTRH (C10-C40) in Soil			
Our Reference		267639-1	267639-2
Your Reference	UNITS	QT1	QT2
Date Sampled		20/04/2021	22/04/2021
Type of sample		soil	soil
Date extracted	-	28/04/2021	28/04/2021
Date analysed	-	29/04/2021	29/04/2021
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
TRH >C_{10} -C_{16}	mg/kg	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	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	%	105	99

PAHs in Soil			
Our Reference		267639-1	267639-2
Your Reference	UNITS	QT1	QT2
Date Sampled		20/04/2021	22/04/2021
Type of sample		soil	soil
Date extracted	-	28/04/2021	28/04/2021
Date analysed	-	28/04/2021	28/04/2021
Naphthalene	mg/kg	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1
Fluoranthene	mg/kg	0.2	<0.1
Pyrene	mg/kg	0.3	<0.1
Benzo(a)anthracene	mg/kg	0.2	<0.1
Chrysene	mg/kg	0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	0.3	<0.2
Benzo(a)pyrene	mg/kg	0.2	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	0.1	<0.1
Total +ve PAH's	mg/kg	1.6	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	124	122

Acid Extractable metals in soil			
Our Reference		267639-1	267639-2
Your Reference	UNITS	QT1	QT2
Date Sampled		20/04/2021	22/04/2021
Type of sample		soil	soil
Date prepared	-	30/04/2021	30/04/2021
Date analysed	-	30/04/2021	30/04/2021
Arsenic	mg/kg	<4	5
Cadmium	mg/kg	<0.4	<0.4
Chromium	mg/kg	18	13
Copper	mg/kg	29	21
Lead	mg/kg	38	66
Mercury	mg/kg	0.1	0.2
Nickel	mg/kg	7	10
Zinc	mg/kg	45	59

Moisture			
Our Reference		267639-1	267639-2
Your Reference	UNITS	QT1	QT2
Date Sampled		20/04/2021	22/04/2021
Type of sample		soil	soil
Date prepared	-	28/04/2021	28/04/2021
Date analysed	-	29/04/2021	29/04/2021
Moisture	%	12	16

Method ID	Methodology Summary
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
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-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL'values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero'values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL'values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
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.

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. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			28/04/2021	[NT]	[NT]	[NT]	[NT]	28/04/2021	[NT]
Date analysed	-			29/04/2021	[NT]	[NT]	[NT]	[NT]	29/04/2021	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	111	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	111	[NT]
Benzene	mg/kg	0.2	Org-023	<0.2	[NT]	[NT]	[NT]	[NT]	100	[NT]
Toluene	mg/kg	0.5	Org-023	<0.5	[NT]	[NT]	[NT]	[NT]	104	[NT]
Ethylbenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	114	[NT]
m+p-xylene	mg/kg	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	119	[NT]
o-Xylene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	115	[NT]
naphthalene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	112	[NT]	[NT]	[NT]	[NT]	101	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			28/04/2021	[NT]	[NT]	[NT]	[NT]	28/04/2021	[NT]
Date analysed	-			28/04/2021	[NT]	[NT]	[NT]	[NT]	28/04/2021	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	118	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	107	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	123	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	118	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	107	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	123	[NT]
Surrogate o-Terphenyl	%		Org-020	103	[NT]	[NT]	[NT]	[NT]	131	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			28/04/2021	[NT]	[NT]	[NT]	[NT]	28/04/2021	[NT]
Date analysed	-			28/04/2021	[NT]	[NT]	[NT]	[NT]	28/04/2021	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	94	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	81	[NT]
Fluorene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	88	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	103	[NT]
Anthracene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	89	[NT]
Pyrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	93	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	69	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	88	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	116	[NT]	[NT]	[NT]	[NT]	126	[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	-			30/04/2021	[NT]	[NT]	[NT]	[NT]	30/04/2021	[NT]
Date analysed	-			30/04/2021	[NT]	[NT]	[NT]	[NT]	30/04/2021	[NT]
Arsenic	mg/kg	4	Metals-020	<4	[NT]	[NT]	[NT]	[NT]	101	[NT]
Cadmium	mg/kg	0.4	Metals-020	<0.4	[NT]	[NT]	[NT]	[NT]	102	[NT]
Chromium	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	108	[NT]
Copper	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	105	[NT]
Lead	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	101	[NT]
Mercury	mg/kg	0.1	Metals-021	<0.1	[NT]	[NT]	[NT]	[NT]	119	[NT]
Nickel	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	104	[NT]
Zinc	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	101	[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.

