12 Mars Road, Lane Cove West, NSW 2066

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Detailed Site Investigation



Document Information

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12 Mars Road, Lane Cove West, NSW 2066

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Senversa acknowledges the traditional custodians of the land on which this work was created and pay our respect to Elders past and present.

Executive Summary

Introduction

This detailed site investigation (DSI) has been prepared by Senversa Pty Ltd (Senversa) to accompany a State Significant Development Application (SSDA) for the construction and ongoing operation of a data centre facility at 12 Mars Road, Lane Cove West in the Lane Cove Government Area (LGA). The site is legally described as Lot 22 in Deposited Plan 732062.

This report has been prepared to address the Secretary's Environmental Assessment Requirements (SEARs) issued for the Project Mars Data Centre Project (SSD-82052708) dated 10th April 2025.

Background

The site is currently operating as a commercial warehouse unit, with surrounding hardstand parking and loading areas. The site is 3.3-hectares (ha) in area and legally described as Lot 22 DP 732062. It is currently zoned General Industrial (E4) and is located within a mixed-use industrial area.

The proposed redevelopment is to include demolition of existing structures, and construction, fit-out and operation of a data centre. The SSD application needs to comply with the NSW Planning Secretary's Environmental Assessment Requirements (SEARs). This document has been prepared to meet the requirement to prepare a DSI as recommended in the preliminary site investigation (PSI) (Senversa, 2025).

Objectives

The purpose of this DSI is to address Condition 17 of the SEARs issued by the NSW Department of Planning, Housing and Infrastructure for warehouse and distribution centre applications.

The objectives of this DSI were as follows:

- Develop a robust conceptual site model.
- Assess the suitability of the site for ongoing commercial/industrial use.
- Assess the potential for on- and off-site contaminant migration.
- Assess whether a RAP would be required to facilitate redevelopment.

Scope of Works

To achieve the project objectives, Senversa completed the following scope of works:

- Review of the PSI (Senversa, 2025).
- Completion of 31 soil boreholes (BH01 to BH30, BH10A).
- Installation and development of five groundwater monitoring wells (MW01 to MW05).
- Gauging, purging and sampling of the five newly installed monitoring wells.
- Laboratory analysis of soil and groundwater samples to evaluate concentrations of the inferred contaminants of potential concern (CoPC).
- Preparation of DSI (this report).

Discussion and Conclusions

The primary sources of contamination identified were investigated as part of this investigation. As such, it was considered that the information gathered as part of this DSI was sufficient to characterise contamination across the site in order to evaluate risk of harm to human health and the environment and determine if migration of contamination may have occurred.

Concentrations of the CoPC in soil were below the adopted human health guidelines, with the exception of asbestos AF/FA in soil at one location. However, bonded asbestos was reported to be present in fill across the site.

Groundwater was considered to have been reasonably characterised in this assessment and was not considered to be contaminated. Some heavy metals were analysed in groundwater at what were considered to be background concentrations. .

A RAP is required to assist with the management of soil during redevelopment and specify validation requirements to ensure that the site remains suitable for commercial/industrial land use post redevelopment. An Asbestos Management Plan (AMP) including an asbestos register (for soil) may need to be implemented on an ongoing basis depending on the course that remediation takes.

Based on the available data and in consideration of the project objectives, Senversa concluded that the site is considered suitable for continued commercial/industrial use with the implementation of an AMP.

An RAP for the proposed redevelopment is recommended to be prepared and implemented documenting the requirements to ensure that asbestos identified in fill is appropriately remediated and validated.

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List of Acronyms

Acronym	Definition
ACL	Added Contaminant Limit
ACM	Asbestos Containing Material
ADWG	Australian Drinking Water Guidelines
AHD	Australian Height Datum
AMP	Asbestos Management Plan
ANZG	Australian and New Zealand Guidelines
ASC	Assessment of Site Contamination
ASS	Acid Sulfate Soils
BH	Borehole
BTEXN	Benzene, Toluene, Ethylbenzene, Xylenes and Naphthalene
CLM Act	*Contaminated Land Management Act 1997*
CoPC	Contaminants of Potential Concern
CRC CARE	Cooperative Research Centre for Contamination Assessment and Remediation of the Environment
CRWB	California Regional Water Quality Board
CSM	Conceptual Site Model
CT	Contaminant Threshold
DGV	Default Guideline Values
DO	Dissolved Oxygen
DP	Deposited Plan
DQI	Data Quality Indicators
DQO	Data Quality Objectives
DSI	Detailed Site Investigation
EC	Electrical Conductivity
EIL	Ecological Investigation Level

Acronym	Definition
EMP	Environmental Management Plan
EOT	End of Trip
EPA	Environment Protection Authority
EPL	Environment Protection Licence
ESL	Ecological Screening Level
GDA	Geocentric Datum of Australia
GPSA	Goodman Property Services (Aust) Pty Ltd
ha	Hectares
HEPA	Heads of EPA Australia and New Zealand
HIL	Health Investigation Level
HSL	Health Screening Level
HSL	Health Screening Level
IBC	Intermediate Bulk Containers
IFM	Interface Meter
iHIL	Industrial Health Investigation Level
IMW	Intrusive Maintenance Workers
IP	Interface Probe
LGA	Local Government Area
LNAPL	Light Non-Aqueous Phase Liquid
LOR	Limit of Reporting
m AHD	Metres Australian Height Datum
m BGL	Metres Below Ground Level
M8	Suite of eight metals, including arsenic, cadmium, chromium, copper, lead, nickel, mercury and zinc
MGA56	Map Grid of Australia Zone 56
MVA	Megavolt Ampere

Acronym	Definition
MW	Monitoring Well
NATA	National Association of Testing Authorities
NEPC	National Environment Protection Council
NEPM	National Environment Protection Measure
NHMRC	National Health and Medical Research Council
NSW	New South Wales
OCP	Organochlorine Pesticides
OPP	Organophosphorus Pesticides
PACM	Potential Asbestos Containing Material
PAH	Polycyclic Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyls
PFAS	Per- and Polyfluoroalkyl Substances
PFAS NEMP	PFAS National Environmental Management Plan
PFOS	Perfluorooctane Sulphonate
PID	Photoionisation Detector
POEO	*Protection of the Environment Operations Act 1997*
PPM	Parts per Million
PSI	Preliminary Site Investigation
RAP	Remedial Action Plan
RPD	Relative Percent Difference
SCC	Specific Contaminant Concentration
SEARs	NSW Planning Secretary's Environmental Assessment Requirements
SEPP	State Environmental Planning Policies
SOP	Standard Operating Procedures
SPR	Source-Pathway-Receptor
SSD	State Significant Development
SWL	Standing Water Level
TCLP	Toxicity Characteristic Leachate Procedure
TPH	Total Petroleum Hydrocarbons
TRH	Total Recoverable Hydrocarbons
UCL	Upper Confidence Limit
ULS	Utility Locating Services Pty Ltd
UPSS	Underground Petroleum Storage Systems
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VENM	Virgin Excavated Natural Material
VOC	Volatile Organic Compounds
WA	Western Australia
WHO	World Health Organisation
WQM	Water Quality Metre

1.0 Introduction and Objectives

Senversa Pty Ltd (Senversa) was engaged by Goodman Property Services (Aust) Pty Ltd (GPSA) to conduct a detailed site investigation (DSI) at 12 Mars Road, Lane Cove West, NSW (the site). The site location is indicated on **Figure 1**.

1.1 Background

The site is legally described as Lot 22 DP 732062 and is located within a mixed-use industrial area. The site is currently operating as a commercial warehouse unit, with surrounding hardstand parking and loading areas.

A State Significant Development Application (SSDA) has been prepared to support a data centre at 12 Mars Road, Lane Cove West. The site area is 33,559 m^2 and is zoned E4 General Industrial.

The proposal will include:

- Site preparation works including demolition, bulk excavation and removal of existing structures on the site, tree and vegetation clearing and bulk earthworks.
- Construction, fit-out and operation of a three-storey data centre building with a total gross floor area of approximately 21,832 m^2 comprising:
  - 24 parking spaces.
  - 2 loading dock spaces.
  - 2 levels of technical data hall floor space.
  - 3 level office and amenities building.
- Provision of required utilities including:
  - Diesel storage tanks.
  - Water tanks.
  - Substations on site.
- Vehicle and pedestrian access provided via Mars Road.
- Associated landscaping and site servicing.
- Installation of site services and drainage infrastructure.
- A floor space ratio of approximately 0.65:1.

Redevelopment plans are presented in **Appendix A**.

The SSD application needs to comply with the NSW Planning Secretary's Environmental Assessment Requirements (SEARs). Details of how this report complies with SEARs is summarised in **Table 1-1** below.

Table 1-1: SEARs Requirement

SEARs Requirement	Response
"17. Contamination and Remediation • *In accordance with Chapter 4 of SEPP (Resilience and Hazards) 2021, assess and quantify any soil and groundwater contamination and demonstrate that the site is suitable (or will be suitable, after remediation) for the development.".* A prerequisite of this is that a preliminary site investigation (PSI) be completed. Pending assessments within the PSI, a DSI may be required. These investigations are required to assess and quantify any contamination on site and demonstrate that the site is suitable (or can be made suitable) for the proposed land use, that being commercial/industrial. Should contamination be identified on-site during the PSI and DSI, a remedial action plan (RAP) and/or an environmental management plan (EMP) may be required for the proposed development.	This document has been prepared to meet the requirement to prepare a DSI as recommended in the PSI (Senversa, 2025)[1].

1.2 Objectives

The purpose of this DSI is to address Condition 17 of the SEARs issued by the NSW Department of Planning Housing and Infrastructure for warehouse and distribution centre applications.

The objectives of this DSI were as follows:

- Develop a robust conceptual site model.
- Assess the suitability of the site for ongoing commercial/industrial use.
- Assess the potential for on- and off-site contaminant migration.
- Assess whether a RAP would be required to facilitate redevelopment.

1.3 Scope of Works

To achieve the project objectives, Senversa completed the following scope of works:

- Review of the PSI (Senversa, 2025).
- Completion of 31 soil boreholes (BH01 to BH30, BH10A).
- Installation and development of five groundwater monitoring wells (MW01 to MW05).
- Gauging, purging and sampling of the five newly installed monitoring wells.
- Laboratory analysis of soil samples to evaluate concentrations of the inferred contaminants of potential concern (CoPC), which included:
  - Total recoverable hydrocarbons (TRH).
  - Benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN).
  - Suite of eight metals, including arsenic, cadmium, chromium, copper, lead, nickel, mercury and zinc (M8).
  - Polycyclic aromatic hydrocarbons (PAH).
  - Organochlorine pesticides (OCP).
  - Polychlorinated biphenyls (PCB).
  - Asbestos quantification.
  - Per- and polyfluoroalkyl substances (PFAS).
  - Volatile organic compounds (VOCs).
  - Re-analysis of samples by the toxicity characteristic leachate procedure (TCLP) method for PFAS, PAH and metals (for drilling spoil waste classification).

[1] Senversa (2025). Preliminary Site Investigation, 12 Mars Road, Lane Cove West, NSW 2066 2 May 2025, S22013_002_RPT_Rev0.

- Laboratory analysis of groundwater samples to evaluate concentrations of the inferred CoPC, which included:
  - TRH.
  - BTEXN.
  - M8.
  - PFAS.
  - VOCs.
- Preparation of DSI (this report).

1.4 Relevant Legislation and Guidance

This report has been developed with reference to the following guidelines and standards:

- National Environment Protection Council (2013). *National Environment Protection (Assessment of Site Contamination) Amendment Measure* (No.1). This is hereafter referred to as 'ASC NEPM'.
- NSW Environment Protection Authority (2022). *Sampling Design part 1 – application, Contaminated Land Guidelines.*
- NSW Environment Protection Authority (2020). *Consultants Reporting on Contaminated Land.*
- WA Department of Health (2009). *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia*.

2.0 Site Information

2.1 Site Identification

The site is located at 12 Mars Road, Lane Cove West within the Lane Cove West Local Government Area (LGA) and is currently zoned as General Industrial (E4) under the Lane Cove Local Environmental Plan 2009. The proposal is permissible with development consent in the E4 zone and meets the zone objectives. The site is inclusive of one allotment across a 3.3-hectare area, Lot 22 DP 732062.

The site forms the Transtech Business Park and currently operates as a commercial warehouse unit. The warehouse is surrounded by hardstand parking and loading areas and is located within a mixed-use land setting.

A summary of the property and site identification is presented in **Table 2-1** below.

Table 2-1: Site Identification Details

Item	Description
Site Address	12 Mars Road, Lane Cove West, NSW.
Site Owner	GPSA.
Legal Description	Lot 22 in DP 732062.
Site Area	Approximately 33,701 m^2
Geographic Coordinates (GDA2020/MGA56)	Northwest corner: 328644 easting; 6257264 northing. Southwest corner: 328599 easting; 6256996 northing. Southeast corner: 328792 easting; 6257087 northing. Northeast corner: 328801 easting; 6257238 northing.
Local Government Area	Lane Cove Council.
Zoning	E4 – General Industrial.
Property Use	Commercial warehouses (commercial/industrial premises).
Site Location and Features	**Figure 1**.

2.2 PSI Summary

Senversa completed a PSI (Senversa, 2025). The PSI data are summarised below in **Table 2-2**.

Table 2-2: PSI Summary

Item	Description
Surrounding Land Use	The site is located within a mixed land use setting. Surrounding land uses include: • North: Mars Road is immediately north, with mixed use industrial development beyond. • South: Lloyd Rees Drive is immediately south, which borders Blackman Park public recreational area. • East: immediately east is a small section of bushland classified as C2 environmental conservation. To the north of this area is the Lane Cove Community Nursery, and further to the east is medium-density residential housing typically one (1) to two (2) storeys in height. • West: mixed use industrial development typically one (1) to three (3) storeys in height.
Topography	The site slopes gently to the southeast with an approximate elevation of approximately 50 to 35 metres Australian Height Datum (m AHD). The area surrounding the site is undulating and slopes down towards Stony Gully 60 m south of the south. Stony Gully is a tributary to the Lane Cove River approximately 450 m west of the site.
Geology and Soil	The *Sydney 1:100,000 Geological Series Sheet 9130* (NSW Department of Mineral Resources, 1983, Edition 1) maps the entire site as underlain by Hawkesbury Sandstone, which comprises medium to coarse grained quartz sandstone displaying small to large-scale, high-angle crossbedding; minor shale and laminate lenses from the Quaternary period in the Cainozoic era. A review of eSPADE v2.2 (https://www.environment.nsw.gov.au/eSpade2Webapp/, accessed on 30/10/24) maps the site as follows: • Northern portion of the site – underlain by dermosols, described as red, brown, yellow, grey or black and have loam to clay textures; and • Southern portion of the site – underlain by tenosols, described as having low fertility and low water-holding capacity, and can be shallow and stony. The site is underlain by kandosol soils described as red, yellow and grey massive earths. They generally have a sandy to loamy-surface soil, grading to porous sandy-clay subsoils with low fertility and poor water-holding capacity.
Acid Sulphate Soils (ASS)	The NSW eSPADE v2.2 (https://www.environment.nsw.gov.au/eSpade2Webapp/, accessed on 30/10/24) indicates that there is no mapped occurrence of ASS on the site. An area of disturbed terrain (X4) and low probability of ASS is located approximately 60 m south. The site is within an area of extremely low probability of ASS.
Salinity	A review of eSPADE v2.2 (https://www.environment.nsw.gov.au/eSpade2Webapp/, accessed on 30/10/24) indicate a low probability of land salinity.
Hydrogeology	A search of the Bureau of Meteorology groundwater database identified nine (9) registered groundwater bores within 500 m of the site, with the closest 433 m to the southeast. These are all identified as functional and used for monitoring purposes. The depth to groundwater was not recorded. Based on the distance and direction of the closest surface water bodies, regional groundwater is likely to flow in a southwesterly direction towards Lane Cove River, which flows into Parramatta River.
Hydrology	The surface water features within 1 km of the site are as follows: • Stony Gully is located approximately 60 m south of the site, flowing directly into the Lane Cove River approximately 450 m west of the site, and eventually into the Parramatta River. A saline wetland is located along the Lane Cove River, 450 m east of the site.

Item	Description
Natural Environment and Ecosystems and Heritage	The following was identified: • A high potential groundwater dependant ecosystem was identified 78 m south of the site (Dry Sclerophyll Forests). • Native Dry Sclerophyll Forests (Shrubby sub-formation) Sydney Coastal Enriched Sandstone Forest is found on the southern boundary of the site. • A saline wetland is located along the Lane Cove River, 450 m east of the site. • The Sydney Coastal Lilly Pilly-Palm Gallery Rainforest is located 31 m southwest of the site. Various native vegetation from the Sydney Coastal Sclerophyll, Wetlands, and Rainforests are within 1 km of the site. • Five (5) listed NSW Environmental Planning Instrument heritage items were identified within 500 m of the site, the closest of which is Lane Cove House, 368 m southwest of the site.
Sensitive Receptors	Potentially sensitive receptors identified on and within 500 m of the site based on the information outlined above include: **Human Health** Current and future site employees. Intrusive maintenance workers or other maintenance contractors (e.g. gardeners). Construction workers during site redevelopment. Neighbouring residential occupants, and commercial/industrial workers. Blackman Park Playground approximately 150 m to the south. **Ecological** Native Dry Sclerophyll Forests (Shrubby sub-formation) Sydney Coastal Enriched Sandstone Forest is found on the southern boundary of the site. The area directly adjacent to the east and south of the site is zoned as an area of environmental conservation (C2). Lane Cove Community Nursery approximately 50 m to the east. Stony Gully is located approximately 60 m south of the south of the site and flows directly into the Lane Cove River, approximately 450 m west of the site and eventually to the Parramatta River 4 km to the southeast.
Mining Impact	There are no mining subsidence districts recorded within proximity of the site. There are no current mining or exploration titles or title applications within 1 km of the site.
Site History	The site was predominantly bushland with unsealed roads up until the early 1950s. Business records were unavailable pre-1970s; however, multiple large sheds and industrial buildings could be seen on aerials of the site from 1950s to 1970s. In 1975, The Kalamazoo Centre was reported as operating, focusing on office equipment manufacturing and distribution. Dodwell & Co, an import company, also operated on the site. During the 1980s, Kalamazoo (Aust) Pty Ltd expanded its operations to include data processing equipment and continuous stationery. By 1986, the site was primarily occupied by Baker, I. H. & Co. Wine & Spirit Merchants, and Kalamazoo, with the latter diversifying into printing and data processing equipment. The rear of the Kalamazoo building was leased to Lane Cove Automotive Services for the purpose of car maintenance and petrol supply during this period and the bottom floor of the warehouse was leased to Skansen, a giftware distribution company. Between the years 1983 and 1984, historic business records show that Dry Cleaners & Pressers operated at the premises directly to the west of the site. In 1991, the site hosted a variety of businesses, including Associated Industrial Insulators Pty Ltd, Australia Everex Systems Pty Ltd, Baker I H & Co Wine & Spirit Merchants, and Kalamazoo.
10.7 Planning Certificate	No matters under the *Contaminated Land Management Act 1997* (CLM Act) identified.
SafeWork NSW Hazardous Chemicals Search	A search of the SafeWork NSW Storage of Hazardous Chemicals records indicated that two underground storage tanks (USTs) with capacities of 16,500 litres and 58,000 litres were established on the southern portion of the site around 1984-1985 for servicing Lane Cove Automotive services. WorkCover NSW issued and renewed a licence for these USTs and other flammable liquid cabinets in 1995 and 1996. It is unknown if these tanks have been decommissioned or removed in accordance with the NSW *Protection of the Environment Operations (Underground Petroleum Storage Systems) Regulation 2019*. Further investigations and inspections of the USTs and associated infrastructure are detailed below.