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.

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 268247

Client Details

Client	EI Australia
Attention	Lab Email
Address	Suite 6.01, 55 Miller Street, Pyrmont, NSW, 2009

Sample Details

Your Reference	**E25077, Melrose Park**
Number of Samples	1 Water
Date samples received	04/05/2021
Date completed instructions received	04/05/2021

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	11/05/2021
Date of Issue	11/05/2021

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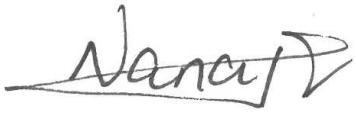
Results Approved By
Dragana Tomas, Senior Chemist
Giovanni Agosti, Group Technical Manager

Authorised By



Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Water		
Our Reference		268247-1
Your Reference	UNITS	GW-QT1
Date Sampled		30/04/2021
Type of sample		Water
Date extracted	-	10/05/2021
Date analysed	-	10/05/2021
TRH C_6 - C_9	µg/L	<10
TRH C_6 - C_{10}	µg/L	<10
TRH C_6 - C_{10} less BTEX (F1)	µg/L	<10
Benzene	µg/L	<1
Toluene	µg/L	<1
Ethylbenzene	µg/L	<1
m+p-xylene	µg/L	<2
o-xylene	µg/L	<1
Naphthalene	µg/L	<1
Surrogate Dibromofluoromethane	%	107
Surrogate toluene-d8	%	127
Surrogate 4-BFB	%	116

svTRH (C10-C40) in Water		
Our Reference		268247-1
Your Reference	UNITS	GW-QT1
Date Sampled		30/04/2021
Type of sample		Water
Date extracted	-	05/05/2021
Date analysed	-	06/05/2021
TRH C_{10} - C_{14}	µg/L	<50
TRH C_{15} - C_{28}	µg/L	<100
TRH C_{29} - C_{36}	µg/L	<100
TRH >C_{10} - C_{16}	µg/L	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	µg/L	<50
TRH >C_{16} - C_{34}	µg/L	<100
TRH >C_{34} - C_{40}	µg/L	<100
Surrogate o-Terphenyl	%	87

HM in water - dissolved		
Our Reference	UNITS	268247-1
Your Reference		GW-QT1
Date Sampled		30/04/2021
Type of sample		Water
Date prepared	-	05/05/2021
Date analysed	-	05/05/2021
Arsenic-Dissolved	µg/L	2
Cadmium-Dissolved	µg/L	<0.1
Chromium-Dissolved	µg/L	2
Copper-Dissolved	µg/L	1
Lead-Dissolved	µg/L	<1
Mercury-Dissolved	µg/L	<0.05
Nickel-Dissolved	µg/L	5
Zinc-Dissolved	µg/L	720

Method ID	Methodology Summary
Metals-021	Determination of Mercury by Cold Vapour AAS.
Metals-022	Determination of various metals by ICP-MS.
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-023	Water samples are analysed directly by purge and trap GC-MS.
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: vTRH(C6-C10)/BTEXN in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			10/05/2021	[NT]	[NT]	[NT]	[NT]	10/05/2021	[NT]
Date analysed	-			10/05/2021	[NT]	[NT]	[NT]	[NT]	10/05/2021	[NT]
TRH C_6 - C_9	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	89	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	89	[NT]
Benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	94	[NT]
Toluene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	75	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	90	[NT]
m+p-xylene	µg/L	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	94	[NT]
o-xylene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	87	[NT]
Naphthalene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	107	[NT]	[NT]	[NT]	[NT]	108	[NT]
Surrogate toluene-d8	%		Org-023	109	[NT]	[NT]	[NT]	[NT]	102	[NT]
Surrogate 4-BFB	%		Org-023	112	[NT]	[NT]	[NT]	[NT]	107	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	268247-1
Date extracted	-			04/05/2021	1	05/05/2021	05/05/2021		05/05/2021	05/05/2021
Date analysed	-			05/05/2021	1	06/05/2021	06/05/2021		06/05/2021	06/05/2021
TRH C_{10} - C_{14}	µg/L	50	Org-020	<50	1	<50	<50	0	93	98
TRH C_{15} - C_{28}	µg/L	100	Org-020	<100	1	<100	<100	0	77	86
TRH C_{29} - C_{36}	µg/L	100	Org-020	<100	1	<100	<100	0	108	86
TRH >C_{10} - C_{16}	µg/L	50	Org-020	<50	1	<50	<50	0	93	98
TRH >C_{16} - C_{34}	µg/L	100	Org-020	<100	1	<100	<100	0	77	86
TRH >C_{34} - C_{40}	µg/L	100	Org-020	<100	1	<100	<100	0	108	86
Surrogate o-Terphenyl	%		Org-020	85	1	87	118	30	102	107