Item	Description
Site History and Business Records	The site was predominantly bushland with unsealed roads up until the early 1950s. Business records are unavailable pre-1975; however, multiple large sheds are evident on historic aerial photographs from the 1950s to 1970s, indicating potential for commercial industrial activities at the site during these times. In 1975, The Kalamazoo Centre was operating, focusing on office equipment manufacturing and distribution. Dodwell & Co, an import company, were also operated at the site. During the 1980s, Kalamazoo (Aust) Pty Ltd expanded its operations to include data processing equipment and continuous stationery. By 1986, the site was also occupied by Baker, I. H. & Co. Wine & Spirit Merchants, and Kalamazoo, with the latter diversifying into printing and data processing equipment. Between 1983 and 1984, historic business records show that Dry Cleaners & Pressers operated at the premises directly to the west of the site. In 1991, the site hosted a variety of businesses, including Associated Industrial Insulators Pty Ltd, Australia Everex Systems Pty Ltd, Baker I H & Co Wine & Spirit Merchants, and Kalamazoo.
NSW EPA Registers	Contaminated Land Register The site was not listed under Section 58 of the CLM Act. Caltex Lane Cove West located approximately 388 m southeast of the site, as well as 7-Eleven Service Station West located approximately 423 m southeast of the site were listed as contaminated sites notified to the EPA, however, regulation under the CLM Act is not required. These sites are also anticipated to be cross-hydraulic gradient from the site, based on regional groundwater flow projections. Environment Protection Licences • On-site – CAP-XX Pty Ltd., 9-10/12 Mars Road (on the site) held EPL 11801 for Group A waste generation and storage. The licence was surrendered 2007. No non-compliances were listed. • Off-site: ▪ Cochlear Limited operated at 14 – 16 Mars Road (adjacent site to the west) held EPL 6595 related to waste generation and storage. The licence was surrendered 2007. No noncompliance was listed. ▪ Machin & Ewen Pty Ltd. located approximately 254 m northwest, held EPL 6678 related to waste generation and storage. The licence was surrendered 2008. No noncompliance was listed. ▪ Industrial & Decorative Gold Planting Co Pty Ltd. located approximately 329 m northwest, held EPL 6687 related to waste generation and storage. The licence was surrendered 2008. No non-compliances were listed. PFAS Investigations The site was not listed on the NSW Government PFAS investigation program.
Previous Investigations	The following investigations have been undertaken to date: • Axis Environmental (1995*). Update Environmental Audit, 12 Mars Road Lane Cove*. May 1995. • Hyder Environmental (1996*). Environmental Audit Report, 12 Mars Road Lane Cove*. September 1996. • AECOM (2011). *UPSS Stage 1 Inspection Program: Trans Tech Business Park*, 1 November 2011. • Senversa (2025). *Preliminary Site Investigation, 12 Mars Road, Lane Cove West, NSW 2066*. 2 May 2025, S22013_002_RPT_Rev0.

Item	Description
Site Inspection	A site inspection was undertaken by Senversa on 29 October 2024. Senversa was escorted by a GPSA Site Manager (Angelo Munozco), who advised there were no known USTs on site. Senversa was advised the only known chemical storage was within the Immij tenanted unit, used for digital printing. The tenant for this unit advised that printing inks were stored in intermediate bulk containers (IBC's), waste was collected by Remondis (waste transporter and recycler). The Immji tenant advised that IBCs were stored in a bunded area and that there were no known chemical spills that occurred during their tenancy. Observations are summarised below: • The site sloped to the south with a steep decent in the southern portion of the site below the suspended southern building. • The property comprised commercial units including aircraft maintenance consulting, medical device wholesales, electrical wholesales, digital printing services, catering supplies, commercial electric car storage and a cafe. No internal inspections of units were undertaken. • The site surface was all concrete hardstand with the exception of garden beds in the northern portion of the site, minor exposed gravel and vegetation walls below the suspended driveway between the northern and southern half of the site when the site, and the southern portion of the site that was covered that in thick vegetation. • The units were surrounded by concrete driveways with carparking in front of each unit. The concrete surfaces were in good condition with no obvious significant oil/fuel staining. • An inspection of ground surface below the suspended buildings on the southern portion of the site indicated the potential presence of a gravelly clay fill with no obvious odours or staining apparent. Several fragments of potential asbestos containing material (PACM) were observed across the ground surface below these buildings. This area was secured with a locked gate with minimal access to tenants or the public. • The southern portion of the site was covered in thick vegetation that appeared healthy. • Garden beds on the northern portion of the site had vegetation that appeared healthy, with mulch and/or grass across the ground surface in these areas. No PACM or anthropogenic materials were observed on the site surface in the areas inspected.
Summary of Key Findings	Between the 1950s and the 1990s, the site was utilised for various industrial purposes including data processing, manufacturing, printing, and automotive maintenance. Historical reports by Axis (1995) and Hyder (1996) indicated the presence of two large underground storage tanks (USTs) and several smaller flammable liquid storage depots, which were not observed during a 2011 inspection by AECOM or Senversa in 2024. Redevelopment of the northwestern portion of the site occurred between 1994 and 2003, potentially involving the removal or burial of these USTs. The site previously held WorkCover NSW licenses for dangerous goods and had a surrendered EPL for hazardous waste. The Kalamazoo building at the site, constructed with asbestos cement and containing asbestos fire-retardant material, was demolished between 1994 and 2003, with unknown demolition and disposal activities. The recent site inspection on 29 October 2024 revealed no known chemical spills or storage issues within the current tenancies. The inspection undertaken by Senversa in October 2024 identified potential asbestos containing material (PACM) across the ground surface below the suspended buildings in the southern portion of the site. This area was secured with a locked gate with minimal access to tenants or the public. A preliminary CSM was developed as outlined in **Section 3.0**.
PSI Conclusions	Review of available documentation for the site and surrounding areas, as well as a site inspection, indicated the potential for contamination to be present at the site. The potential sources of contamination that could affect the soil and groundwater at the site were identified to include the following: • Fill material of unknown origin and quality across the site. • Potential presence of USTs. • On-site historical uses (computer repair and distribution, manufacturing, printing activities and associated chemical storage, automotive services). • Off-site historical use (dry cleaners directly to the west of the site, photography production and processing). Based on the available data Senversa recommended a DSI be undertaken to assess the potential for contamination to exist and assess potential suitability of the site for continued commercial/industrial use.

3.0 Preliminary Conceptual Site Model

A CSM describes the possible pathways by which exposure to potential contamination may occur. For exposure to occur (and potential risk to be present), a complete pathway must exist between the source of contamination and the receptor (i.e. the person or ecosystem components potentially affected by the contamination). Where the exposure pathway is incomplete, exposure will not occur via that pathway.

A preliminary CSM was developed for the site based on information collected as part of the PSI (Senversa, 2025).

3.1 Potential Sources of Contamination

Table 3-1 summarising the identified potential on-site and off-site sources of contamination.

Table 3-1: Potential Sources of Contamination

Source	Potential Source	Key Contaminants of Potential Concern
1	Fill material of unknown origin and quality across the site.	TRH, BTEXN, PAH, M8, OCP, PCB, PFAS, VOCs, and asbestos.
2	Potential USTs.	Lead, TRH, BTEXN and VOCs.
3	On-site historical uses (computer repair and distribution, manufacturing, printing activities and associated chemical storage, automotive services).	TRH, BTEXN, PAH, M8, PCB, PFAS, and VOCs.
4	Off-site historical use (dry cleaners directly to the west of the site, photography production and processing).	TRH, BTEXN, PAH, M8, PCB, PFAS, and VOCs.

3.2 Potentially Impacted Media

Table 3-2 below identifies potential impacts to environmental media based on the sources of contamination identified in **Table 3-1**.

Table 3-2: Potential Impacted Material

Environmental Media	Potential Impacts
Soil	Soils may be impacted with: • A suite of contaminants potentially associated with fill material of unknown origin and quality, i.e., TRH, BTEXN, PAH, M8, OCP, OPP, PCBs and asbestos. • Petroleum hydrocarbons and VOCs associated with fuel storage and use. • M8, TRH, BTEXN, PAH, PCBs and PFAS in relation to the historical land use.
Groundwater	Groundwater may be impacted with: • M8, TRH, BTEXN, PAH, PCB, VOCs and PFAS.
Indoor Air	Air may be impacted from volatile compounds (e.g., VOCs, TRH and BTEXN) potentially present within soil and groundwater as listed above.

3.3 Potential Receptors

Potential human health and ecological receptors are summarised in **Table 3-3**.

Table 3-3: Potential Receptors

Receptor	Location	Potential Impact
Human Health	On-site.	Potential receptors include: • Current and future site users. • Intrusive maintenance workers or other maintenance contractors (e.g. gardeners). • Construction workers during proposed site redevelopment. The general public has limited accessibility to the site; therefore, the risk of exposure to the general public is considered low.
	Off-site.	Potential receptors include: • Neighbouring commercial/industrial workers and medium density residential occupants.
Ecological	On-site.	Fauna and flora within the existing and/or future landscaped areas.
	Off-site.	Fauna and flora within the: • Existing and/or future landscaped areas. • Native Dry Sclerophyll Forests (Shrubby sub-formation) Sydney Coastal Enriched Sandstone Forest to the south of the site. Fauna, flora and aquatic ecosystem within the Lane Cove River located approximately 450 m west; inclusive of the saline wetland.

3.4 Exposure Pathways

Potential exposure pathways are summarised in **Table 3-4**. The significance of these exposure pathways is dependent on numerous factors, such as the rate of exposure/intake, the concentrations within the impacted environmental media at the point of exposure and the individual characteristics and behaviours of the receptors.

Table 3-4: Potential Exposure Pathways

Receptor	Exposure Pathway
Human Health	Human health receptors may be exposed to contaminated environmental media through direct contact. Typically, direct contact with soils is limited to the top 0.5 m, with the exception of intrusive workers. For the purposes of this PSI, it is assumed that direct exposure to groundwater is unlikely as there is no extraction of groundwater at the site known by Senversa at this time. Potential exposure pathways include: • Incidental ingestion – shallow soil and subsurface soil (for intrusive workers and landscape maintenance personnel). Unlikely for general site users as site generally sealed, with exposed surface soils in the southern portion of the site behind a locked gate. • Dermal contact – shallow and subsurface soil (for intrusive workers). • Inhalation of dust and vapour.
Ecological	Ecological receptors may be exposed to impacted environmental media through direct contact and uptake pathways. Generally, the habitat for terrestrial flora and fauna is limited to the top 2 m. Potential exposure pathways include: • Direct uptake from soil (Existing and/or future landscaped areas). • Direct uptake from groundwater (Native Dry Sclerophyll Forests (Shrubby sub-formation) Sydney Coastal Enriched Sandstone Forest). • Direct uptake from surface water downgradient from site (Lane Cove River).

4.0 Data Quality Objectives

Data quality objectives (DQOs) adopted for the project are consistent with the *National Environment Protection (Assessment of Site Contamination) Measure* ([ASC NEPM] NEPC, 1999 as amended 2013) DQO process. They focus on a logical rationale to inform data collection and assessment of the useability of the data in terms of accuracy and reliability in forming conclusions on the condition of the element of the environment being investigated. The DQOs for the project are presented in **Table 4-1**.

Table 4-1: Data Quality Objectives

Step	DQO
Step 1 – State the Problem (Project Objective)	The Senversa PSI (Senversa, 2025) identified a range of potentially contaminating historical land uses and activities at the site and surrounding areas. A DSI was required to assess the potential for site contamination associated with current and historical land use and to determine site suitability for the proposed development.
Step 2 – Identify the Decisions (Goals)	The decisions required to address the stated problem are discussed below: • Is there sufficient information on the distribution and characteristics of contamination across the site to evaluate risk of harm to human health or the environment and whether off-site migration of contamination may have occurred? • Are there any potentially unacceptable risks to human health and/or ecological receptors from contaminants in soil or groundwater? • Is there any evidence of, or potential for, migration of contaminants from the site? • Are the data generated by sampling and analysis reliable? • Is management or remediation of contamination required? • Is there sufficient information on the distribution and characteristics of contaminated media across the site to develop a remedial action plan or site management plan to (where necessary) remediate and/or manage site contamination?
Step 3 – Identify Information Inputs	The inputs to make the above decisions include: • Field observations made during intrusive investigation works. • Laboratory analytical data of collected soil and groundwater samples. • Screening-level assessment criteria from guidelines made or approved by the NSW EPA. • Quality assurance (QA) procedures and quality control (QC) data.
Step 4 – Define the Study Boundaries	The study boundaries included: • The site boundary as shown on **Figure 1**. • Subsurface boundaries included investigation up to 9 m bgl. • The temporal boundary was limited to the data collected during these investigation works. Constraints to the study included the presence of underground services and tenants within the warehouse.

Step	DQO
Step 5 – Develop the Decision Rules	The following decision rules were applied: *Are the data sufficient to address the objectives of the investigation?* • If it is assessed that the data generated through this investigation are reliable and the sampling and analytical strategy was followed in the field, then the data will be considered sufficient. • If it is assessed that additional information is required to further reduce the uncertainties associated with the distribution and characterisation of contamination, then appropriate recommendations for further assessment and/or investigation (including for assessment of potential risks) will be provided. *Is there risk of harm to human health or the environment or of off-site migration of contamination?* • If the data meet the adopted screening levels, then the site will be considered generally suitable for commercial/industrial land use. • If the data do not meet the adopted screening levels, but an assessment of source-pathway-receptor linkages indicates no complete exposure pathways exist, then the site will be considered generally suitable for ongoing commercial/industrial use. However, if exposure pathways do exist, then the site may not be suitable for use without some form of remediation or management. *Are the data generated by sampling and analysis reliable?* • If the data collected have been subjected to an assessment of quality assurance/quality control and found to be suitable for use in this assessment, the data will be considered reliable. *Is management or remediation of contamination required?* • If the data do not meet the adopted screening levels, but an assessment of source-pathway-receptor linkages indicates no complete exposure pathways exist, then the site will be considered generally suitable for ongoing commercial/industrial use. However, if exposure pathways do exist, then the site may not be suitable for use without some form of remediation or management.
Step 6 – Specify the Limits of Decision Error	The acceptable limits on decision errors are described by the data quality indicators (DQIs). The DQIs include precision, accuracy, representativeness, completeness, and comparability (refer **Section 4.1**).
Step 7 – Optimise the Design for Obtaining Data	Various strategies for developing a statistically based sampling plan are identified in the ASC NEPM and NSW EPA (2022), including judgemental, random, systematic and stratified sampling patterns. Based on historical land uses (refer to **Section 2.0**), a systematic and targeted sampling program was developed to characterise the potential sources of contamination within the target areas of the investigation. The sampling rationale for the strategy undertaken by Senversa for this investigation is described in **Section 6.0** and sample locations are presented on **Figure 2**.

Soil analytical results have also been compared against criteria in NSW EPA (2014) *Waste Classification Guidelines* for the purpose of providing an indicative waste classification of the materials sampled to assist in planning proposed development works. The investigation was not specifically designed for this objective and the indicative classification presented herein does not constitute a waste classification of material on-site – further assessment of the actual waste material will be required.

4.1 Data Quality Indicators

The DQIs established for the project included:

- **Precision:** measures the reproducibility of measurements under a given set of conditions. The precision of the laboratory data and sampling techniques is assessed by calculating the Relative Percent Difference (RPD) of duplicate samples.
- **Accuracy:** measures the bias in a measurement system. The accuracy of the laboratory data that are generated during this project is a measure of the closeness of the analytical results obtained by a method to the 'true' value. Accuracy is assessed by reference to the analytical results of laboratory control samples, laboratory spikes and analyses against reference standards.
- **Representativeness:** expresses the degree with which sample data accurately and precisely represent a characteristic of a population or an environmental condition. Representativeness is achieved by collecting samples on a representative basis across the site, and by using an adequate number of sample locations to characterise the site to the required accuracy.
- **Comparability**: expresses the confidence with which one data set can be compared with another. This is achieved through maintaining a level of consistency in sampling techniques, analytical techniques, and reporting methods.
- **Completeness**: defined as the percentage of measurements made which are judged to be valid measurements. The completeness goal is set at there being sufficient valid data generated during the study.
- **Sensitivity**: expresses the appropriateness of the chosen laboratory methods, including the limits of reporting, in producing reliable data in relation to the adopted assessment criteria.

The DQIs are summarised in **Table 4-2** below.

Table 4-2: DQIs

Data Quality Objectives	Frequency	Acceptance Criteria
Precision		
Blind Duplicates (Intra Laboratory)	1/20 samples. 1/10 samples for PFAS analysis.	<30% RPD.
Split Duplicates (Inter Laboratory)	1/20 samples. 1/10 samples for PFAS analysis.	<30% RPD.
Laboratory Duplicates	1/20 samples.	Laboratory DQI based on LOR.
Accuracy		
Surrogate Spikes	All organic samples.	70-130%.
Laboratory Control Samples	1 per lab batch.	70-130%.
Matrix Spikes	1 per lab batch.	70-130%.
Representativeness		
Sampling Appropriate for Media and Analytes	NA.	NA.
Samples Extracted and Analysed Within Holding Times	NA.	No non-compliance.
Rinsate Blank	1 per day where non-dedicated sampling equipment was used.	<LOR.

Data Quality Objectives	Frequency	Acceptance Criteria
Comparability		
Senversa Standard Operating Procedures (SOP) for Sample Collection and Handling	All samples.	All samples.
National Association of Testing Authorities (NATA) Accredited Analytical Methods Used for all Analyses	All samples.	All samples.
Consistent Field Conditions, Sampling Staff and Laboratory Analysis	All samples.	All samples.
Completeness		
Sample Description and Chain of Custodies Completed and Appropriate	All samples.	All samples.
Appropriate Documentation	All samples.	All samples.
Satisfactory Frequency and Result for QC Samples	All QA / QC samples.	-
Data from Critical Samples is Considered Valid	NA.	Critical samples valid.
Limits of Reporting Appropriate and Consistent	All samples.	All samples.
Sensitivity		
Limits of Reporting Appropriate and Consistent	All samples.	All samples.

5.0 Assessment Criteria

To assess the human health and ecological risks associated with the presence of site contamination, site assessment criteria were adopted in accordance with the following state and national guidance:

- National Environment Protection Council (NEPC) (2013). *National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013* (ASC NEPM) (No. 1): Schedule B(1) Guideline on Investigation Levels for Soil and Groundwater, May 2013.
- National Health and Medical Research Council (NHMRC) (2011). *Australian Drinking Water Guidelines,* updated August 2018 and rolling revisions (ADWG).
- Australian and New Zealand Guidelines (ANZG) (2018). *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* and rolling revisions (ANZG 2018).
- Cooperative Research Centre for Contamination Assessment and Remediation of the Environment (CRC CARE). 2011. Technical Report No. 10 – Health Screening Levels for Petroleum Hydrocarbons in Soil and Groundwater (CRC CARE 2011).
- Heads of EPA Australia and New Zealand (HEPA). PFAS National Environmental Management Plan (PFAS NEMP), Version 2.0 (2020).

The following assessment criteria listed in **Table 5-1** were adopted for the purpose of preliminary screening concentrations of contaminants.