QUALITY CONTROL: HM in water - dissolved						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			05/05/2021	[NT]	[NT]	[NT]	[NT]	05/05/2021	[NT]
Date analysed	-			05/05/2021	[NT]	[NT]	[NT]	[NT]	05/05/2021	[NT]
Arsenic-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Cadmium-Dissolved	µg/L	0.1	Metals-022	<0.1	[NT]	[NT]	[NT]	[NT]	101	[NT]
Chromium-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Copper-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	97	[NT]
Lead-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	97	[NT]
Mercury-Dissolved	µg/L	0.05	Metals-021	<0.05	[NT]	[NT]	[NT]	[NT]	106	[NT]
Nickel-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	97	[NT]
Zinc-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	98	[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.

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.

Appendix K - QA/QC Assessment

K.1 Site location

K.1.1 Introduction

For the purpose of assessing the quality of data presented in this Contaminant Delineation Report, EI collected field QC samples for analysis. The primary laboratory, SGS Australia Pty Ltd (SGS) and secondary laboratory, Envirolab Services Pty Ltd (Envirolab) also prepared and analysed internal QC samples. Details of the field and laboratory QC samples, with the allowable data acceptance ranges are presented in **Table M-1**.

Table K.1 Sampling Data Quality Indicators

QA/QC Measures	Data Quality Indicators
Precision – A quantitative measure of the variability (or reproducibility) of data	Data precision would be assessed by reviewing the performance of blind field duplicate sample sets, through calculation of relative percentage differences (RPD). Data precision would be deemed acceptable if RPDs are found to be less than 30%. 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.
Accuracy – A quantitative measure of the closeness of reported data to the "true" value	Data accuracy would be assessed through the analysis of: ▪ Method blanks, which are analysed for the analytes targeted in the primary samples; ▪ Matrix spike and matrix spike duplicate sample sets; ▪ Laboratory control samples; and ▪ Calibration of instruments against known standards.
Representativeness – The confidence (expressed qualitatively) that data are representative of each medium present onsite	To ensure the data produced by the laboratory is representative of conditions encountered in the field, the laboratory would carry out the following: ▪ Blank samples will be run in parallel with field samples to confirm there are no unacceptable instances of laboratory artefacts; ▪ Review of relative percentage differences (RPD) values for field and laboratory duplicates to provide an indication that the samples are generally homogeneous, with no unacceptable instances of significant sample matrix heterogeneities; and ▪ The appropriateness of collection methodologies, handling, storage and preservation techniques will be 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 assessment will be evaluated as complete, upon confirmation that: ▪ Standard operating procedures (SOPs) for sampling protocols were adhered to; and ▪ Copies of all COC documentation are presented, reviewed and found to be properly completed. It can therefore be considered whether the proportion of "useable data" generated in the data collection activities is sufficient for the purposes of the land use assessment.
Comparability – The confidence (expressed	Given that a reported data set can comprise several data sets from separate sampling episodes, issues of comparability between data sets are

QA/QC Measures	Data Quality Indicators
qualitatively) that data may be considered to be equivalent for each sampling and analytical event	reduced through adherence to SOPs and regulator-endorsed or published guidelines and standards on each data gathering activity. In addition the data will be collected by experienced samplers and NATA-accredited laboratory methodologies will be employed in all laboratory testing programs.

K.1.2 Calculation of Relative Percentage Difference (RPD)

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.

K.2 Field QA/QC Data Evaluation

The field quality assurance/quality control (QA/QC) soil and groundwater samples collected during the investigations were as follows:

- Blind field duplicates;
- Inter-laboratory duplicates;
- Trip blanks;
- Trip spikes; and
- Rinsate blanks.

Analytical results for tested soil and groundwater QA/QC samples, including calculated RPD values between primary and duplicate samples, are presented in **Table M-2** and **Table M-3**, respectively.