Table 5-1: Adopted Assessment Criteria

Media	Receptor	Adopted Assessment Criteria
Soil	Human Health.	As the land use at the site is commercial/industrial, the following screening levels have been selected: • Health investigation levels for commercial industrial land use (HIL-D). • Health screening level D (HSL- D) for vapour intrusion, sand, 0-1 m. This is considered conservative for samples collected from greater than 1 m or in clay/silt formations. • HSL for intrusive maintenance workers (HSL-IMW) from CRC Care 2011. • HSL for direct contact from CRC Care 2011.
	Ecological.	• Ecological investigation levels (EIL) for commercial and industrial sites. As site specific values are not being used, the most conservative added contaminant limit (ACL) for aged soil/contamination is used for screening purposes. • Ecological screening levels (ESL) for coarse soils in commercial and industrial sites.
	Aesthetics.	The ASC NEPM does not provide assessment criteria but states that *site assessment requires balanced consideration of the quantity, type and distribution of foreign material or odours in relation to the specific land use and its sensitivity*. Aesthetic issues generally relate to the presence of low-concern inert foreign material in soil or fill resulting from human activity. Issues that require further assessment could include: • Highly malodorous soils or extracted groundwater. • Hydrocarbon sheen on surface water. • Discoloured chemical deposits or soil staining with chemical waste. • Presence of putrescible waste that may generate hazardous levels of methane.
	Management limits.	The Management Limits for TRH in soil for commercial Industrial land use have also been applied following the HSLs and ESLs.
	Waste.	As discussed in **Section 4.0**, soil analytical results have also been compared against criteria in NSW EPA (2014) *Waste Classification Guidelines* for the purpose of providing an indicative waste classification of the materials sampled to assist in planning proposed development works.

Media	Receptor	Adopted Assessment Criteria
Groundwater	Human Health.	As the land use at the site is commercial/industrial and groundwater is not extracted and used for drinking water, the following screening levels have been selected: • HSL-D for vapour intrusion, 2-<4 m. Based on the presence of fill and sand in the subsurface, the most conservative soil type of sand has been selected. • Recreational guidelines have been considered in respect to incidental ingestion by intrusive maintenance workers as a conservative measure. For non-volatile contaminants, recreational criteria are based on Australian Drinking Water Guidelines (ADWG) amended by a factor of 10 (health-based values only) in accordance with the NHMRC (2008) *Guidelines for Managing Risk in Recreational Waters*. For analytes where there are no published Australia guidelines, additional guidance has been sought from: • WHO (2011). Guidelines for Drinking Water Quality (and associated rolling revisions). • USEPA. Regional Screening Levels - Tap Water (https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables).
	Ecological.	• Groundwater data have been compared to the default guideline values (DGV) provided in the Australian and New Zealand Guidelines (2018) for fresh and marine water quality. • The receiving environment (Lane Cove River) is considered slightly to moderately disturbed and so the marine water 95% level of protection was adopted. Some have been modified based on bioaccumulation or acute-toxicity or potential toxicity to particular species. • For PFAS, the guideline value provided in the NEMP for 95% level of protection was adopted for assessing direct toxicity and the 99% value is adopted to assess bioaccumulation. • For TPH/TRH, no default guideline values are available from ANZG (2018). Aquatic habitat screening levels recommended by the California Regional Water Quality Board (CRWB, 2016) have therefore been adopted. The CRWB (2016) screening levels are those derived for use at San Francisco Airport and the Presidio and are based on chronic aquatic toxicity tests of petrol and jet fuel mixtures. For each TPH/TRH fraction, the lowest value derived for petroleum mixtures within the fraction has been adopted. It is noted that these values are adopted by other United States jurisdictions (e.g. Hawaii Department of Health) and are comparable to the current Dutch intervention value for mineral oil (600 ug/L; VROM, 2013)[2].

[2] VROM, 2013. *Soil Remediation Circular 2013*, version of 1 July 2013. Netherlands Ministry of Infrastructure and the Environment.

6.0 Sampling Methodology and Analysis

6.1 Fieldwork Summary

Fieldwork was undertaken by appropriately trained Senversa personnel in accordance with relevant national and state guideline documents and Senversa standard operating procedures (SOPs). A summary of the fieldwork undertaken as part of this DSI is provided in **Table 6-1** below.

Table 6-1: Fieldwork Summary

Date	Description
4 November 2024	Utility Locating Services Pty Ltd (ULS) conducted a site inspection and service clearance of each of the potential soil bore and monitoring well locations.
11 to 15 November 2024	Advancement of 31 soil boreholes (BH01 to BH30, BH10A). Installation of five groundwater monitoring wells (MW01 to MW05). Groundwater development the five newly installed monitoring wells (MW01 to MW05).
21 November 2024	Groundwater gauging, purging and sampling of five monitoring wells (MW01 to MW05). Australian Location Services Pty Ltd (ALS) surveyed five groundwater monitoring wells (MW01 to MW05).

6.2 Fieldwork Methodology

6.2.1 Soil Assessment

The soil assessment methodology is summarised in **Table 6-2** below.

Table 6-2: Soil Assessment Methodology

Activity	Details
Service Clearance	Borehole locations were checked for underground services by a Telstra accredited service location contractor (ULS) using radio-detection with reference to Before You Dig Australia plans.
Drilling Method & Soil Sampling	A concrete corer was used at locations where the surface was concrete. Boreholes were completed by hand auger to at least 1.2 m bgl for service clearance or until practical refusal. In instances where the hand auger was unable to get to 1.2 m bgl due to refusal, solid flight augers were utilised to advance the boreholes. A GeoprobeTM (geoprobe) drill rig with direct push tube sampling was used to reach the target depth, which was 0.5 m into natural material or top of bedrock. Soil samples were collected from the hand auger cutting head, off the solid flight auger and push tube cores. Soil samples were collected from each location from the surface and where changes in lithological layers or impacts where observed to the depth of the investigation. Where fill was observed, a sample of the underlying natural material was also collected. Following completion of drilling, the boreholes (excluding those converted into groundwater monitoring wells) were backfilled with the soil removed during drilling.
Soil Logging	Soil logging was in general accordance with the Unified Soil Classification System. Visual and olfactory observations (e.g. material composition, inclusions, moisture, odours, sheen, staining, asbestos) were recorded. Borehole logs are presented in **Appendix B**.
Sample Handling	Soil samples were collected into laboratory prepared and supplied glass jars with Teflon lined lids. Soil samples analysed for PFAS were collected in laboratory prepared and supplied PFAS-free jars. Jars were filled to minimise headspace and placed into an insulated cooler containing crushed ice. Samples for asbestos analysis were placed into zip-lock plastic bags. All soil samples were collected with a gloved hand and directly from the auger tip. A new pair of nitrile gloves was worn for each sample collection event.

Activity	Details
Field Screening	Soil sub-samples were collected into zip-lock plastic bags. The vapour headspace was monitored for VOCs using a calibrated photoionisation detector (PID) equipped with a 10.6 eV lamp. The PID calibration certificate is provided in **Appendix C**.
Decontamination	The hand auger was decontaminated prior to use and between boreholes by brushing off extraneous material, washing with detergent solution (Liquinox) and rinsing with potable water.
QC Samples	Collection and analysis of field duplicates, equipment rinsate blanks (over hand auger), trip blanks and trip spikes.
Spoil Management	Drilling spoil generated during installation of groundwater monitoring wells (refer **Table 6-3**) was collected into 205 L drums and stored in a secure area on-site for disposal to an appropriately licenced facility.

6.2.2 Groundwater Assessment

The groundwater assessment methodology is summarised in **Table 6-3** below.

Table 6-3: Groundwater Assessment Methodology

Activity	Details
Well Installation	Subsurface conditions were logged during drilling, including the depth of groundwater strike. A Geoprobe drill rig using solid flight auger and air hammer techniques were utilised to complete drilling to the target depth, typically 2 m beyond the observed groundwater strike (maximum depth of 9 m bgl). Monitoring wells comprised class 18 uPVC 50 mm diameter, 0.5 mm slotted casing and blank riser and were placed in position in the re-named borehole. Filter sand was added to approximately 0.5 m above the screen and then a bentonite seal. Wells were finished with a roadbox cemented into position. Monitoring wells were surveyed post-installation, with the survey data presented in **Appendix D**.
Well Development	Well development involved removing between 30 and 57 L of water by use of a steel bailer and twister pump. Wells were purged until water flowed clear, measured geochemical parameters stabilised or three well volumes were removed. Groundwater well development field forms are presented in **Appendix E**.
Gauging	The standing water level (SWL) in the monitoring wells was measured using an oil/water interface probe (IP) prior to purging. The IP was appropriate for identifying light non-aqueous phase liquid (LNAPL).
Purging	Monitoring wells were purged by low-flow peristaltic pump. Geochemical parameters were measured by a water quality meter (WQM) and the SWL measured by the IP during purging. The WQM calibration certificate is provided in **Appendix C**. Groundwater monitoring field forms are provided in **Appendix E**.
Sampling	Sampling commenced when the geochemical parameters and SWL stabilised. Laboratory prepared and supplied vials and bottles were filled directly from pump sample tubing. Samples were collected from approximately 0.5 m above the base of the wells. Vials and bottles were filled to minimise headspace and placed into an insulated cooler containing crushed ice. A new pair of nitrile gloves was worn for each sample collection event.
Decontamination	The IP was decontaminated prior to use and between monitoring wells by washing with detergent solution (Liquinox) and rinsing with potable water. Dedicated (i.e. new) pump tubing was used at each location to reduce the risk of cross contamination.
QC Samples	Analysis of field duplicates, equipment rinsate blank (over the IP), trip blank, and trip spike.
Waste Management	Purged groundwater was collected into 205 L drums and stored in a secure area on-site for disposal to an appropriately licenced facility.

6.3 Laboratory Analysis

The following laboratories were utilised:

- Envirolab: Primary laboratory for soil, groundwater and quality control samples.
- ALS Environmental (ALS): Secondary laboratory for soil and groundwater inter-laboratory duplicate samples.

Soil samples were selected for analysis based on:

- Field screening results (i.e. unusual colours, odours and/or elevated PID readings).
- Presence of fill material.

The laboratories utilised methods endorsed by NATA. The laboratory certificates are included in **Appendix F**.

6.4 Quality Assurance and Quality Control

The QA/QC program was completed in accordance with the seven step DQO process. Achievement of the DQOs was demonstrated by reference to the DQIs.

The data validation procedure used in the assessment of field and laboratory QA/QC data (refer **Appendix G**) indicated that the reported analytical results were representative of the soil and groundwater conditions at the sampled locations. The quality of the analytical data is considered acceptably reliable for the purpose of this investigation.

7.0 Investigation Results

7.1 Soil Investigation

7.1.1 Field Observations

The borehole locations are shown on **Figure 2**, and the borelogs are provided in **Appendix C**. The logged conditions are summarised in **Table 7-1** below. Photographs associated with the fieldworks are presented in **Appendix H**.

Table 7-1: Lithology Summary

Lithology	Approximate Depths (m bgl)	Description
CONCRETE	0.0-0.24	FILL: concrete, good condition.
FILL	0.0-1.5	FILL: various compositions including gravelly sand, clayey gravelly sand, sandy gravelly clay, and anthropogenic materials including concrete, glass, timber and PACM fragments.
CLAY/Sandy CLAY	0.21-1.9	CLAY: medium plasticity, grey mottled red, earthy odour, no staining or inclusions.
SANDSTONE	0.1-unconfirmed	SANDSTONE - Hawkesbury Sandstone.

Notes – lithology varied across the site. Depths provided represent the approximate depth range of each lithology.

Field observations with logged soil included:

- Minor black was observed between 0.9-1.2 m bgl at BH17.
- PACM fragments were observed across the ground surface below the suspended buildings on the southern portion of the site. Locations PACM01 to PACM05 presented on **Figure 2**.
- The VOC concentrations measured by the PID were between 0 and 42.9 (BH16/MW03) parts per million (ppm). No odours or staining were observed at locations where elevated PID readings were recorded.

7.1.2 Soil Analytical Results

Soil analytical data are presented in **Table 1**. All results are included in the laboratory reports provided in **Appendix F**.

7.1.2.1 Human-Health

Analytical results were less than the adopted human health criteria in all samples collected.

Asbestos was detected in fill at BH05, BH10A and BH15. Concentrations of asbestos AF/FA in soil were reported above the adopted human health assessment criteria for commercial/industrial sites at BH05_0.2 - 0.25. Asbestos in soil >7 mm ACM were reported below the adopted human health assessment criteria for commercial/industrial sites. Additionally, bonded PACM fragments were observed on the surface in the southern portion of the site near BH27 and between BH28 and BH29 (refer **Figure 2**). Laboratory analysis confirmed that samples PACM-01 and PACM-04 contained asbestos, while PACM-02, PACM-03 and PACM-05 did not.

The detections of asbestos are presented on **Figure 2**.

7.1.2.2 Ecological

Elevated concentrations above the adopted ecological criteria were observed for:

- Nickel at BH06_0.2-0.23 (83 mg/kg).
- Zinc at BH30_0.0-0.1 (170 mg/kg).
- Benzo(a)pyrene at BH27_0.2-0.3 (6.5 mg/kg).

Average concentrations of these analytes were reported below (less than half) the adopted ecological assessment criteria for commercial industrial land use.

Given that soils were predominately located beneath concrete hardstand and the adoption of conservative EILs, these exceedances are not considered significant.

7.1.2.3 Indicative Waste Classification

Soil analytical results have been compared against the NSW EPA (2014) *Waste Classification Guidelines* (**Table 2**). Generally, the CoPC concentrations were below the contaminant threshold value set for General Solid Waste (CT1) and Restricted Solid Waste (CT2). Associated 95% upper confidence limits (UCLs) were undertaken of analytes with elevated concentrations above the assessment criteria, these have been presented within **Table 2a**. 95% UCLs were reported below CT1 for all analytes.

With regards to PFAS, limited toxicity characteristics leaching procedure (TCLP) analysis was undertaken on select samples for the purpose of drum waste disposal (**Section 8.0**). These results were below the TCLP1 assessment criteria. Additionally, if it is assumed that exactly 0.0001 mg/kg of a substance (one half of the LOR) exists in a soil sample, when subjected to a leaching test (100 g of soil and 2 L of water) the resultant concentration in the water would be 0.005 µg/l (assuming perfect extraction from soil to water). Based on this calculation the PFOS + PFHxS concentration of 0.0021 mg/kg (highest reported concentration) would have a leachate concentration of 0.105 µg/L, significantly less than TCLP1 criteria of 50 µg/L.

All results were below the specific contaminant concentration (SCC) threshold for General Solid Waste.

Asbestos was detected in fill across the site.

Based on the above review of soil analytical results and screening against criteria in the NSW EPA (2014) *Waste Classification Guidelines*, material sampled on-site has indicative waste classifications of:

- FILL – General Solid Waste (*Special Waste Asbestos*).
- NATURAL – General Solid Waste.

There may be an opportunity to dispose of rock underlying natural soils as virgin excavated material (VENM) provided that PFAS is not a CoPC. Ambient, very low concentrations of PFAS have been observed in some sandstones around Sydney at *de minimis* concentrations that have made classification of sandstone as VENM technically challenging.

These indicative classifications do not constitute a waste classification of material on-site – further assessment of the actual waste material will be required, e.g. inspection, further sampling including additional TCLP analysis of soils. The indicative classification of fill materials sampled is driven by the presence of asbestos and 95% UCLs.

7.2 Groundwater Assessment

7.2.1 Elevation

Groundwater gauging results are presented on **Table 3** and range between 34.874 to 39.92 m AHD. Groundwater levels and flow direction are presented on **Figure 3**. These data suggest there is an overall southerly groundwater flow direction.

7.2.2 Geochemical Parameters

The stabilised geochemical parameters measured on 21 November 2024 and associated statistics are presented on **Table 4**.

In summary, the geochemical parameters indicated:

- Dissolved oxygen (DO): low oxygenated conditions.
- Electrical conductivity (EC): freshwater conditions.
- pH: slightly acidic to neutral conditions.
- Redox potential: moderate oxidation potential.

The groundwater field sampling sheets are included in **Appendix E**.

7.2.3 Groundwater Analytical Results

Groundwater analytical data are presented in **Table 5**. All results are included in the laboratory reports provided in **Appendix F**.

7.2.3.1 Human-Health

The CoPC concentrations were all reported below the adopted human health assessment criteria.

7.2.3.2 Ecological

The CoPC concentrations were below the adopted ecological assessment criteria except for:

- Copper at MW02, MW03, MW04 and MW05.
- Nickel at MW01, MW02, MW04 and MW05.
- Zinc at all locations.

Senversa considers that the nature of the metals in groundwater reported are broadly consistent with site background conditions.

8.0 Waste

Four waste soil drums and two wastewater drums were generated as part of the DSI investigation works. The drums were classified in accordance with the NSW EPA (2014) *Waste Classification Guidelines: Part 1 – Classifying Waste* to inform the off-site disposal to a licensed waste facility. The waste classification letter and disposal dockets for this waste is provided in **Appendix I** and **Appendix J** respectively.

9.0 Discussion

The results in relation to the project decision rules, outlined in **Section 4.0**, are discussed below:

Is there sufficient information on the distribution and characteristics of contamination across the site to evaluate risk of harm to human health or the environment and whether off-site migration of contamination may have occurred?

The primary sources of contamination identified in **Section 3.1** were investigated.

Groundwater is considered to have been reasonably characterised in this assessment.

As such, it is considered that the information gathered as part of this DSI is sufficient to characterise contamination across the site in order to evaluate risk of harm to human health and the environment and determine if migration of contamination may have occurred.

Are there any potentially unacceptable risks to human health and/or ecological receptors from contaminants in soil or groundwater?

- Concentrations of the CoPC in soil were below the adopted human health guidelines, with the exception of asbestos AF/FA in soil at BH05_0.2 - 0.25.
- Asbestos was reported to be present at BH05, BH10A, BH15, PACM-01 and PACM-04. As such, it should be assumed that bonded asbestos may be present in fill at the site. 10 L quantification analysis has not been undertaken to asses the concentration of asbestos in fill due to the soil sampling methodology and size of boreholes limiting sample volumes.
- A limited number of samples exceeded the conservative soil EILs for heavy metals, and benzo(a)pyrene. These exceedances are not considered significant since most of the site is covered with concrete or asphalt hardstand (and will remain so under the proposed development design) and the assessment criteria are conservative.
- A limited number of samples exceeded the groundwater maintenance of ecosystems criteria for copper, nickel and zinc. Senversa considers that the nature of the metals in groundwater reported are broadly consistent with site background conditions.

Is there any evidence of, or potential for, migration of contaminants from the site?

Low-level heavy meatal concentrations exceeding the adopted ecological assessment criteria in groundwater were observed across the site. These low-level concentrations are considered to be background concentrations.

Are the data generated by sampling and analysis reliable?

As per **Section 6.4**, the quality of the analytical data is considered acceptably reliable for the purpose of this investigation.

Is management or remediation of contamination required?

Senversa notes that asbestos is present in fill material across the site and an RAP is required to assist with the management of soil during redevelopment and specify validation requirements to ensure that the site remains suitable for commercial/industrial land use post redevelopment. An Asbestos Management Plan (AMP) including an asbestos register (for soil) may need to be implemented on an ongoing basis depending on the course site remediation takes.

Is there sufficient information on the distribution and characteristics of contaminated media across the site to develop a Remedial Action Plan or Site Management Plan to (where necessary) remediate and/or manage site contamination?

As primary sources of contamination have been identified and investigated as part of the DSI, Senversa considers that there is enough information on the distribution and characterisation of contamination to develop an RAP to assist with the management of soil during redevelopment.

10.0 Updated Conceptual Site Model

The assessment of risk provided in **Table 10-1** has been compiled based on the data collected in this investigation.

Table 10-1: SPR Linkages

Pathway	Receptor	Complete Linkage
Dermal Contact with or Accidental Ingestion of Contaminated Soil	• Workers carrying out intrusive works including construction, maintenance or gardening. • Workers using the site and visitors.	Incomplete – Generally CoPC concentrations were reported below the adopted human health assessment criteria.
Inhalation of Vapours Emanating from Sub-Surface Soil/Groundwater		Incomplete – soil and groundwater sample analysis results identified no concentrations of TRH, BTEXN or VOC that would indicate a potential vapour intrusion risk to date.
Inhalation of Dust (from Soils or ACM)	• Workers carrying out intrusive works including construction, maintenance or gardening. • Workers using the site and visitors. • Nearby workers from neighbouring businesses.	Potential – ACM fragments and fines were detected in FILL during the investigation, as such, this pathway is potentially complete for construction or maintenance works that are involve the disturbance of soils.
Transport of Contaminants in Groundwater	Adjacent sensitive receptor (Lane Cove River).	Incomplete – heavy metal exceedances above the adopted ecological assessment criteria were considered broadly consistent with site background conditions.

11.0 Conclusion and Recommendations

Based on the available data and in consideration of the project objectives, Senversa concludes that the site is considered suitable for continued commercial/industrial use with the implementation of an AMP.

An RAP for the proposed redevelopment is recommended to be prepared and implemented documenting the requirements to ensure that asbestos identified in fill is appropriately remediated and validated.

12.0 Principles and Limitations

Table 12-1 lists principles and limitations that are an integral part of site contamination assessment practices and are intended to be referred to when resolving any ambiguity or exercising such discretion as is accorded the user or site assessor.

Table 12-1: Principles and Limitations

Area	Principle and Limitation
Elimination of Uncertainty	Some uncertainty is inherent in all site investigations. Furthermore, any sample, either surface or subsurface, taken for chemical testing may or may not be representative of a larger population or area. Professional judgment and interpretation are inherent in the process, and even when exercised in accordance with objective scientific principles, uncertainty is inevitable. Additional assessment beyond that which was reasonably undertaken may reduce the uncertainty.
Failure to Detect	Even when site investigation work is executed competently and in accordance with the appropriate Australian guidance, such as the National Environment Protection (Assessment of Site Contamination) Amendment Measure ('the NEPM'), it must be recognised that certain conditions present especially difficult target analyte detection problems. Such conditions may include, but are not limited to, complex geological settings, unusual or generally poorly understood behaviour and fate characteristics of certain substances, complex, discontinuous, random, or heterogeneous distributions of existing target analytes, physical impediments to investigation imposed by the location of services, structures and other man-made objects, and the inherent limitations of assessment technologies.
Limitations of Information	The effectiveness of any site investigation may be compromised by limitations or defects in the information used to define the objectives and scope of the investigation, including inability to obtain information concerning historic site uses or prior site assessment activities despite the efforts of the user and assessor to obtain such information.
Chemical Analysis Error	Chemical testing methods have inherent uncertainties and limitations. Senversa routinely seeks to require the laboratory to report any potential or actual problems experienced, or non-routine events which may have occurred during the testing, so that such problems can be considered in evaluating the data.
Level of Assessment	The investigation herein should not be considered to be an exhaustive assessment of environmental conditions on a property. There is a point at which the effort required to obtain information is outweighed by the time required to obtain that information, and, in the context of private transactions and contractual responsibilities, may become a material detriment to the orderly conduct of business. If the presence of target analytes is confirmed on a property, the extent of further assessment is a function of the degree of confidence required and the degree of uncertainty acceptable in relation to the objectives of the assessment.
Comparison with Subsequent Inquiry	The justification and adequacy of the findings of this investigation in light of the findings of a subsequent inquiry should be evaluated based on the reasonableness of judgments made at the time and under the circumstances in which they were made.
Data Useability	Investigation data generally only represent the site conditions at the time the data were generated. Therefore, the usability of data collected as part of this investigation may have a finite lifetime depending on the application and use being made of the data. In all respects, a future reader of this report should evaluate whether previously generated data are appropriate for any subsequent use beyond the original purpose for which they were collected, or are otherwise subject to lifetime limits imposed by other laws, regulations or regulatory policies.
Nature of Advice	The investigation works herein are intended to develop and present sound, scientifically valid data concerning actual site conditions. Senversa does not seek or purport to provide legal or business advice.

13.0 References

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National Health and Medical Research Council (NHMRC) (2011). *Australian Drinking Water Guidelines*, updated August 2018 and rolling revisions (ADWG).

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Senversa (2025). *Preliminary Site Investigation*. S22013_002_RPT_Rev0, 2 May 2025.

Senversa (2025). *Drum Waste Classification – Soil and Groundwater 12 Mars Road, Lane Cove West, NSW*. S22013_004_LET_Rev0, 20 December 2024.

VROM, 2013. Soil Remediation Circular 2013, version of 1 July 2013. Netherlands Ministry of Infrastructure and the Environment.

WA Department of Health (2009). *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia.*

Figures

Figure 1: Site Location and Layout

Figure 2: Sampling Locations

Figure 3: Groundwater Elevation and Flow



Legend

- Lot Boundary
- Site Boundary

Notes:
Aerial Imagery (14/07/2024) © Metromap

Created:	E. Marha	Date:	29/11/2024
Reviewed:	L. Dzalakowski	Revision:	0
Approved:	Z. Smith	Scale:	1:1,200 (A3)
File:	S22013_003_F001 Site Location and Layout		

0 5 10 20 30 40 50 Metres

Coordinate System: GDA2020 MGA Zone 56

Figure No:	**1**
Title:	**Site Location and Layout**
Project:	Detailed Site Investigation
Location:	12 Mars Rd, Lane Cove, NSW 2066
Client:	Goodman Property Services (Aust) Pty Ltd

Path: S:\01_Jobs\1 NSW_Jobs\S22013_GPSA_MARS RD_DSI\APRX\S22013_003.aprx

© Senversa 2024



Legend

- Groundwater Monitoring Well
- Soil Bore
- PACM Fragment
- Existing Groundwater Monitoring Well
- Asbestos Detected
- Lot Boundary
- Site Boundary

Notes:
Aerial Imagery (14/07/2024) © Metromap

Created:	E. Marha	Date:	14/05/2025
Reviewed:	L. Dzalakowski	Revision:	0
Approved:	Z. Smith	Scale:	1:1,000 (A3)
File:	S22013_003_F002 Sample Locations		

0 5 10 20 30 40 Metres

Coordinate System: GDA2020 MGA Zone 56

Figure No: 2

Title: Sample Locations

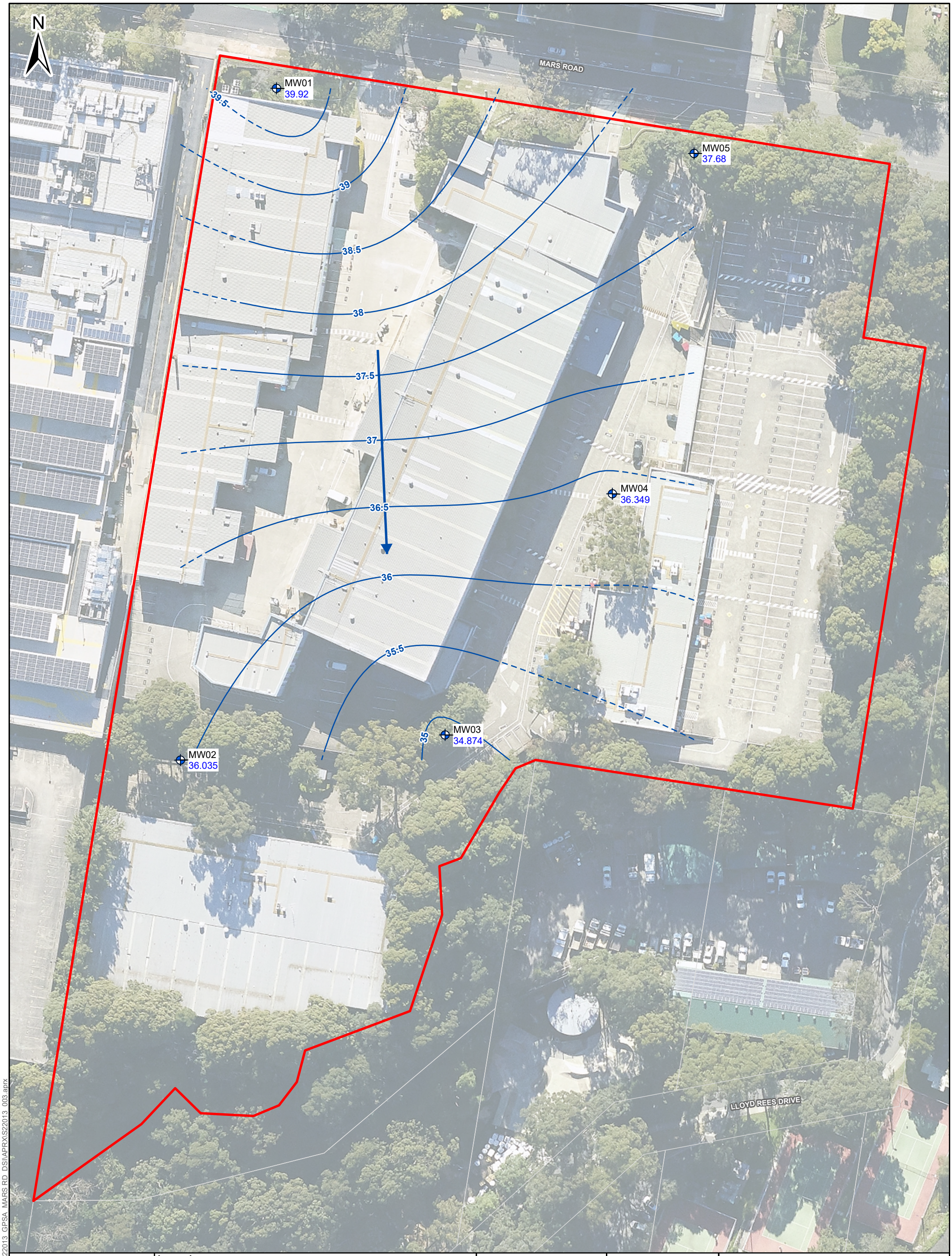
Project: Detailed Site Investigation

Location: 12 Mars Rd, Lane Cove, NSW 2066

Client: Goodman Property Services (Aust) Pty Ltd

Path: S:\01_Jobs\1.NSW_Jobs\S22013_GPSA_MARS RD_DSI\APRX\S22013_003.aprx

© Senversa 2025



Legend

- Groundwater Monitoring Well
- Lot Boundary
- Site Boundary

Well ID
Reduced Water Level (m AHD)

Notes:
Gauging data from 21/11/2024
Aerial Imagery (14/07/2024) © Metromap

Created:	E. Marha	Date:	29/11/2024
Reviewed:	L. Dzalakowski	Revision:	0
Approved:	Z. Smith	Scale:	1:800 (A3)
File:	S22013_003_F003 Groundwater Contours and Flow		

0 5 10 20 30 Metres
Coordinate System: GDA2020 MGA Zone 56

Figure No: 3

Title: **Groundwater Contours and Inferred Flow Direction**

Project: Detailed Site Investigation

Location: 12 Mars Rd, Lane Cove, NSW 2066

Client: Goodman Property Services (Aust) Pty Ltd

Path: S:\01_Jobs\1.NSW_Jobs\S22013_GPSA_MARS RD_DSI\APRX\S22013_003.aprx

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Tables

Table 1: Soil Analytical Results

Table 2: Soil Analytical Results – Waste

Table 2a: Soil 95 % UCL Results

Table 3: Groundwater Gauging Data

Table 4: Groundwater Geochemical Parameters

Table 5: Groundwater Analytical Results

Table 1: Soil Analytical Results
12 Mars Road Lane Cove West
Goodman Property Services (Aust) Pty Ltd
S22013

						Metals								BTEX							Total Petroleum Hydrocarbons				
						Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Total Xylene	Total BTEX	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Sum)
					Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
					LOR	4	0.4	1	1	1	0.1	1	1	0.2	0.5	0.5	0.5	0.5	0.5	0.2	10	50	100	100	50
					Human Health - NEPM Setting 'D' - Commercial / Industrial	3,000[#1]	900[#1]	3,600[#2]	240,000[#1]	1,500[#3]	730[#1]	6,000[#1]	400,000[#1]	3[#4]	99,000[#4]	27,000[#4]			230[#4]		260[#5]	20,000[#6]			
					Maintenance of Ecosystems - Commercial / Industrial	160[#14]		320[#15]	95[#16]	1,830[#17]		60[#16]	150[#16]	75[#18]	135[#18]	165[#18]			95[#19]		215[#20]	170[#21]			
					TPH Management Limits - NEPM Setting D - Commercial / Industrial																				
Location	**Field ID**	**Date**	**Depth**	**Lithology**	**Sample Type**	**Lab Report**																			
BH01	BH01_0.4-0.5	14/11/2024	0.4 - 0.5	Fill	Normal	366472	6	<0.4	24	13	43	<0.1	13	43	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50
BH01	QC104	14/11/2024	0.4 - 0.5	Fill	Field_D	366472	5	<0.4	15	10	22	<0.1	9	32	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50
BH02	BH02_0.2-0.3	13/11/2024	0.2 - 0.3	Fill	Normal	366346	<4	<0.4	16	10	14	<0.1	9	31	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50
BH02	QC201	13/11/2024	0.2 - 0.3	Natural	Interlab_D	ES2437730	<5	<1	15	9	20	<0.1	10	28	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<50	<100	<100	<50
BH02	BH02_7.9-8.0	13/11/2024	7.9 - 8	Fill	Normal	366346	<4	<0.4	7	2	12	<0.1	4	16	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50
BH03	BH03_0.5-0.7	14/11/2024	0.5 - 0.7	Natural	Normal	366472	11	<0.4	12	19	13	<0.1	2	5	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50
BH03	BH03_0.5-0.7 - [TRIPLICATE]	14/11/2024	0.5 - 0.7	Natural	Field_D	366472	10	<0.4	14	<1	15	<0.1	2	2	-	-	-	-	-	-	-	-	-	-	-	-
BH04	BH04_0.24-0.3	15/11/2024	0.24 - 0.3	Fill	Normal	366546	<4	<0.4	7	22	11	<0.1	17	23	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50
BH04	BH04_0.24-0.3 - [TRIPLICATE]	15/11/2024	0.24 - 0.3	Fill	Field_D	366546	<4	<0.4	9	9	14	<0.1	8	24	-	-	-	-	-	-	-	-	-	-	-	-
BH05	BH05_0.2-0.25	15/11/2024	0.2 - 0.25	Fill	Normal	366546	5	<0.4	7	6	12	<0.1	20	17	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50
BH06	BH06_0.2-0.23	15/11/2024	0.2 - 0.23	Fill	Normal	366546	4	<0.4	8	12	11	0.2	83	27	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50
BH07	BH07_0.21-0.25	15/11/2024	0.21 - 0.25	Fill	Normal	366546	5	<0.4	11	5	12	<0.1	13	23	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50
BH08	BH08_0.13-0.16	15/11/2024	0.13 - 0.16	Fill	Normal	366546	<4	<0.4	10	23	23	<0.1	21	50	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	100	100
BH09	BH09_0.18-0.26	15/11/2024	0.18 - 0.26	Fill	Normal	366546	5	<0.4	5	2	10	<0.1	2	29	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50
BH09	QC205	15/11/2024	0.18 - 0.26	Fill	Interlab_D	ES2437730	<5	<1	4	<5	10	<0.1	2	19	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<50	<100	<100	<50
BH10	BH10_0.4-0.5	15/11/2024	0.4 - 0.5	Fill	Normal	366546	8	<0.4	19	11	18	<0.1	7	28	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50
BH10A	BH10A_0.2-0.3	15/11/2024	0.2 - 0.3	Fill	Normal	366546	4	<0.4	16	25	25	<0.1	12	46	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50
BH11	BH11_0.9-1.0	15/11/2024	0.9 - 1	Fill	Normal	366546	7	<0.4	18	9	23	<0.1	6	24	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50
BH12	BH12_0.2-0.3	14/11/2024	0.2 - 0.3	Natural	Normal	366472	<4	<0.4	7	3	4	<0.1	6	4	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50
BH13	BH13_0-0.1	12/11/2024	0 - 0.1	Fill	Normal	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH13	BH13_0.4-0.5	12/11/2024	0.4 - 0.5	Fill	Normal	366197	4	<0.4	24	17	19	<0.1	3	35	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	130	120	250
BH14	BH14_0.16-0.2	11/11/2024	0.16 - 0.2	Fill	Normal	366091	<4	<0.4	9	12	12	<0.1	14	20	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50
BH14	BH14_4.0-4.2	11/11/2024	4 - 4.2	Natural	Normal	366091	<4	<0.4	4	<1	5	<0.1	2	9	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50
BH14	BH14_7.8-8.0	11/11/2024	7.8 - 8	Natural	Normal	366091	<4	<0.4	10	5	11	<0.1	2	17	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50
BH15	BH15_0.2-0.3	14/11/2024	0.2 - 0.3	Fill	Normal	366472	12	<0.4	18	13	39	<0.1	9	32	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50
BH15	BH15_0.9-1.0	14/11/2024	0.9 - 1	Fill	Normal	366472	4	<0.4	22	25	35	<0.1	21	48	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50
BH16	BH16_1.0-2.1	11/11/2024	1 - 1.1	Fill	Normal	366091	<4	<0.4	15	4	11	<0.1	3	14	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50
BH16	BH16_4.0-4.1	11/11/2024	4 - 4.1	Natural	Normal	366091	<4	<0.4	7	2	3	<0.1	2	8	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50
BH16	BH16_7.9-8.0	12/11/2024	7.9 - 8	Natural	Normal	366197	<4	<0.4	4	4	2	<0.1	<1	4	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50
BH17	BH17_0.7-0.8	14/11/2024	0.7 - 0.8	Fill	Normal	366472	6	<0.4	14	4	14	<0.1	5	18	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	110	110
BH17	QC103	14/11/2024	0.7 - 0.8	Natural	Field_D	366472	5	<0.4	23	4	12	<0.1	4	14	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	150	150
BH17	BH17_1.1-1.2	14/11/2024	1.1 - 1.2	Natural	Normal	366472	6	<0.4	41	36	250	<0.1	10	140	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	120	300	420
BH17	BH17_1.6-1.7	14/11/2024	1.6 - 1.7	Fill	Normal	366472	<4	<0.4	22	3	10	<0.1	1	4	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50
BH17	QC203	14/11/2024	1.6 - 1.7	Natural	Interlab_D	ES2437730	7	<1	24	<5	10	<0.1	<2	<5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<50	<100	<100	<50
BH18	BH18_0.25-0.3	12/11/2024	0.25 - 0.3	Fill	Normal	366197	<4	<0.4	18	3	8	<0.1	6	8	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50
BH18	QC100	12/11/2024	0.25 - 0.3	Natural	Field_D	366197	<4	<0.4	31	22	29	0.1	3	39	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	110	130	240
BH18	BH18_1.0-1.1	12/11/2024	1 - 1.1	Natural	Normal	366197	<4	<0.4	2	<1	6	<0.1	<1	<1	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50
BH18	BH18_5.9-6.0	13/11/2024	5.9 - 6	Fill	Normal	366346	<4	<0.4	7	4	7	<0.1	4	17	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50
BH19	BH19_0.22-0.25	14/11/2024	0.22 - 0.25	Fill	Normal	366472	<4	<0.4	3	<1	5	<0.1	<1	<1	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50
BH20	BH20_0.2-0.35	14/11/2024	0.2 - 0.35	Fill	Normal	366472	4	<0.4	22	4	9	<0.1	9	11	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50
BH20	BH20_0.35-0.45	14/11/2024	0.35 - 0.45	Natural	Normal	366472	<4	<0.4	5	<1	3	<0.1	1	<1	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50
BH21	BH21_0.2-0.5	12/11/2024	0.2 - 0.5	Fill	Normal	366197	5	<0.4	14	7	12	<0.1	3	10	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50
BH21	BH21_0.7-0.8	12/11/2024	0.7 - 0.8	Fill	Normal	366197	18	<0.4	14	15	40	<0.1	3	78	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50
BH21	BH21_1.1-1.2	12/11/2024	1.1 - 1.2	Natural	Normal	366197	<4	<0.4	18	4	6	<0.1	2	8	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50
BH21	BH21_7.9-8.0	12/11/2024	7.9 - 8	Natural	Normal	366197	<4	<0.4	11	12	6	<0.1	1	10	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50
BH22	BH22_0.1-0.2	14/11/2024	0.1 - 0.2	Fill	Normal	366472	7	<0.4	10	25	630	<0.1	6	57	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	110	120	230
BH22	BH22_0.4-0.5	14/11/2024	0.4 - 0.5	Fill	Normal	366472	6	<0.4	13	15	57	<0.1	4	32	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50
BH23	BH23_0.2-0.3	14/11/2024	0.2 - 0.3	Natural	Normal	366472	<4	<0.4	3	1	57	<0.1	10	7	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50
BH25	BH25_0.0-0.2	15/11/2024	0 - 0.2	Fill	Normal	366546	<4	<0.4	25	65	75	<0.1	15	150	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50
BH26	BH26_0.1-0.35	15/11/2024	0.1 - 0.35	Fill	Normal	366635	<4	<0.4	7	11	180	<0.1	1	97	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50
BH27	BH27_0.2-0.3	15/11/2024	0.2 - 0.3	Fill	Normal	366635	4	<0.4	11	16	390	0.1	4	150	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	680	470	1,100
BH28	BH28_0-0.2	11/11/2024	0 - 0.2	Fill	Normal	366091	<4	<0.4	12	5	12	<0.1	5	16	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50
BH28	BH28_0.9-1.0	11/11/2024	0.9 - 1	Fill	Normal	366091	6	<0.4	5	19	13	<0.1	1	6	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50
BH29	BH29_0-0.1	11/11/2024	0 - 0.1	Fill	Normal	366091	4	<0.4	15	10	69	0.1	6	40	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50
BH30	BH30_0.0-0.1	12/11/2024	0 - 0.1	Fill	Normal	366197	<4	0.9	8	13	24	<0.1	2	170	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	380	380
PACM_01	PACM_01	11/11/2024	Surface	Fill	Normal	366091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PACM_02	PACM_02	11/11/2024	Surface	Fill	Normal	366091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PACM_03	PACM-03	12/11/2024	Surface	Fill	Normal	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PACM_04	PACM_04	15/11/2024	Surface	Fill	Normal	366635	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PACM_05	PACM_05	15/11/2024	Surface	Fill	Normal	366635	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 1: Soil Analytical Results
12 Mars Road Lane Cove West
Goodman Property Services (Aust) Pty Ltd
S22013