K.2.1 Soil Investigation & Soil Validation

K.2.1.1 Blind Field Duplicates

Four blind field duplicate (BFD) soil sample were collected as follows:

- Sample QD1 was collected from the primary sample 82-BH102M_0.4-0.6 on 20 April 2021;
- Sample QD2 was collected from the primary sample 32-BH105_0.2-0.3 on 22 April 2021;
- Sample QD3 was collected from the primary sample 30-BH103_0.3-0.4 on 20 April 2021;
- Sample QD4 was collected from the primary sample 112-BH101_0.3-0.4 on 22 April 2021;

The preparation of the BFD samples involved the collection of a bulk quantity of soil from the same sampling point without mixing, before dividing the material into identical sampling vessels. The duplicate samples were then presented blind to the primary laboratory (SGS) to avoid any potential analytical bias. BFD soil samples were analysed for TRHs, BTEX and selected heavy

metals and calculated RPD values were found to be within the Data Acceptance Criteria (**Appendix K**, **Table K-2**), with the exception of arsenic, lead, nickel and zinc. These results were considered to reflect the non-homogenous nature of the fill material, which is a typical characteristic of disturbed fill soils in Sydney's older, urban-industrial precincts. Also some results are less than 10 times the limits of reporting (LOR).

K.2.1.2 Inter-Laboratory Duplicate

Two inter-laboratory duplicate (ILD) soil sample were collected as follows:

- Sample QT1 was collected from the primary sample 82-BH102M_0.4-0.6 on 20 April 2021;
- Sample QT2 was collected from the primary sample 32-BH105_0.2-0.3 on 22 April 2021;

The preparation of the ILD sample was identical to the BFD sample, as described above, and was analysed for TRHs, BTEX and selected heavy metals. The calculated RPD values were found to be within the Data Acceptance Criteria (**Appendix K**, **Table K-2**), with the exception of arsenic, chromium, copper, lead, nickel and zinc. These results were considered to reflect the non-homogenous nature of the fill material, which is a typical characteristic of disturbed fill soils in Sydney's older, urban-industrial precincts. Also some results are less than 10 times the limits of reporting (LOR).

Furthermore, soil samples were placed immediately into jars following sampling to reduce the loss of volatiles from samples. Analytical results indicated that the samples collected were representative of the soils present at respective sampling locations.

K.2.1.3 Trip Blank

One trip blank (TB) sample was prepared and analysed by the primary laboratory for BTEX and Naphthalene. Analytical results for this sample were below the laboratory LOR, indicating that ideal sample transport and handling conditions were achieved.

K.2.1.4 Trip Spike

One trip spike (TS) sample was 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.

K.2.1.5 Rinsate Blank

One rinsate blank (RB) sample BH-QR1 was submitted to the primary laboratory for TRHs, BTEX and selected heavy metals analysis, the results for which were reported below laboratory LOR; therefore, it was concluded that decontamination procedures performed during the field works had been effective.

K.2.2 Groundwater Investigation

K.2.2.1 Blind Field Duplicates

One groundwater BFD samples were collected as follows:

- The sample GW-QD1 was split a GW-30_BH110M-1 during fieldwork on 30 April 2021;

The preparation of BFD samples involved the decanting of the groundwater collected from the respective monitoring well into two separate groups of appropriately labelled sampling containers. Volumes were split equally between the groups of sampling bottles such that the sample contained in each individual bottle, contained a similar proportion of each water volume. Sample mixing did not occur prior to decanting, in order to preserve the concentrations of volatiles potentially present within the sample. The duplicate sample was then presented blind to the primary laboratory (SGS) to avoid any potential analytical bias. The BFDs were analysed for TRHs, BTEX and selected heavy metals. The RPD values (**Appendix K, Table K-3**)

calculated for all the analytes tested were found to be within the Data Acceptance Criteria (DAC) with the exception of copper, however, the data deemed accepted as the results are less than 10 times the limits of reporting (LOR).

K.2.2.2 Inter-Laboratory Duplicate

One ILD samples were collected in total, as follows:

- The sample GW-QT1 was split a GW-30_BH110M-1 during fieldwork on 30 April 2021;

The preparation of a groundwater ILD sample was identical to the BFD sample as described above and also analysed for TRHs, BTEX and selected heavy metals. The RPD values calculated for the ILD samples were found to be within the Data Acceptance Criteria with the exception of copper and arsenic, however, the data deemed accepted as the results are less than 10 times the limits of reporting (LOR).

Overall data quality was considered to be acceptable, in accordance with the laboratory DQOs presented in **Appendix J, Table QC5**.

K.2.2.3 Trip Blanks

One trip blank (TB) sample, prepared by the primary laboratory, were analysed for BTEX by the primary laboratory during groundwater testing. TB results were reported below the laboratory LOR, indicating that ideal sample transport and handling conditions were achieved.

K.2.2.4 Trip Spikes

One TS samples was submitted to the primary laboratory for BTEX analysis, the results for which were all reported within the RPD acceptance levels for trip spike recovery. It was therefore concluded that satisfactory sample transport and handling conditions were achieved.

K.2.2.5 Rinsate Blanks

One RB samples (GW-QR1) was submitted to the primary laboratory for TRHs, BTEX and selected heavy metals analyses. Analytical results were reported below the laboratory LOR for all analytes. In view of this finding it was concluded that decontamination procedures performed during the field works had been effective.

K.2.3 Assessment of Field QA/QC Data

All samples were classified in the field with respect to soil/fill characteristics and any observable signs of contamination based on visual and odour assessment, in regards to soil and groundwater.

All samples, including field QC samples, were transported to the primary and secondary laboratories under strict Chain-of-Custody conditions and appropriate copies of relevant documentation were included in the respective reports.

The overall completeness of documentation produced under the field program of the subject assessment was considered to be adequate for the purposes of drawing valid conclusions regarding the environmental condition of the site.

Based on the results of the field QA/QC data EI considered the field QA/QC programme carried out during the investigation to be appropriate and the results to be acceptable.

K.3 LABORATORY QA/QC

Primary and intra-laboratory duplicate samples were analysed by SGS (located in Alexandria NSW), with the inter-laboratory duplicate sample 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 in **Table I-3** below.

Table I-3 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 blanks	**Yes**
	Analysis of method blanks	**Yes**
	Analysis of matrix spikes (MS)	**Yes**
	Analysis of matrix spike duplicates (MSD)	**Yes**
	Analysis of surrogate spikes	**Yes**
	Analysis of reference materials	Not applicable
	Analysis of laboratory control samples	**Yes**

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 investigation to be appropriate.

K.4 Summary of Project QA/QC

The sampling (including sample preservation, transport and decontamination procedures) and laboratory methods followed during this investigation were consistent with EI protocols. The project DQO specified in **Section 5.2**, **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 site condition. It was therefore considered that the data were sufficiently precise and accurate and that the results could be used for DSI interpretative purposes.

Field QAQC Data Evaluation for Soil Analytical Results - Table K2

Sample identification	Description	TRH				BTEX				Heavy Metals							
		F1	F2	F3 ($>C_{16}$ - C_{34})	F4 ($>C_{34}$ - C_{40})	Benzene	Toluene	Ethylbenzene	Xylene (total)	Arsenic	Cadmium	Chromium (Total)	Copper	Lead	Mercury	Nickel	Zinc
Intra-laboratory Duplicate - Soil Investigation																	
82-BH102M_0.4-0.6	Fill	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	5	<0.3	10	24	42	0.12	5.7	55
QD1	BFD of 82-BH102M_0.4-0.6	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	5	<0.3	8.9	28	54	0.1	5.2	66
	RPD	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*11.64*	*15.38*	*25.00*	*18.18*	*9.17*	*18.18*
Inter-laboratory Duplicate - Soil Investigation																	
82-BH102M_0.4-0.6	Fill	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	5	<0.3	10	24	42	0.12	5.7	55
QT1	BFD of 82-BH102M_0.4-0.6	<25	<50	<100	100	<0.2	<0.5	<1	<1	<4	<0.4	18	29	38	0.1	7	45
	RPD	*0.00*	*NA*	*NA*	*18.18*	*NA*	*NA*	*NA*	*NA*	*22.22*	*NA*	57.14	*18.87*	*10.00*	*18.18*	*20.47*	*20.00*
Intra-laboratory Duplicate - Soil Investigation																	
32-BH105_0.2-0.3	Fill	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	9	<0.3	27	42	220	0.18	20	150
QD2	BFD of 32-BH105_0.2-0.3	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	6	<0.3	17	37	82	0.14	15	84
	RPD	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*40.00*	*0.00*	*45.45*	*12.66*	91.39	*25.00*	*28.57*	56.41
Inter-laboratory Duplicate - Soil Investigation																	
32-BH105_0.2-0.3	Fill	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	9	<0.3	27	42	220	0.18	20	150
QT2	BFD of 32-BH105_0.2-0.3	<25	<50	<100	100	<0.2	<0.5	<1	<1	5	<0.4	13	21	66	0.2	10	59
	RPD	*0.00*	*NA*	*NA*	*18.18*	*NA*	*NA*	*NA*	*NA*	57.14	*NA*	70.00	66.67	107.69	*10.53*	66.67	87.08
Intra-laboratory Duplicate - Soil Investigation																	
30-BH103_0.3-0.4	Fill	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	5	<0.3	2.4	5.7	19	<0.05	1	15
QD3	BFD of 30-BH103_0.3-0.4	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	5	<0.3	2.9	7.7	31	<0.05	1.4	24
	RPD	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*18.87*	*29.85*	*48.00*	*0.00*	*33.33*	*46.15*
Intra-laboratory Duplicate - Soil Investigation																	
112-BH101_0.3-0.4	Fill	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	10	<0.3	12	37	16	<0.05	26	29
QD4	BFD of 112-BH101_0.3-0.4	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	2	<0.3	9.7	53	2	<0.05	53	34
	RPD	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	133.33	*0.00*	*21.20*	*35.56*	155.56	*0.00*	68.35	*15.87*
Rinsate Blanks																	
QR1	decon. Procedure water	<50	<60	<500	<500	<0.5	<0.5	<0.5	<1.5	<1	<0.1	<1	<1	<1	<0.1	<1	<5
Trip Blank																	
QTB-1	Lab prepared	-	-	-	-	<0.1	<0.1	<0.1	<0.3	-	-	-	-	-	-	-	-
Trip Spike																	
QTS-1	Lab prepared	-	-	-	-	[109%]	[101%]	[95%]	[95%]	-	-	-	-	-	-	-	-