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								MAH								Halogenated Benzenes									Halogenated Hydrocarbons			
								1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Isopropylbenzene	n-Butylbenzene	n-Propylbenzene	p-Isopropyltoluene	sec-Butylbenzene	tert-Butylbenzene	Styrene	1,2,3-Trichlorobenzene	1,2-Dichlorobenzene	1,2,4-Trichlorobenzene	1,3-Dichlorobenzene	2-Chlorotoluene	1,4-Dichlorobenzene	4-Chlorotoluene	Bromobenzene	Chlorobenzene	1,2-Dibromoethane	Bromomethane	Dichlorodifluoromethane	Trichlorofluoromethane
							Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
							LOR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
							Human Health - NEPM Setting 'D' - Commercial / Industrial	1,800[#10]	1,500[#10]	9,900[#10]	58,000[#10]	24,000[#10]		120,000[#10]	120,000[#10]	35,000[#10]	930[#10]	9,300[#10]	110[#10]	1	23,000[#10]	11[#10]	23,000[#10]	1,800[#10]	1,300[#10]	0.16[#10]	30[#10]	370[#10]	350,000[#10]
							Maintenance of Ecosystems - Commercial / Industrial																						
							TPH Management Limits - NEPM Setting D - Commercial / Industrial																						
Location	**Field ID**	**Date**	**Depth**	**Lithology**	**Sample Type**	**Lab Report**																							
BH01	BH01_0.4-0.5	14/11/2024	0.4 - 0.5	Fill	Normal	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH01	QC104	14/11/2024	0.4 - 0.5	Fill	Field_D	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH02	BH02_0.2-0.3	13/11/2024	0.2 - 0.3	Fill	Normal	366346	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
BH02	QC201	13/11/2024	0.2 - 0.3	Natural	Interlab_D	ES2437730	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH02	BH02_7.9-8.0	13/11/2024	7.9 - 8	Fill	Normal	366346	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH03	BH03_0.5-0.7	14/11/2024	0.5 - 0.7	Natural	Normal	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH03	BH03_0.5-0.7 - [TRIPLICATE]	14/11/2024	0.5 - 0.7	Natural	Field_D	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH04	BH04_0.24-0.3	15/11/2024	0.24 - 0.3	Fill	Normal	366546	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH04	BH04_0.24-0.3 - [TRIPLICATE]	15/11/2024	0.24 - 0.3	Fill	Field_D	366546	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH05	BH05_0.2-0.25	15/11/2024	0.2 - 0.25	Fill	Normal	366546	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH06	BH06_0.2-0.23	15/11/2024	0.2 - 0.23	Fill	Normal	366546	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH07	BH07_0.21-0.25	15/11/2024	0.21 - 0.25	Fill	Normal	366546	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH08	BH08_0.13-0.16	15/11/2024	0.13 - 0.16	Fill	Normal	366546	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH09	BH09_0.18-0.26	15/11/2024	0.18 - 0.26	Fill	Normal	366546	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
BH09	QC205	15/11/2024	0.18 - 0.26	Fill	Interlab_D	ES2437730	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH10	BH10_0.4-0.5	15/11/2024	0.4 - 0.5	Fill	Normal	366546	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
BH10A	BH10A_0.2-0.3	15/11/2024	0.2 - 0.3	Fill	Normal	366546	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH11	BH11_0.9-1.0	15/11/2024	0.9 - 1	Fill	Normal	366546	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH12	BH12_0.2-0.3	14/11/2024	0.2 - 0.3	Natural	Normal	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH13	BH13_0-0.1	12/11/2024	0 - 0.1	Fill	Normal	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH13	BH13_0.4-0.5	12/11/2024	0.4 - 0.5	Fill	Normal	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH14	BH14_0.16-0.2	11/11/2024	0.16 - 0.2	Fill	Normal	366091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH14	BH14_4.0-4.2	11/11/2024	4 - 4.2	Natural	Normal	366091	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
BH14	BH14_7.8-8.0	11/11/2024	7.8 - 8	Natural	Normal	366091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH15	BH15_0.2-0.3	14/11/2024	0.2 - 0.3	Fill	Normal	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH15	BH15_0.9-1.0	14/11/2024	0.9 - 1	Fill	Normal	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH16	BH16_1.0-2.1	11/11/2024	1 - 1.1	Fill	Normal	366091	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
BH16	BH16_4.0-4.1	11/11/2024	4 - 4.1	Natural	Normal	366091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH16	BH16_7.9-8.0	12/11/2024	7.9 - 8	Natural	Normal	366197	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
BH17	BH17_0.7-0.8	14/11/2024	0.7 - 0.8	Fill	Normal	366472	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
BH17	QC103	14/11/2024	0.7 - 0.8	Natural	Field_D	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH17	BH17_1.1-1.2	14/11/2024	1.1 - 1.2	Natural	Normal	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH17	BH17_1.6-1.7	14/11/2024	1.6 - 1.7	Fill	Normal	366472	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
BH17	QC203	14/11/2024	1.6 - 1.7	Natural	Interlab_D	ES2437730	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH18	BH18_0.25-0.3	12/11/2024	0.25 - 0.3	Fill	Normal	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH18	QC100	12/11/2024	0.25 - 0.3	Natural	Field_D	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH18	BH18_1.0-1.1	12/11/2024	1 - 1.1	Natural	Normal	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH18	BH18_5.9-6.0	13/11/2024	5.9 - 6	Fill	Normal	366346	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH19	BH19_0.22-0.25	14/11/2024	0.22 - 0.25	Fill	Normal	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH20	BH20_0.2-0.35	14/11/2024	0.2 - 0.35	Fill	Normal	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH20	BH20_0.35-0.45	14/11/2024	0.35 - 0.45	Natural	Normal	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH21	BH21_0.2-0.5	12/11/2024	0.2 - 0.5	Fill	Normal	366197	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
BH21	BH21_0.7-0.8	12/11/2024	0.7 - 0.8	Fill	Normal	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH21	BH21_1.1-1.2	12/11/2024	1.1 - 1.2	Natural	Normal	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH21	BH21_7.9-8.0	12/11/2024	7.9 - 8	Natural	Normal	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH22	BH22_0.1-0.2	14/11/2024	0.1 - 0.2	Fill	Normal	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH22	BH22_0.4-0.5	14/11/2024	0.4 - 0.5	Fill	Normal	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH23	BH23_0.2-0.3	14/11/2024	0.2 - 0.3	Natural	Normal	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH25	BH25_0.0-0.2	15/11/2024	0 - 0.2	Fill	Normal	366546	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH26	BH26_0.1-0.35	15/11/2024	0.1 - 0.35	Fill	Normal	366635	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH27	BH27_0.2-0.3	15/11/2024	0.2 - 0.3	Fill	Normal	366635	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH28	BH28_0-0.2	11/11/2024	0 - 0.2	Fill	Normal	366091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH28	BH28_0.9-1.0	11/11/2024	0.9 - 1	Fill	Normal	366091	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
BH29	BH29_0-0.1	11/11/2024	0 - 0.1	Fill	Normal	366091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH30	BH30_0.0-0.1	12/11/2024	0 - 0.1	Fill	Normal	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PACM_01	PACM_01	11/11/2024	Surface	Fill	Normal	366091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PACM_02	PACM_02	11/11/2024	Surface	Fill	Normal	366091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PACM_03	PACM-03	12/11/2024	Surface	Fill	Normal	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PACM_04	PACM_04	15/11/2024	Surface	Fill	Normal	366635	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PACM_05	PACM_05	15/11/2024	Surface	Fill	Normal	366635	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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12 Mars Road Lane Cove West
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																Chlorinated Hydrocarbons										
							1,1-Dichloropropene	1,1-Dichloroethane	1,1-Dichloroethene	1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,2-Dibromo-3-chloropropane	1,1,2-Trichloroethane	1,1,2,2-Tetrachloroethane	1,2,3-Trichloropropane	1,2-Dichloroethane	1,3-Dichloropropane	1,2-Dichloropropane	2,2-Dichloropropane	Bromochloromethane	Bromodichloromethane	Bromoform	Carbon Tetrachloride	Chlorodibromomethane	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	Dibromomethane
						Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
						LOR	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
						Human Health - NEPM Setting 'D' - Commercial / Industrial		16[#10]	1,000[#10]	8.8[#10]	36,000[#10]	0.064[#10]	5[#10]	2.7[#10]	0.11[#10]	2[#10]	23,000[#10]	11[#10]		630[#10]	1.3[#10]	86[#10]	2.9[#10]	39[#10]	23,000[#10]	1.4[#10]	460[#10]	370[#10]	99[#10]
						Maintenance of Ecosystems - Commercial / Industrial																								
						TPH Management Limits - NEPM Setting D - Commercial / Industrial																								
Location	**Field ID**	**Date**	**Depth**	**Lithology**	**Sample Type**	**Lab Report**																						
BH01	BH01_0.4-0.5	14/11/2024	0.4 - 0.5	Fill	Normal	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH01	QC104	14/11/2024	0.4 - 0.5	Fill	Field_D	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH02	BH02_0.2-0.3	13/11/2024	0.2 - 0.3	Fill	Normal	366346	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
BH02	QC201	13/11/2024	0.2 - 0.3	Natural	Interlab_D	ES2437730	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH02	BH02_7.9-8.0	13/11/2024	7.9 - 8	Fill	Normal	366346	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH03	BH03_0.5-0.7	14/11/2024	0.5 - 0.7	Natural	Normal	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH03	BH03_0.5-0.7 - [TRIPLICATE]	14/11/2024	0.5 - 0.7	Natural	Field_D	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH04	BH04_0.24-0.3	15/11/2024	0.24 - 0.3	Fill	Normal	366546	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH04	BH04_0.24-0.3 - [TRIPLICATE]	15/11/2024	0.24 - 0.3	Fill	Field_D	366546	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH05	BH05_0.2-0.25	15/11/2024	0.2 - 0.25	Fill	Normal	366546	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH06	BH06_0.2-0.23	15/11/2024	0.2 - 0.23	Fill	Normal	366546	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH07	BH07_0.21-0.25	15/11/2024	0.21 - 0.25	Fill	Normal	366546	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH08	BH08_0.13-0.16	15/11/2024	0.13 - 0.16	Fill	Normal	366546	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH09	BH09_0.18-0.26	15/11/2024	0.18 - 0.26	Fill	Normal	366546	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
BH09	QC205	15/11/2024	0.18 - 0.26	Fill	Interlab_D	ES2437730	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH10	BH10_0.4-0.5	15/11/2024	0.4 - 0.5	Fill	Normal	366546	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
BH10A	BH10A_0.2-0.3	15/11/2024	0.2 - 0.3	Fill	Normal	366546	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH11	BH11_0.9-1.0	15/11/2024	0.9 - 1	Fill	Normal	366546	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH12	BH12_0.2-0.3	14/11/2024	0.2 - 0.3	Natural	Normal	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH13	BH13_0-0.1	12/11/2024	0 - 0.1	Fill	Normal	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH13	BH13_0.4-0.5	12/11/2024	0.4 - 0.5	Fill	Normal	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH14	BH14_0.16-0.2	11/11/2024	0.16 - 0.2	Fill	Normal	366091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH14	BH14_4.0-4.2	11/11/2024	4 - 4.2	Natural	Normal	366091	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
BH14	BH14_7.8-8.0	11/11/2024	7.8 - 8	Natural	Normal	366091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH15	BH15_0.2-0.3	14/11/2024	0.2 - 0.3	Fill	Normal	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH15	BH15_0.9-1.0	14/11/2024	0.9 - 1	Fill	Normal	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH16	BH16_1.0-2.1	11/11/2024	1 - 1.1	Fill	Normal	366091	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
BH16	BH16_4.0-4.1	11/11/2024	4 - 4.1	Natural	Normal	366091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH16	BH16_7.9-8.0	12/11/2024	7.9 - 8	Natural	Normal	366197	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
BH17	BH17_0.7-0.8	14/11/2024	0.7 - 0.8	Fill	Normal	366472	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
BH17	QC103	14/11/2024	0.7 - 0.8	Natural	Field_D	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH17	BH17_1.1-1.2	14/11/2024	1.1 - 1.2	Natural	Normal	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH17	BH17_1.6-1.7	14/11/2024	1.6 - 1.7	Fill	Normal	366472	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
BH17	QC203	14/11/2024	1.6 - 1.7	Natural	Interlab_D	ES2437730	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH18	BH18_0.25-0.3	12/11/2024	0.25 - 0.3	Fill	Normal	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH18	QC100	12/11/2024	0.25 - 0.3	Natural	Field_D	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH18	BH18_1.0-1.1	12/11/2024	1 - 1.1	Natural	Normal	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH18	BH18_5.9-6.0	13/11/2024	5.9 - 6	Fill	Normal	366346	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH19	BH19_0.22-0.25	14/11/2024	0.22 - 0.25	Fill	Normal	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH20	BH20_0.2-0.35	14/11/2024	0.2 - 0.35	Fill	Normal	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH20	BH20_0.35-0.45	14/11/2024	0.35 - 0.45	Natural	Normal	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH21	BH21_0.2-0.5	12/11/2024	0.2 - 0.5	Fill	Normal	366197	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
BH21	BH21_0.7-0.8	12/11/2024	0.7 - 0.8	Fill	Normal	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH21	BH21_1.1-1.2	12/11/2024	1.1 - 1.2	Natural	Normal	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH21	BH21_7.9-8.0	12/11/2024	7.9 - 8	Natural	Normal	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH22	BH22_0.1-0.2	14/11/2024	0.1 - 0.2	Fill	Normal	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH22	BH22_0.4-0.5	14/11/2024	0.4 - 0.5	Fill	Normal	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH23	BH23_0.2-0.3	14/11/2024	0.2 - 0.3	Natural	Normal	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH25	BH25_0.0-0.2	15/11/2024	0 - 0.2	Fill	Normal	366546	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH26	BH26_0.1-0.35	15/11/2024	0.1 - 0.35	Fill	Normal	366635	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH27	BH27_0.2-0.3	15/11/2024	0.2 - 0.3	Fill	Normal	366635	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH28	BH28_0-0.2	11/11/2024	0 - 0.2	Fill	Normal	366091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH28	BH28_0.9-1.0	11/11/2024	0.9 - 1	Fill	Normal	366091	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
BH29	BH29_0-0.1	11/11/2024	0 - 0.1	Fill	Normal	366091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH30	BH30_0.0-0.1	12/11/2024	0 - 0.1	Fill	Normal	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PACM_01	PACM_01	11/11/2024	Surface	Fill	Normal	366091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PACM_02	PACM_02	11/11/2024	Surface	Fill	Normal	366091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PACM_03	PACM-03	12/11/2024	Surface	Fill	Normal	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PACM_04	PACM_04	15/11/2024	Surface	Fill	Normal	366635	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PACM_05	PACM_05	15/11/2024	Surface	Fill	Normal	366635	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 1: Soil Analytical Results
12 Mars Road Lane Cove West
Goodman Property Services (Aust) Pty Ltd
S22013