NOTE: All results are reported in mg/kg (soil) or µg/L (water)

NA	Different PQLs
66.67	RPD calculated by halving detection limit exceeds 30-50% range referenced from AS4482.1 (2005)
52.87	RPD exceeds 30-50% range referenced from AS4482.1 (2005)

Field QAQC Data Evaluation for Groundwater Analytical Results - Table K3

Sample identification	Description	TRH				BTEX				Heavy Metals							
		F1	F2	F3 (>C_{16} - C_{34})	F4 (>C_{34} - C_{40})	Benzene	Toluene	Ethylbenzene	Xylene (total)	Arsenic	Cadmium	Chromium (Total)	Copper	Lead	Mercury	Nickel	Zinc
Intra-laboratory Duplicate - GW Investigation - 1st GME																	
GW-30_BH110M-1	GW	<50	<60	<500	<500	<0.5	<0.5	<0.5	<1.5	1	<0.1	2	6	<1	<0.1	6	580
GW-QD1	BFD of GW-30_BH110M-1	<50	<60	<500	<500	<0.5	<0.5	<0.5	<1.5	1	<0.1	2	2	<1	<0.1	5	540
RPD		*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	*0.00*	100.00	*0.00*	*0.00*	*18.18*	*7.14*
Inter-laboratory Duplicate - GW Investigation - 1st GME																	
GW-30_BH110M-1	GW	<50	<60	<500	<500	<0.5	<0.5	<0.5	<1.5	1	<0.1	2	6	<1	<0.1	6	580
GW-QT1	BFD of GW-30_BH110M-1	<10	<50	<100	<100	<1	<1	<1	<3	2	<0.1	2	1	<1	<0.05	5	720
RPD		*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	66.67	*0.00*	*0.00*	142.86	*0.00*	*NA*	*18.18*	*21.54*
Rinsate Blanks - GW Investigation - for 1st and 2nd GME																	
GW-QR1	Decon. procedure water	<50	<60	<500	<500	<0.5	<0.5	<0.5	<1.5	<1	<0.1	<1	<1	<1	<0.1	<1	<5
Trip Blank - GW Investigation - for 1st and 2nd GME																	
GW-QTB1	Lab prepared	-	-	-	-	<0.5	<0.5	<0.5	<1.5	-	-	-	-	-	-	-	-
Trip Spike - GW Investigation - for 1st and 2nd GME																	
GW-QTS1	Lab prepared	-	-	-	-	[100%]	[104%]	[103%]	[103.5%]	-	-	-	-	-	-	-	-

NOTE: All results are reported in or µg/L

NA	Different PQLs
66.67	RPD calculated by halving detection limit exceeds 30-50% range referenced from AS4482.1 (2005)
52.87	RPD exceeds 30-50% range referenced from AS4482.1 (2005)