									Chlorinated Hydrocarbons							Solvents	Pesticides	Polychlorinated Biphenyls								Organochlorine Pesticides					
									cis-1,3-Dichloropropene	Hexachlorobutadiene	Tetrachloroethene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Trichloroethene	Vinyl Chloride	Cyclohexane	Mirex	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	PCBs (Sum of total)	a-BHC	b-BHC	d-BHC	Dieldrin	g-BHC (Lindane)	Aldrin
	Unit								mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
	LOR								1	1	1	1	1	1	1	1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
	Human Health - NEPM Setting 'D' - Commercial / Industrial									5.3[#10]	100[#10]	300[#10]		6[#10]	1.7[#10]	27,000[#10]	100[#1]								7[#11]	0.36[#10]	1.3[#10]			2.5[#10]	
	Maintenance of Ecosystems - Commercial / Industrial																														
	TPH Management Limits - NEPM Setting D - Commercial / Industrial																														
Location	**Field ID**	**Date**	**Depth**	**Lithology**	**Sample Type**	**Lab Report**																								
BH01	BH01_0.4-0.5	14/11/2024	0.4 - 0.5	Fill	Normal	366472	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH01	QC104	14/11/2024	0.4 - 0.5	Fill	Field_D	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH02	BH02_0.2-0.3	13/11/2024	0.2 - 0.3	Fill	Normal	366346	<1	<1	<1	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH02	QC201	13/11/2024	0.2 - 0.3	Natural	Interlab_D	ES2437730	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH02	BH02_7.9-8.0	13/11/2024	7.9 - 8	Fill	Normal	366346	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH03	BH03_0.5-0.7	14/11/2024	0.5 - 0.7	Natural	Normal	366472	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH03	BH03_0.5-0.7 - [TRIPLICATE]	14/11/2024	0.5 - 0.7	Natural	Field_D	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH04	BH04_0.24-0.3	15/11/2024	0.24 - 0.3	Fill	Normal	366546	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH04	BH04_0.24-0.3 - [TRIPLICATE]	15/11/2024	0.24 - 0.3	Fill	Field_D	366546	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH05	BH05_0.2-0.25	15/11/2024	0.2 - 0.25	Fill	Normal	366546	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH06	BH06_0.2-0.23	15/11/2024	0.2 - 0.23	Fill	Normal	366546	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH07	BH07_0.21-0.25	15/11/2024	0.21 - 0.25	Fill	Normal	366546	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH08	BH08_0.13-0.16	15/11/2024	0.13 - 0.16	Fill	Normal	366546	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH09	BH09_0.18-0.26	15/11/2024	0.18 - 0.26	Fill	Normal	366546	<1	<1	<1	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH09	QC205	15/11/2024	0.18 - 0.26	Fill	Interlab_D	ES2437730	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH10	BH10_0.4-0.5	15/11/2024	0.4 - 0.5	Fill	Normal	366546	<1	<1	<1	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH10A	BH10A_0.2-0.3	15/11/2024	0.2 - 0.3	Fill	Normal	366546	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH11	BH11_0.9-1.0	15/11/2024	0.9 - 1	Fill	Normal	366546	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH12	BH12_0.2-0.3	14/11/2024	0.2 - 0.3	Natural	Normal	366472	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH13	BH13_0-0.1	12/11/2024	0 - 0.1	Fill	Normal	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH13	BH13_0.4-0.5	12/11/2024	0.4 - 0.5	Fill	Normal	366197	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH14	BH14_0.16-0.2	11/11/2024	0.16 - 0.2	Fill	Normal	366091	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH14	BH14_4.0-4.2	11/11/2024	4 - 4.2	Natural	Normal	366091	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH14	BH14_7.8-8.0	11/11/2024	7.8 - 8	Natural	Normal	366091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH15	BH15_0.2-0.3	14/11/2024	0.2 - 0.3	Fill	Normal	366472	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH15	BH15_0.9-1.0	14/11/2024	0.9 - 1	Fill	Normal	366472	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH16	BH16_1.0-2.1	11/11/2024	1 - 1.1	Fill	Normal	366091	<1	<1	<1	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH16	BH16_4.0-4.1	11/11/2024	4 - 4.1	Natural	Normal	366091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH16	BH16_7.9-8.0	12/11/2024	7.9 - 8	Natural	Normal	366197	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH17	BH17_0.7-0.8	14/11/2024	0.7 - 0.8	Fill	Normal	366472	<1	<1	<1	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH17	QC103	14/11/2024	0.7 - 0.8	Natural	Field_D	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH17	BH17_1.1-1.2	14/11/2024	1.1 - 1.2	Natural	Normal	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH17	BH17_1.6-1.7	14/11/2024	1.6 - 1.7	Fill	Normal	366472	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH17	QC203	14/11/2024	1.6 - 1.7	Natural	Interlab_D	ES2437730	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH18	BH18_0.25-0.3	12/11/2024	0.25 - 0.3	Fill	Normal	366197	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH18	QC100	12/11/2024	0.25 - 0.3	Natural	Field_D	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH18	BH18_1.0-1.1	12/11/2024	1 - 1.1	Natural	Normal	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH18	BH18_5.9-6.0	13/11/2024	5.9 - 6	Fill	Normal	366346	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH19	BH19_0.22-0.25	14/11/2024	0.22 - 0.25	Fill	Normal	366472	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH20	BH20_0.2-0.35	14/11/2024	0.2 - 0.35	Fill	Normal	366472	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH20	BH20_0.35-0.45	14/11/2024	0.35 - 0.45	Natural	Normal	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH21	BH21_0.2-0.5	12/11/2024	0.2 - 0.5	Fill	Normal	366197	<1	<1	<1	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH21	BH21_0.7-0.8	12/11/2024	0.7 - 0.8	Fill	Normal	366197	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH21	BH21_1.1-1.2	12/11/2024	1.1 - 1.2	Natural	Normal	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH21	BH21_7.9-8.0	12/11/2024	7.9 - 8	Natural	Normal	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH22	BH22_0.1-0.2	14/11/2024	0.1 - 0.2	Fill	Normal	366472	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH22	BH22_0.4-0.5	14/11/2024	0.4 - 0.5	Fill	Normal	366472	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH23	BH23_0.2-0.3	14/11/2024	0.2 - 0.3	Natural	Normal	366472	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH25	BH25_0.0-0.2	15/11/2024	0 - 0.2	Fill	Normal	366546	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH26	BH26_0.1-0.35	15/11/2024	0.1 - 0.35	Fill	Normal	366635	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH27	BH27_0.2-0.3	15/11/2024	0.2 - 0.3	Fill	Normal	366635	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH28	BH28_0-0.2	11/11/2024	0 - 0.2	Fill	Normal	366091	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH28	BH28_0.9-1.0	11/11/2024	0.9 - 1	Fill	Normal	366091	<1	<1	<1	<1	<1	<1	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH29	BH29_0-0.1	11/11/2024	0 - 0.1	Fill	Normal	366091	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH30	BH30_0.0-0.1	12/11/2024	0 - 0.1	Fill	Normal	366197	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
PACM_01	PACM_01	11/11/2024	Surface	Fill	Normal	366091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PACM_02	PACM_02	11/11/2024	Surface	Fill	Normal	366091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PACM_03	PACM-03	12/11/2024	Surface	Fill	Normal	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PACM_04	PACM_04	15/11/2024	Surface	Fill	Normal	366635	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PACM_05	PACM_05	15/11/2024	Surface	Fill	Normal	366635	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 1: Soil Analytical Results
12 Mars Road Lane Cove West
Goodman Property Services (Aust) Pty Ltd
S22013

						Organochlorine Pesticides														Fungicides	Asbestos				
						Aldrin + Dieldrin	DDT	4,4'-DDE	DDD	DDT+DDE+DDD	Endosulfan I	Endosulfan II	Endosulfan sulfate	Endrin	Chlordane (cis)	Chlordane (trans)	Endrin aldehyde	Heptachlor	Heptachlor epoxide	Methoxychlor	Hexachlorobenzene	Asbestos	Asbestos in soil (<2mm AF/FA)	Asbestos in soil (>7mm ACM)	Total Asbestos g/kg*
					Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	-	g	%(w/w)	%(w/w)	mg/kg
					LOR	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1					
					Human Health - NEPM Setting 'D' - Commercial / Industrial	45[#1]				3,600[#1]			4,900[#10]	100[#1]	500[#10]	500[#10]		50[#1]	0.33[#10]	2,500[#1]	80[#1]			0.001	0.05	
					Maintenance of Ecosystems - Commercial / Industrial		640[#24]																			
					TPH Management Limits - NEPM Setting D - Commercial / Industrial																					
Location	**Field ID**	**Date**	**Depth**	**Lithology**	**Sample Type**	**Lab Report**																				
BH01	BH01_0.4-0.5	14/11/2024	0.4 - 0.5	Fill	Normal	366472	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Absent	0	<0.001	<0.01	<100
BH01	QC104	14/11/2024	0.4 - 0.5	Fill	Field_D	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH02	BH02_0.2-0.3	13/11/2024	0.2 - 0.3	Fill	Normal	366346	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Absent	0	<0.001	<0.01	<100
BH02	QC201	13/11/2024	0.2 - 0.3	Natural	Interlab_D	ES2437730	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH02	BH02_7.9-8.0	13/11/2024	7.9 - 8	Fill	Normal	366346	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH03	BH03_0.5-0.7	14/11/2024	0.5 - 0.7	Natural	Normal	366472	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-
BH03	BH03_0.5-0.7 - [TRIPLICATE]	14/11/2024	0.5 - 0.7	Natural	Field_D	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH04	BH04_0.24-0.3	15/11/2024	0.24 - 0.3	Fill	Normal	366546	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Absent	0	<0.001	<0.01	<100
BH04	BH04_0.24-0.3 - [TRIPLICATE]	15/11/2024	0.24 - 0.3	Fill	Field_D	366546	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH05	BH05_0.2-0.25	15/11/2024	0.2 - 0.25	Fill	Normal	366546	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Present	0.1557	0.0295	<0.01	294.6
BH06	BH06_0.2-0.23	15/11/2024	0.2 - 0.23	Fill	Normal	366546	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-
BH07	BH07_0.21-0.25	15/11/2024	0.21 - 0.25	Fill	Normal	366546	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-
BH08	BH08_0.13-0.16	15/11/2024	0.13 - 0.16	Fill	Normal	366546	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-
BH09	BH09_0.18-0.26	15/11/2024	0.18 - 0.26	Fill	Normal	366546	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Absent	0	<0.001	<0.01	<100
BH09	QC205	15/11/2024	0.18 - 0.26	Fill	Interlab_D	ES2437730	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH10	BH10_0.4-0.5	15/11/2024	0.4 - 0.5	Fill	Normal	366546	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Absent	0	<0.001	<0.01	<100
BH10A	BH10A_0.2-0.3	15/11/2024	0.2 - 0.3	Fill	Normal	366546	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Present	0.0028	<0.001	<0.01	<100
BH11	BH11_0.9-1.0	15/11/2024	0.9 - 1	Fill	Normal	366546	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Absent	0	<0.001	<0.01	<100
BH12	BH12_0.2-0.3	14/11/2024	0.2 - 0.3	Natural	Normal	366472	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Absent	0	<0.001	<0.01	<100
BH13	BH13_0-0.1	12/11/2024	0 - 0.1	Fill	Normal	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Absent	0	<0.001	<0.01	<100
BH13	BH13_0.4-0.5	12/11/2024	0.4 - 0.5	Fill	Normal	366197	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Absent	0	<0.001	<0.01	<100
BH14	BH14_0.16-0.2	11/11/2024	0.16 - 0.2	Fill	Normal	366091	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Absent	0	<0.001	<0.01	<100
BH14	BH14_4.0-4.2	11/11/2024	4 - 4.2	Natural	Normal	366091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH14	BH14_7.8-8.0	11/11/2024	7.8 - 8	Natural	Normal	366091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH15	BH15_0.2-0.3	14/11/2024	0.2 - 0.3	Fill	Normal	366472	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Present	0.0018	<0.001	<0.01	<100
BH15	BH15_0.9-1.0	14/11/2024	0.9 - 1	Fill	Normal	366472	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Absent	0	<0.001	<0.01	<100
BH16	BH16_1.0-2.1	11/11/2024	1 - 1.1	Fill	Normal	366091	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Absent	0	<0.001	<0.01	<100
BH16	BH16_4.0-4.1	11/11/2024	4 - 4.1	Natural	Normal	366091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH16	BH16_7.9-8.0	12/11/2024	7.9 - 8	Natural	Normal	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH17	BH17_0.7-0.8	14/11/2024	0.7 - 0.8	Fill	Normal	366472	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Absent	0	<0.001	<0.01	<100
BH17	QC103	14/11/2024	0.7 - 0.8	Natural	Field_D	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH17	BH17_1.1-1.2	14/11/2024	1.1 - 1.2	Natural	Normal	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH17	BH17_1.6-1.7	14/11/2024	1.6 - 1.7	Fill	Normal	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH17	QC203	14/11/2024	1.6 - 1.7	Natural	Interlab_D	ES2437730	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH18	BH18_0.25-0.3	12/11/2024	0.25 - 0.3	Fill	Normal	366197	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Absent	0	<0.001	<0.01	<100
BH18	QC100	12/11/2024	0.25 - 0.3	Natural	Field_D	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH18	BH18_1.0-1.1	12/11/2024	1 - 1.1	Natural	Normal	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH18	BH18_5.9-6.0	13/11/2024	5.9 - 6	Fill	Normal	366346	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH19	BH19_0.22-0.25	14/11/2024	0.22 - 0.25	Fill	Normal	366472	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-
BH20	BH20_0.2-0.35	14/11/2024	0.2 - 0.35	Fill	Normal	366472	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Absent	0	<0.001	<0.01	<100
BH20	BH20_0.35-0.45	14/11/2024	0.35 - 0.45	Natural	Normal	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH21	BH21_0.2-0.5	12/11/2024	0.2 - 0.5	Fill	Normal	366197	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Absent	0	<0.001	<0.01	<100
BH21	BH21_0.7-0.8	12/11/2024	0.7 - 0.8	Fill	Normal	366197	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Absent	0	<0.001	<0.01	<100
BH21	BH21_1.1-1.2	12/11/2024	1.1 - 1.2	Natural	Normal	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH21	BH21_7.9-8.0	12/11/2024	7.9 - 8	Natural	Normal	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH22	BH22_0.1-0.2	14/11/2024	0.1 - 0.2	Fill	Normal	366472	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Absent	0	<0.001	<0.01	<100
BH22	BH22_0.4-0.5	14/11/2024	0.4 - 0.5	Fill	Normal	366472	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Absent	0	<0.001	<0.01	<100
BH23	BH23_0.2-0.3	14/11/2024	0.2 - 0.3	Natural	Normal	366472	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Absent	0	<0.001	<0.01	<100
BH25	BH25_0.0-0.2	15/11/2024	0 - 0.2	Fill	Normal	366546	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Absent	0	<0.001	<0.01	<100
BH26	BH26_0.1-0.35	15/11/2024	0.1 - 0.35	Fill	Normal	366635	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH27	BH27_0.2-0.3	15/11/2024	0.2 - 0.3	Fill	Normal	366635	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH28	BH28_0-0.2	11/11/2024	0 - 0.2	Fill	Normal	366091	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Absent	0	<0.001	<0.01	<100
BH28	BH28_0.9-1.0	11/11/2024	0.9 - 1	Fill	Normal	366091	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Absent	0	<0.001	<0.01	<100
BH29	BH29_0-0.1	11/11/2024	0 - 0.1	Fill	Normal	366091	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Absent	0	<0.001	<0.01	<100
BH30	BH30_0.0-0.1	12/11/2024	0 - 0.1	Fill	Normal	366197	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	Absent	0	<0.001	<0.01	<100
PACM_01	PACM_01	11/11/2024	Surface	Fill	Normal	366091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Present	-	-	-	-
PACM_02	PACM_02	11/11/2024	Surface	Fill	Normal	366091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Absent	-	-	-	-
PACM_03	PACM-03	12/11/2024	Surface	Fill	Normal	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Absent	-	-	-	-
PACM_04	PACM_04	15/11/2024	Surface	Fill	Normal	366635	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Present	-	-	-	-
PACM_05	PACM_05	15/11/2024	Surface	Fill	Normal	366635	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Absent	-	-	-	-

Table 1: Soil Analytical Results
12 Mars Road Lane Cove West
Goodman Property Services (Aust) Pty Ltd
S22013

	(n:2) Fluorotelomer Sulfonic Acids				Perfluoroalkane Carboxylic Acids					Perfluoroalkane Sulfonic Acids				PFAS	
	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorohexanoic acid (PFHxA)	Perfluoropentanoic acid (PFPeA)	Perfluoroheptanoic acid (PFHpA)	Perfluorobutanoic acid (PFBA)	Perfluorooctanoic acid (PFOA)	Perfluorooctanesulfonic acid (PFOS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutane sulfonic acid (PFBS)	Sum of PFHxS and PFOS	Sum of US EPA PFAS (PFOS + PFOA)	Sum of PFAS
Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR	0.0005	0.0001	0.0002	0.0005	0.0002	0.0002	0.0002	0.001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
Human Health - NEPM Setting 'D' - Commercial / Industrial									50[#12]	20[#13]	20[#13]		20[#12]		
Maintenance of Ecosystems - Commercial / Industrial										0.01[#25]					
TPH Management Limits - NEPM Setting D - Commercial / Industrial															

Location	Field ID	Date	Depth	Lithology	Sample Type	Lab Report													
BH01	BH01_0.4-0.5	14/11/2024	0.4 - 0.5	Fill	Normal	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH01	QC104	14/11/2024	0.4 - 0.5	Fill	Field_D	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH02	BH02_0.2-0.3	13/11/2024	0.2 - 0.3	Fill	Normal	366346	-	<0.0001	<0.0002	-	-	-	-	-	0.0002	0.0019	<0.0001	<0.0001	0.0019	0.0021	0.0021
BH02	QC201	13/11/2024	0.2 - 0.3	Natural	Interlab_D	ES2437730	<0.0005	<0.0005	<0.0005	<0.0005	<0.0002	<0.0002	<0.0002	<0.001	<0.0002	0.0021	<0.0002	<0.0002	0.0021	-	-
BH02	BH02_7.9-8.0	13/11/2024	7.9 - 8	Fill	Normal	366346	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH03	BH03_0.5-0.7	14/11/2024	0.5 - 0.7	Natural	Normal	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH03	BH03_0.5-0.7 - [TRIPLICATE]	14/11/2024	0.5 - 0.7	Natural	Field_D	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH04	BH04_0.24-0.3	15/11/2024	0.24 - 0.3	Fill	Normal	366546	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH04	BH04_0.24-0.3 - [TRIPLICATE]	15/11/2024	0.24 - 0.3	Fill	Field_D	366546	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH05	BH05_0.2-0.25	15/11/2024	0.2 - 0.25	Fill	Normal	366546	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH06	BH06_0.2-0.23	15/11/2024	0.2 - 0.23	Fill	Normal	366546	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH07	BH07_0.21-0.25	15/11/2024	0.21 - 0.25	Fill	Normal	366546	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH08	BH08_0.13-0.16	15/11/2024	0.13 - 0.16	Fill	Normal	366546	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH09	BH09_0.18-0.26	15/11/2024	0.18 - 0.26	Fill	Normal	366546	-	<0.0001	<0.0002	-	-	-	-	-	<0.0001	0.0004	<0.0001	<0.0001	0.0004	0.0004	0.0004
BH09	QC205	15/11/2024	0.18 - 0.26	Fill	Interlab_D	ES2437730	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH10	BH10_0.4-0.5	15/11/2024	0.4 - 0.5	Fill	Normal	366546	-	<0.0001	<0.0002	-	-	-	-	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
BH10A	BH10A_0.2-0.3	15/11/2024	0.2 - 0.3	Fill	Normal	366546	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH11	BH11_0.9-1.0	15/11/2024	0.9 - 1	Fill	Normal	366546	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH12	BH12_0.2-0.3	14/11/2024	0.2 - 0.3	Natural	Normal	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH13	BH13_0-0.1	12/11/2024	0 - 0.1	Fill	Normal	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH13	BH13_0.4-0.5	12/11/2024	0.4 - 0.5	Fill	Normal	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH14	BH14_0.16-0.2	11/11/2024	0.16 - 0.2	Fill	Normal	366091	-	<0.0001	<0.0002	-	-	-	-	-	0.0001	0.0002	<0.0001	<0.0001	0.0002	0.0003	0.0003
BH14	BH14_4.0-4.2	11/11/2024	4 - 4.2	Natural	Normal	366091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH14	BH14_7.8-8.0	11/11/2024	7.8 - 8	Natural	Normal	366091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH15	BH15_0.2-0.3	14/11/2024	0.2 - 0.3	Fill	Normal	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH15	BH15_0.9-1.0	14/11/2024	0.9 - 1	Fill	Normal	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH16	BH16_1.0-2.1	11/11/2024	1 - 1.1	Fill	Normal	366091	-	<0.0001	<0.0002	-	-	-	-	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
BH16	BH16_4.0-4.1	11/11/2024	4 - 4.1	Natural	Normal	366091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH16	BH16_7.9-8.0	12/11/2024	7.9 - 8	Natural	Normal	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH17	BH17_0.7-0.8	14/11/2024	0.7 - 0.8	Fill	Normal	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH17	QC103	14/11/2024	0.7 - 0.8	Natural	Field_D	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH17	BH17_1.1-1.2	14/11/2024	1.1 - 1.2	Natural	Normal	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH17	BH17_1.6-1.7	14/11/2024	1.6 - 1.7	Fill	Normal	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH17	QC203	14/11/2024	1.6 - 1.7	Natural	Interlab_D	ES2437730	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH18	BH18_0.25-0.3	12/11/2024	0.25 - 0.3	Fill	Normal	366197	-	<0.0001	<0.0002	-	-	-	-	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
BH18	QC100	12/11/2024	0.25 - 0.3	Natural	Field_D	366197	-	<0.0001	<0.0002	-	-	-	-	-	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
BH18	BH18_1.0-1.1	12/11/2024	1 - 1.1	Natural	Normal	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH18	BH18_5.9-6.0	13/11/2024	5.9 - 6	Fill	Normal	366346	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH19	BH19_0.22-0.25	14/11/2024	0.22 - 0.25	Fill	Normal	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH20	BH20_0.2-0.35	14/11/2024	0.2 - 0.35	Fill	Normal	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH20	BH20_0.35-0.45	14/11/2024	0.35 - 0.45	Natural	Normal	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH21	BH21_0.2-0.5	12/11/2024	0.2 - 0.5	Fill	Normal	366197	-	<0.0001	<0.0002	-	-	-	-	-	<0.0001	0.0001	<0.0001	<0.0001	0.0001	0.0001	0.0001
BH21	BH21_0.7-0.8	12/11/2024	0.7 - 0.8	Fill	Normal	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH21	BH21_1.1-1.2	12/11/2024	1.1 - 1.2	Natural	Normal	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH21	BH21_7.9-8.0	12/11/2024	7.9 - 8	Natural	Normal	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH22	BH22_0.1-0.2	14/11/2024	0.1 - 0.2	Fill	Normal	366472	-	<0.0001	<0.0002	-	-	-	-	-	<0.0001	0.0005	<0.0001	<0.0001	0.0005	0.0005	0.0005
BH22	BH22_0.4-0.5	14/11/2024	0.4 - 0.5	Fill	Normal	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH23	BH23_0.2-0.3	14/11/2024	0.2 - 0.3	Natural	Normal	366472	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH25	BH25_0.0-0.2	15/11/2024	0 - 0.2	Fill	Normal	366546	-	<0.0001	<0.0002	-	-	-	-	-	0.001	0.0011	<0.0001	<0.0001	0.0011	0.002	0.002
BH26	BH26_0.1-0.35	15/11/2024	0.1 - 0.35	Fill	Normal	366635	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH27	BH27_0.2-0.3	15/11/2024	0.2 - 0.3	Fill	Normal	366635	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH28	BH28_0-0.2	11/11/2024	0 - 0.2	Fill	Normal	366091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH28	BH28_0.9-1.0	11/11/2024	0.9 - 1	Fill	Normal	366091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH29	BH29_0-0.1	11/11/2024	0 - 0.1	Fill	Normal	366091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH30	BH30_0.0-0.1	12/11/2024	0 - 0.1	Fill	Normal	366197	-	<0.0001	<0.0002	-	-	-	-	-	0.0002	0.0007	<0.0001	<0.0001	0.0007	0.0008	0.0008
PACM_01	PACM_01	11/11/2024	Surface	Fill	Normal	366091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PACM_02	PACM_02	11/11/2024	Surface	Fill	Normal	366091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PACM_03	PACM-03	12/11/2024	Surface	Fill	Normal	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PACM_04	PACM_04	15/11/2024	Surface	Fill	Normal	366635	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PACM_05	PACM_05	15/11/2024	Surface	Fill	Normal	366635	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 1: Soil Analytical Results
12 Mars Road Lane Cove West
Goodman Property Services (Aust) Pty Ltd
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Comments

#1 NEPC (2013) - HIL 'D'.
#2 NEPC (2013) - HIL 'D'. Value is for Chromium (VI). Refer Cr III and Cr VI results if speciated data are available.
#3 NEPC (2013) - HIL 'D'. Assumes 50% bioavailability. Consider site-specific bioavailability where appropriate.
#4 Friebel & Nadebaum (2011) - HSL-D.
#5 HSL for TRH F1 adopted for this historical fraction. Where F1 data are available, screening based on this fraction is not required.
#6 HSL for TRH F2 adopted for this historical fraction. Where F2 data are available, screening based on this fraction is not required.
#7 HSL based on vapour intrusion pathway (sand <1 m depth)
#8 HSL based on direct contact pathways (Friebel and Nadebaum, 2011) as vapour intrusion HSL is not limiting.
#9 HSL based on direct contact pathways (Friebel and Nadebaum, 2011) as fraction is not volatile.
#10 USEPA RSLs (May 2024 Update) - Industrial.
#11 NEPC (2013) - HIL 'D'. Relates to non-dioxin like PCBs only. Where a PCB source is known or suspected, site-specific risk assessment should be undertaken.
#12 PFAS NEMP 2.0: Health, Industrial/commercial (HIL D)
#13 PFAS NEMP 2.0: Health, Industrial/commercial (HIL D). Value is for PFOS+PFHxS
#14 NEPC (2013) EIL - Commercial and Industrial. Value applies to aged arsenic (contamination present in soil for at least two years). For fresh contamination refer Schedule B7 of the NEPM.
#15 NEPC (2013) EIL - Commercial and Industrial. Value is for chromium III. Initial screening value applicable to all aged soils (see text). Derive site-specific value if contamination is fresh (<2 years) or if EILs are exceeded.
#16 NEPC (2013) EIL - Commercial and Industrial. Initial screening value applicable to all aged soils (see text). Derive site-specific value if contamination is fresh (<2 years) or if EILs are exceeded.
#17 NEPC (2013) EIL - Commercial and Industrial. Initial screening value applicable to all aged soils (see text). Derive site-specific value if contamination is fresh (<2 years) or if EILs are exceeded. Assumes ABC of 30 mg/kg
#18 NEPC (2013) ESL - Commercial and Industrial. Coarse soil value adopted for initial screening.
#19 NEPC (2013) ESL - Commercial and Industrial. Fine soil value (most conservative) adopted for initial screening.
#20 ESL for TRH F1 adopted for this historical fraction. Where F1 data are available, screening based on this fraction is not required.
#21 ESL for TRH >C10-C16 adopted for this historical fraction. Where >C10-C16 data are available, screening based on this fraction is not required.
#22 ESL for coarse soil adopted for initial screening.
#23 NEPC (2013) ESL - Commercial and Industrial. Value applies to both coarse and fine soil.
#24 NEPC (2013) EIL - Commercial and Industrial. Value applies to both fresh and aged contamination.
#25 PFAS NEMP 2.0: Ecological, indirect exposure
#26 Coarse soil values adopted for initial screening

Table 2: Soil Analytical Results (Waste)
12 Mars Road Lane Cove West
Goodman Property Services (Aust) Pty Ltd
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						Metals								BTEX						Total Petroleum Hydrocarbons				
						Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Total Xylene	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Sum)
					Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
					LOR	4	0.4	1	1	1	0.1	1	1	0.2	0.5	0.5	0.5	0.5	0.5	10	50	100	100	50
					NSW EPA 2014 - General Solid Waste CT1 (No Leaching)	100	20	100[#1]		100	4	40		10	288	600			1,000	650				10,000
					NSW EPA 2014 - General Solid Waste SCC1 (with leached)	**500**	**100**	**1,900[#1]**		**1,500**	**50**	**1,050**		**18**	**518**	**1,080**			**1,800**	**650**				**10,000**
					NSW EPA 2014 - General Solid Waste TCLP1 (leached)																			
					NSW EPA 2014 - Restricted Solid Waste CT2 (No Leaching)	400	80	400[#1]		400	16	160		40	1,152	2,400			4,000	2,600				40,000
					NSW EPA 2014 - Restricted Solid Waste SCC2 (with leached)	*2,000*	*400*	*7,600[#1]*		*6,000*	*200*	*4,200*		*72*	*2,073*	*4,320*			*7,200*	*2,600*				*40,000*
					NSW EPA 2014 - Restricted Solid Waste TCLP2 (leached)																			
Location	**Field ID**	**Date**	**Depth**	**Lithology**	**Sample Type**	**Lab Report**																		
BH01	BH01_0.4-0.5	14/11/2024	0.4 - 0.5	Fill	Normal	366472	6	<0.4	24	13	43	<0.1	13	43	<0.2	<0.5	<1	<2	<1	<1	<25	<50	<100	<100	<50
BH01	QC104	14/11/2024	0.4 - 0.5	Fill	Field_D	366472	5	<0.4	15	10	22	<0.1	9	32	<0.2	<0.5	<1	<2	<1	<1	<25	<50	<100	<100	<50
BH02	BH02_0.2-0.3	13/11/2024	0.2 - 0.3	Fill	Normal	366346	<4	<0.4	16	10	14	<0.1	9	31	<0.2	<0.5	<1	<2	<1	<1	<25	<50	<100	<100	<50
BH02	QC201	13/11/2024	0.2 - 0.3	Fill	Interlab_D	ES2437730	<5	<1	15	9	20	<0.1	10	28	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<50
BH02	BH02_7.9-8.0	13/11/2024	7.9 - 8	Natural	Normal	366346	<4	<0.4	7	2	12	<0.1	4	16	<0.2	<0.5	<1	<2	<1	<1	<25	<50	<100	<100	<50
BH03	BH03_0.5-0.7	14/11/2024	0.5 - 0.7	Natural	Normal	366472	11	<0.4	12	19	13	<0.1	2	5	<0.2	<0.5	<1	<2	<1	<1	<25	<50	<100	<100	<50
BH03	BH03_0.5-0.7 - [TRIPLICATE]	14/11/2024	0.5 - 0.7	Natural	Field_D	366472	10	<0.4	14	<1	15	<0.1	2	2	-	-	-	-	-	-	-	-	-	-	-
BH04	BH04_0.24-0.3	15/11/2024	0.24 - 0.3	Fill	Normal	366546	<4	<0.4	7	22	11	<0.1	17	23	<0.2	<0.5	<1	<2	<1	<1	<25	<50	<100	<100	<50
BH04	BH04_0.24-0.3 - [TRIPLICATE]	15/11/2024	0.24 - 0.3	Fill	Field_D	366546	<4	<0.4	9	9	14	<0.1	8	24	-	-	-	-	-	-	-	-	-	-	-
BH05	BH05_0.2-0.25	15/11/2024	0.2 - 0.25	Fill	Normal	366546	5	<0.4	7	6	12	<0.1	20	17	<0.2	<0.5	<1	<2	<1	<1	<25	<50	<100	<100	<50
BH06	BH06_0.2-0.23	15/11/2024	0.2 - 0.23	Fill	Normal	366546	4	<0.4	8	12	11	0.2	83	27	<0.2	<0.5	<1	<2	<1	<1	<25	<50	<100	<100	<50
BH07	BH07_0.21-0.25	15/11/2024	0.21 - 0.25	Fill	Normal	366546	5	<0.4	11	5	12	<0.1	13	23	<0.2	<0.5	<1	<2	<1	<1	<25	<50	<100	<100	<50
BH08	BH08_0.13-0.16	15/11/2024	0.13 - 0.16	Fill	Normal	366546	<4	<0.4	10	23	23	<0.1	21	50	<0.2	<0.5	<1	<2	<1	<1	<25	<50	<100	100	100
BH09	BH09_0.18-0.26	15/11/2024	0.18 - 0.26	Fill	Normal	366546	5	<0.4	5	2	10	<0.1	2	29	<0.2	<0.5	<1	<2	<1	<1	<25	<50	<100	<100	<50
BH09	QC205	15/11/2024	0.18 - 0.26	Fill	Interlab_D	ES2437730	<5	<1	4	<5	10	<0.1	2	19	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<50
BH10	BH10_0.4-0.5	15/11/2024	0.4 - 0.5	Fill	Normal	366546	8	<0.4	19	11	18	<0.1	7	28	<0.2	<0.5	<1	<2	<1	<1	<25	<50	<100	<100	<50
BH10A	BH10A_0.2-0.3	15/11/2024	0.2 - 0.3	Fill	Normal	366546	4	<0.4	16	25	25	<0.1	12	46	<0.2	<0.5	<1	<2	<1	<1	<25	<50	<100	<100	<50
BH11	BH11_0.9-1.0	15/11/2024	0.9 - 1	Fill	Normal	366546	7	<0.4	18	9	23	<0.1	6	24	<0.2	<0.5	<1	<2	<1	<1	<25	<50	<100	<100	<50
BH12	BH12_0.2-0.3	14/11/2024	0.2 - 0.3	Natural	Normal	366472	<4	<0.4	7	3	4	<0.1	6	4	<0.2	<0.5	<1	<2	<1	<1	<25	<50	<100	<100	<50
BH13	BH13_0-0.1	12/11/2024	0 - 0.1	Fill	Normal	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH13	BH13_0.4-0.5	12/11/2024	0.4 - 0.5	Fill	Normal	366197	4	<0.4	24	17	19	<0.1	3	35	<0.2	<0.5	<1	<2	<1	<1	<25	<50	130	120	250
BH14	BH14_0.16-0.2	11/11/2024	0.16 - 0.2	Fill	Normal	366091	<4	<0.4	9	12	12	<0.1	14	20	<0.2	<0.5	<1	<2	<1	<1	<25	<50	<100	<100	<50
BH14	BH14_4.0-4.2	11/11/2024	4 - 4.2	Natural	Normal	366091	<4	<0.4	4	<1	5	<0.1	2	9	<0.2	<0.5	<1	<2	<1	<1	<25	<50	<100	<100	<50
BH14	BH14_7.8-8.0	11/11/2024	7.8 - 8	Natural	Normal	366091	<4	<0.4	10	5	11	<0.1	2	17	<0.2	<0.5	<1	<2	<1	<1	<25	<50	<100	<100	<50
BH15	BH15_0.2-0.3	14/11/2024	0.2 - 0.3	Fill	Normal	366472	12	<0.4	18	13	39	<0.1	9	32	<0.2	<0.5	<1	<2	<1	<1	<25	<50	<100	<100	<50
BH15	BH15_0.9-1.0	14/11/2024	0.9 - 1	Fill	Normal	366472	4	<0.4	22	25	35	<0.1	21	48	<0.2	<0.5	<1	<2	<1	<1	<25	<50	<100	<100	<50
BH16	BH16_1.0-2.1	11/11/2024	1 - 1.1	Fill	Normal	366091	<4	<0.4	15	4	11	<0.1	3	14	<0.2	<0.5	<1	<2	<1	<1	<25	<50	<100	<100	<50
BH16	BH16_4.0-4.1	11/11/2024	4 - 4.1	Natural	Normal	366091	<4	<0.4	7	2	3	<0.1	2	8	<0.2	<0.5	<1	<2	<1	<1	<25	<50	<100	<100	<50
BH16	BH16_7.9-8.0	12/11/2024	7.9 - 8	Natural	Normal	366197	<4	<0.4	4	4	2	<0.1	<1	4	<0.2	<0.5	<1	<2	<1	<1	<25	<50	<100	<100	<50
BH17	BH17_0.7-0.8	14/11/2024	0.7 - 0.8	Fill	Normal	366472	6	<0.4	14	4	14	<0.1	5	18	<0.2	<0.5	<1	<2	<1	<1	<25	<50	<100	110	110
BH17	QC103	14/11/2024	0.7 - 0.8	Fill	Field_D	366472	5	<0.4	23	4	12	<0.1	4	14	<0.2	<0.5	<1	<2	<1	<1	<25	<50	<100	150	150
BH17	BH17_1.1-1.2	14/11/2024	1.1 - 1.2	Natural	Normal	366472	6	<0.4	41	36	250	<0.1	10	140	<0.2	<0.5	<1	<2	<1	<1	<25	<50	120	300	420
BH17	BH17_1.6-1.7	14/11/2024	1.6 - 1.7	Natural	Normal	366472	<4	<0.4	22	3	10	<0.1	1	4	<0.2	<0.5	<1	<2	<1	<1	<25	<50	<100	<100	<50
BH17	QC203	14/11/2024	1.6 - 1.7	Natural	Interlab_D	ES2437730	7	<1	24	<5	10	<0.1	<2	<5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<50
BH18	BH18_0.25-0.3	12/11/2024	0.25 - 0.3	Fill	Normal	366197	<4	<0.4	18	3	8	<0.1	6	8	<0.2	<0.5	<1	<2	<1	<1	<25	<50	<100	<100	<50
BH18	QC100	12/11/2024	0.25 - 0.3	Fill	Field_D	366197	<4	<0.4	31	22	29	0.1	3	39	<0.2	<0.5	<1	<2	<1	<1	<25	<50	110	130	240
BH18	BH18_1.0-1.1	12/11/2024	1 - 1.1	Natural	Normal	366197	<4	<0.4	2	<1	6	<0.1	<1	<1	<0.2	<0.5	<1	<2	<1	<1	<25	<50	<100	<100	<50
BH18	BH18_5.9-6.0	13/11/2024	5.9 - 6	Natural	Normal	366346	<4	<0.4	7	4	7	<0.1	4	17	<0.2	<0.5	<1	<2	<1	<1	<25	<50	<100	<100	<50
BH19	BH19_0.22-0.25	14/11/2024	0.22 - 0.25	Fill	Normal	366472	<4	<0.4	3	<1	5	<0.1	<1	<1	<0.2	<0.5	<1	<2	<1	<1	<25	<50	<100	<100	<50
BH20	BH20_0.2-0.35	14/11/2024	0.2 - 0.35	Fill	Normal	366472	4	<0.4	22	4	9	<0.1	9	11	<0.2	<0.5	<1	<2	<1	<1	<25	<50	<100	<100	<50
BH20	BH20_0.35-0.45	14/11/2024	0.35 - 0.45	Natural	Normal	366472	<4	<0.4	5	<1	3	<0.1	1	<1	<0.2	<0.5	<1	<2	<1	<1	<25	<50	<100	<100	<50
BH21	BH21_0.2-0.5	12/11/2024	0.2 - 0.5	Fill	Normal	366197	5	<0.4	14	7	12	<0.1	3	10	<0.2	<0.5	<1	<2	<1	<1	<25	<50	<100	<100	<50
BH21	BH21_0.7-0.8	12/11/2024	0.7 - 0.8	Fill	Normal	366197	18	<0.4	14	15	40	<0.1	3	78	<0.2	<0.5	<1	<2	<1	<1	<25	<50	<100	<100	<50
BH21	BH21_1.1-1.2	12/11/2024	1.1 - 1.2	Natural	Normal	366197	<4	<0.4	18	4	6	<0.1	2	8	<0.2	<0.5	<1	<2	<1	<1	<25	<50	<100	<100	<50
BH21	BH21_7.9-8.0	12/11/2024	7.9 - 8	Natural	Normal	366197	<4	<0.4	11	12	6	<0.1	1	10	<0.2	<0.5	<1	<2	<1	<1	<25	<50	<100	<100	<50
BH22	BH22_0.1-0.2	14/11/2024	0.1 - 0.2	Fill	Normal	366472	7	<0.4	10	25	630	<0.1	6	57	<0.2	<0.5	<1	<2	<1	<1	<25	<50	110	120	230
BH22	BH22_0.4-0.5	14/11/2024	0.4 - 0.5	Fill	Normal	366472	6	<0.4	13	15	57	<0.1	4	32	<0.2	<0.5	<1	<2	<1	<1	<25	<50	<100	<100	<50
BH23	BH23_0.2-0.3	14/11/2024	0.2 - 0.3	Natural	Normal	366472	<4	<0.4	3	1	57	<0.1	10	7	<0.2	<0.5	<1	<2	<1	<1	<25	<50	<100	<100	<50
BH25	BH25_0.0-0.2	15/11/2024	0 - 0.2	Fill	Normal	366546	<4	<0.4	25	65	75	<0.1	15	150	<0.2	<0.5	<1	<2	<1	<1	<25	<50	<100	<100	<50
BH26	BH26_0.1-0.35	15/11/2024	0.1 - 0.35	Fill	Normal	366635	<4	<0.4	7	11	180	<0.1	1	97	<0.2	<0.5	<1	<2	<1	<1	<25	<50	<100	<100	<50
BH27	BH27_0.2-0.3	15/11/2024	0.2 - 0.3	Fill	Normal	366635	4	<0.4	11	16	390	0.1	4	150	<0.2	<0.5	<1	<2	<1	<1	<25	<50	680	470	1,100
BH28	BH28_0-0.2	11/11/2024	0 - 0.2	Fill	Normal	366091	<4	<0.4	12	5	12	<0.1	5	16	<0.2	<0.5	<1	<2	<1	<1	<25	<50	<100	<100	<50
BH28	BH28_0.9-1.0	11/11/2024	0.9 - 1	Fill	Normal	366091	6	<0.4	5	19	13	<0.1	1	6	<0.2	<0.5	<1	<2	<1	<1	<25	<50	<100	<100	<50
BH29	BH29_0-0.1	11/11/2024	0 - 0.1	Fill	Normal	366091	4	<0.4	15	10	69	0.1	6	40	<0.2	<0.5	<1	<2	<1	<1	<25	<50	<100	<100	<50
BH30	BH30_0.0-0.1	12/11/2024	0 - 0.1	Fill	Normal	366197	<4	0.9	8	13	24	<0.1	2	170	<0.2	<0.5	<1	<2	<1	<1	<25	<50	<100	380	380

Comments
#1 As chromium (VI)

Table 2: Soil Analytical Results (Waste)
12 Mars Road Lane Cove West
Goodman Property Services (Aust) Pty Ltd
S22013

						PAH		MAH	Halogenated Benzenes			Chlorinated Hydrocarbons											Polychlorinated Biphenyls	Asbestos	PFAS			
						Benzo(a)pyrene	Sum of Polycyclic aromatic hydrocarbons (PAH)	Styrene	1,2-Dichlorobenzene	1,4-Dichlorobenzene	Chlorobenzene	1,1-Dichloroethene	1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1,2,2-Tetrachloroethane	1,2-Dichloroethane	Carbon Tetrachloride	Chloroform	Tetrachloroethene	Trichloroethene	Vinyl Chloride	PCBs (Sum of total)	Asbestos	Perfluorooctanoic acid (PFOA)	Perfluorooctanoic acid (PFOA)	Sum of PFHxS and PFOS	Sum of PFHxS and PFOS
						mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	-	mg/kg	µg/L	mg/kg	µg/L
						0.05	0.5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.1		0.0001	0.01	0.0001	0.01
NSW EPA 2014 - General Solid Waste						0.8	200	60	86	150	2,000	14	200	600	24	26	10	10	120	14	10	4	50					
NSW EPA 2014 - General Solid Waste S						**10**	**200**	**108**	**155**	**270**	**3,600**	**25**	**360**	**1,080**	**43.2**	**46.8**	**18**	**18**	**216**	**25.2**	**18**	**7.2**	**50**		**18**		**1.8**	
NSW EPA 2014 - General Solid Was																										500		50
NSW EPA 2014 - Restricted Solid Waste						3.2	800	240	344	600	8,000	56	800	2,400	96	104	40	40	480	56	40	16	50					
NSW EPA 2014 - Restricted Solid Waste S						*23*	*800*	*432*	*620*	*1,080*	*14,400*	*100*	*1,440*	*4,320*	*172.8*	*187.2*	*72*	*72*	*864*	*100.8*	*72*	*28.8*	*50*		*72*		*7.2*	
NSW EPA 2014 - Restricted Solid Was																										2,000		200
Location	**Field ID**	**Date**	**Depth**	**Lithology**	**Sample Type**																							
BH01	BH01_0.4-0.5	14/11/2024	0.4 - 0.5	Fill	Normal	0.06	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	Absent	-	-	-	-
BH01	QC104	14/11/2024	0.4 - 0.5	Fill	Field_D	0.08	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH02	BH02_0.2-0.3	13/11/2024	0.2 - 0.3	Fill	Normal	<0.05	<0.05	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1	Absent	0.0002	<0.01	0.0019	0.03
BH02	QC201	13/11/2024	0.2 - 0.3	Fill	Interlab_D	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0002	-	0.0021	-
BH02	BH02_7.9-8.0	13/11/2024	7.9 - 8	Natural	Normal	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH03	BH03_0.5-0.7	14/11/2024	0.5 - 0.7	Natural	Normal	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-
BH03	BH03_0.5-0.7 - [TRIPLICATE]	14/11/2024	0.5 - 0.7	Natural	Field_D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH04	BH04_0.24-0.3	15/11/2024	0.24 - 0.3	Fill	Normal	0.55	6.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	Absent	-	-	-	-	-
BH04	BH04_0.24-0.3 - [TRIPLICATE]	15/11/2024	0.24 - 0.3	Fill	Field_D	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH05	BH05_0.2-0.25	15/11/2024	0.2 - 0.25	Fill	Normal	0.2	2.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	Present	-	-	-	-	-
BH06	BH06_0.2-0.23	15/11/2024	0.2 - 0.23	Fill	Normal	0.1	1.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-
BH07	BH07_0.21-0.25	15/11/2024	0.21 - 0.25	Fill	Normal	0.1	1.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-
BH08	BH08_0.13-0.16	15/11/2024	0.13 - 0.16	Fill	Normal	0.2	1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-
BH09	BH09_0.18-0.26	15/11/2024	0.18 - 0.26	Fill	Normal	0.2	1.9	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1	Absent	<0.0001	-	0.0004	-
BH09	QC205	15/11/2024	0.18 - 0.26	Fill	Interlab_D	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH10	BH10_0.4-0.5	15/11/2024	0.4 - 0.5	Fill	Normal	0.1	1.3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1	Absent	<0.0001	-	<0.0001	-
BH10A	BH10A_0.2-0.3	15/11/2024	0.2 - 0.3	Fill	Normal	0.3	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	Present	-	-	-	-	-
BH11	BH11_0.9-1.0	15/11/2024	0.9 - 1	Fill	Normal	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	Absent	-	-	-	-	-
BH12	BH12_0.2-0.3	14/11/2024	0.2 - 0.3	Natural	Normal	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	Absent	-	-	-	-	-
BH13	BH13_0-0.1	12/11/2024	0 - 0.1	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Absent	-	-	-	-	-
BH13	BH13_0.4-0.5	12/11/2024	0.4 - 0.5	Fill	Normal	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	Absent	-	-	-	-	-
BH14	BH14_0.16-0.2	11/11/2024	0.16 - 0.2	Fill	Normal	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	Absent	0.0001	<0.01	0.0002	<0.01
BH14	BH14_4.0-4.2	11/11/2024	4 - 4.2	Natural	Normal	<0.05	<0.05	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-
BH14	BH14_7.8-8.0	11/11/2024	7.8 - 8	Natural	Normal	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH15	BH15_0.2-0.3	14/11/2024	0.2 - 0.3	Fill	Normal	0.1	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	Present	-	-	-	-	-
BH15	BH15_0.9-1.0	14/11/2024	0.9 - 1	Fill	Normal	0.06	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	Absent	-	-	-	-	-
BH16	BH16_1.0-2.1	11/11/2024	1 - 1.1	Fill	Normal	<0.05	<0.05	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1	Absent	<0.0001	<0.01	<0.0001	<0.01
BH16	BH16_4.0-4.1	11/11/2024	4 - 4.1	Natural	Normal	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH16	BH16_7.9-8.0	12/11/2024	7.9 - 8	Natural	Normal	<0.05	<0.05	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-
BH17	BH17_0.7-0.8	14/11/2024	0.7 - 0.8	Fill	Normal	<0.05	<0.05	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1	Absent	-	-	-	-	-
BH17	QC103	14/11/2024	0.7 - 0.8	Fill	Field_D	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH17	BH17_1.1-1.2	14/11/2024	1.1 - 1.2	Natural	Normal	0.08	0.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH17	BH17_1.6-1.7	14/11/2024	1.6 - 1.7	Natural	Normal	<0.05	<0.05	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-
BH17	QC203	14/11/2024	1.6 - 1.7	Natural	Interlab_D	<0.5	<0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH18	BH18_0.25-0.3	12/11/2024	0.25 - 0.3	Fill	Normal	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	Absent	<0.0001	<0.01	<0.0001	<0.01
BH18	QC100	12/11/2024	0.25 - 0.3	Fill	Field_D	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0001	-	<0.0001	-
BH18	BH18_1.0-1.1	12/11/2024	1 - 1.1	Natural	Normal	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH18	BH18_5.9-6.0	13/11/2024	5.9 - 6	Natural	Normal	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH19	BH19_0.22-0.25	14/11/2024	0.22 - 0.25	Fill	Normal	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	-	-	-
BH20	BH20_0.2-0.35	14/11/2024	0.2 - 0.35	Fill	Normal	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	Absent	-	-	-	-	-
BH20	BH20_0.35-0.45	14/11/2024	0.35 - 0.45	Natural	Normal	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH21	BH21_0.2-0.5	12/11/2024	0.2 - 0.5	Fill	Normal	<0.05	<0.05	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1	Absent	<0.0001	<0.01	0.0001	<0.01
BH21	BH21_0.7-0.8	12/11/2024	0.7 - 0.8	Fill	Normal	0.53	6.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	Absent	-	-	-	-	-
BH21	BH21_1.1-1.2	12/11/2024	1.1 - 1.2	Natural	Normal	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH21	BH21_7.9-8.0	12/11/2024	7.9 - 8	Natural	Normal	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH22	BH22_0.1-0.2	14/11/2024	0.1 - 0.2	Fill	Normal	0.2	2.0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	Absent	<0.0001	-	0.0005	-
BH22	BH22_0.4-0.5	14/11/2024	0.4 - 0.5	Fill	Normal	0.2	2.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	Absent	-	-	-	-	-
BH23	BH23_0.2-0.3	14/11/2024	0.2 - 0.3	Natural	Normal	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	Absent	-	-	-	-	-
BH25	BH25_0.0-0.2	15/11/2024	0 - 0.2	Fill	Normal	0.1	0.90	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	Absent	0.001	-	0.0011	-
BH26	BH26_0.1-0.35	15/11/2024	0.1 - 0.35	Fill	Normal	0.81	8.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH27	BH27_0.2-0.3	15/11/2024	0.2 - 0.3	Fill	Normal	6.5	70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH28	BH28_0-0.2	11/11/2024	0 - 0.2	Fill	Normal	<0.05	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	Absent	-	-	-	-	-
BH28	BH28_0.9-1.0	11/11/2024	0.9 - 1	Fill	Normal	<0.05	<0.05	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1	Absent	-	-	-	-	-
BH29	BH29_0-0.1	11/11/2024	0 - 0.1	Fill	Normal	<0.05	0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	Absent	-	-	-	-	-
BH30	BH30_0.0-0.1	12/11/2024	0 - 0.1	Fill	Normal	0.2	1.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	Absent	0.0002	-	0.0007	-

Comments
#1 As chromium (VI)

Table 2a: Soil Analytical Results (Waste ULCs)
12 Mars Road Lane Cove West
Goodman Property Services (Aust) Pty Ltd
S22013

senversa

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.118/12/2024 3:15:49 PM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lead (Fill)

General Statistics

Total Number of Observations	31	Number of Distinct Observations	24
		Number of Missing Observations	0
Minimum	5	Mean	60.74
Maximum	630	Median	20
SD	128.2	Std. Error of Mean	23.02
Coefficient of Variation	2.11	Skewness	3.721

Normal GOF Test

Shapiro Wilk Test Statistic	0.438	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.929	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.362	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.156	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	99.81	95% Adjusted-CLT UCL (Chen-1995)	115
		95% Modified-t UCL (Johnson-1978)	102.4

Gamma GOF Test

A-D Test Statistic	3.403	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.792	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.252	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.164	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.703	k star (bias corrected MLE)	0.656
Theta hat (MLE)	86.42	Theta star (bias corrected MLE)	92.55
nu hat (MLE)	43.58	nu star (bias corrected)	40.69
MLE Mean (bias corrected)	60.74	MLE Sd (bias corrected)	74.98
		Approximate Chi Square Value (0.05)	27.07
Adjusted Level of Significance	0.0413	Adjusted Chi Square Value	26.46

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	91.29	95% Adjusted Gamma UCL (use when n<50)	93.43

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.868	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.929	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.156	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.156	Data appear Lognormal at 5% Significance Level

Data appear Approximate Lognormal at 5% Significance Level

Table 2a: Soil Analytical Results (Waste ULCs)
12 Mars Road Lane Cove West
Goodman Property Services (Aust) Pty Ltd
S22013

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UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.118/12/2024 3:15:49 PM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal Statistics

Minimum of Logged Data	1.609	Mean of logged Data	3.247
Maximum of Logged Data	6.446	SD of logged Data	1.092

Assuming Lognormal Distribution

95% H-UCL	77.42	90% Chebyshev (MVUE) UCL	76.69
95% Chebyshev (MVUE) UCL	90.88	97.5% Chebyshev (MVUE) UCL	110.6
99% Chebyshev (MVUE) UCL	149.3		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	98.6	95% Jackknife UCL	99.81
95% Standard Bootstrap UCL	98.25	95% Bootstrap-t UCL	203.4
95% Hall's Bootstrap UCL	230.6	95% Percentile Bootstrap UCL	103.3
95% BCA Bootstrap UCL	124.9		
90% Chebyshev(Mean, Sd) UCL	129.8	95% Chebyshev(Mean, Sd) UCL	161.1
97.5% Chebyshev(Mean, Sd) UCL	204.5	99% Chebyshev(Mean, Sd) UCL	289.8

Suggested UCL to Use

95% H-UCL	77.42

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

ProUCL computes and outputs H-statistic based UCLs for historical reasons only.
H-statistic often results in unstable (both high and low) values of UCL95 as shown in examples in the Technical Guide.
It is therefore recommended to avoid the use of H-statistic based 95% UCLs.
Use of nonparametric methods are preferred to compute UCL95 for skewed data sets which do not follow a gamma distribution.

Lead (Natural)

General Statistics

Total Number of Observations	15	Number of Distinct Observations	12
		Number of Missing Observations	0
Minimum	2	Mean	26.33
Maximum	250	Median	6
SD	63.3	Std. Error of Mean	16.34
Coefficient of Variation	2.404	Skewness	3.61

Normal GOF Test

Shapiro Wilk Test Statistic	0.405	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.881	Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.45	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.22	Data Not Normal at 5% Significance Level	

Data Not Normal at 5% Significance Level

Table 2a: Soil Analytical Results (Waste ULCs)
12 Mars Road Lane Cove West
Goodman Property Services (Aust) Pty Ltd
S22013

senversa

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.118/12/2024 3:15:49 PM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Assuming Normal Distribution

95% Normal UCL		95% UCLs (Adjusted for Skewness)	
95% Student's-t UCL	55.12	95% Adjusted-CLT UCL (Chen-1995)	69.5
		95% Modified-t UCL (Johnson-1978)	57.66

Gamma GOF Test

A-D Test Statistic	2.162	**Anderson-Darling Gamma GOF Test**	
5% A-D Critical Value	0.788	Data Not Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.371	**Kolmogorov-Smirnov Gamma GOF Test**	
5% K-S Critical Value	0.233	Data Not Gamma Distributed at 5% Significance Level	

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.565	k star (bias corrected MLE)	0.497
Theta hat (MLE)	46.58	Theta star (bias corrected MLE)	53.02
nu hat (MLE)	16.96	nu star (bias corrected)	14.9
MLE Mean (bias corrected)	26.33	MLE Sd (bias corrected)	37.36
		Approximate Chi Square Value (0.05)	7.193
Adjusted Level of Significance	0.0324	Adjusted Chi Square Value	6.543

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	54.55	95% Adjusted Gamma UCL (use when n<50)	59.97

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.838	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.881	Data Not Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.239	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.22	Data Not Lognormal at 5% Significance Level	

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	0.693	Mean of logged Data	2.168
Maximum of Logged Data	5.521	SD of logged Data	1.223

Assuming Lognormal Distribution

95% H-UCL	51.17	90% Chebyshev (MVUE) UCL	35.21
95% Chebyshev (MVUE) UCL	43.41	97.5% Chebyshev (MVUE) UCL	54.8
99% Chebyshev (MVUE) UCL	77.17		

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

95% CLT UCL	53.22	95% Jackknife UCL	55.12
95% Standard Bootstrap UCL	51.57	95% Bootstrap-t UCL	390.5
95% Hall's Bootstrap UCL	194.3	95% Percentile Bootstrap UCL	55.93
95% BCA Bootstrap UCL	78.87		
90% Chebyshev(Mean, Sd) UCL	75.37	95% Chebyshev(Mean, Sd) UCL	97.58
97.5% Chebyshev(Mean, Sd) UCL	128.4	99% Chebyshev(Mean, Sd) UCL	189

Table 2a: Soil Analytical Results (Waste ULCs)
12 Mars Road Lane Cove West
Goodman Property Services (Aust) Pty Ltd
S22013

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.118/12/2024 3:15:49 PM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL 97.58

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Nickel

General Statistics

Total Number of Observations	31	Number of Distinct Observations	17
Number of Detects	30	Number of Non-Detects	1
Number of Distinct Detects	17	Number of Distinct Non-Detects	1
Minimum Detect	1	Minimum Non-Detect	1
Maximum Detect	83	Maximum Non-Detect	1
Variance Detects	222.3	Percent Non-Detects	3.226%
Mean Detects	10.8	SD Detects	14.91
Median Detects	6	CV Detects	1.381
Skewness Detects	4.157	Kurtosis Detects	20.06
Mean of Logged Detects	1.896	SD of Logged Detects	0.969

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.541	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.927	Detected Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.255	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.159	Detected Data Not Normal at 5% Significance Level

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	10.48	KM Standard Error of Mean	2.653
KM SD	14.52	95% KM (BCA) UCL	15.77
95% KM (t) UCL	14.99	95% KM (Percentile Bootstrap) UCL	15.48
95% KM (z) UCL	14.85	95% KM Bootstrap t UCL	20.52
90% KM Chebyshev UCL	18.44	95% KM Chebyshev UCL	22.05
97.5% KM Chebyshev UCL	27.05	99% KM Chebyshev UCL	36.88

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.654	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.771	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.135	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.164	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.173	k star (bias corrected MLE)	1.078
Theta hat (MLE)	9.21	Theta star (bias corrected MLE)	10.02
nu hat (MLE)	70.36	nu star (bias corrected)	64.66
Mean (detects)	10.8		

Table 2a: Soil Analytical Results (Waste ULCs)
12 Mars Road Lane Cove West
Goodman Property Services (Aust) Pty Ltd
S22013

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.118/12/2024 3:15:49 PM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	10.45
Maximum	83	Median	6
SD	14.79	CV	1.415
k hat (MLE)	0.887	k star (bias corrected MLE)	0.822
Theta hat (MLE)	11.79	Theta star (bias corrected MLE)	12.71
nu hat (MLE)	54.98	nu star (bias corrected)	50.99
Adjusted Level of Significance (β)	0.0413		
Approximate Chi Square Value (50.99, α)	35.59	Adjusted Chi Square Value (50.99, β)	34.88
95% Gamma Approximate UCL (use when n>=50)	14.97	95% Gamma Adjusted UCL (use when n<50)	15.28

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	10.48	SD (KM)	14.52
Variance (KM)	211	SE of Mean (KM)	2.653
k hat (KM)	0.521	k star (KM)	0.492
nu hat (KM)	32.3	nu star (KM)	30.51
theta hat (KM)	20.12	theta star (KM)	21.3
80% gamma percentile (KM)	17.21	90% gamma percentile (KM)	28.46
95% gamma percentile (KM)	40.5	99% gamma percentile (KM)	70.17

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (30.51, α)	18.89	Adjusted Chi Square Value (30.51, β)	18.39
95% Gamma Approximate KM-UCL (use when n>=50)	16.93	95% Gamma Adjusted KM-UCL (use when n<50)	17.4

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.975	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.927	Detected Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.0847	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.159	Detected Data appear Lognormal at 5% Significance Level

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	10.47	Mean in Log Scale	1.818
SD in Original Scale	14.77	SD in Log Scale	1.048
95% t UCL (assumes normality of ROS data)	14.97	95% Percentile Bootstrap UCL	15.28
95% BCA Bootstrap UCL	17.68	95% Bootstrap t UCL	20.42
95% H-UCL (Log ROS)	17.14		

Table 2a: Soil Analytical Results (Waste ULCs)
12 Mars Road Lane Cove West
Goodman Property Services (Aust) Pty Ltd
S22013

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UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.118/12/2024 3:15:49 PM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	1.835	KM Geo Mean	6.264
KM SD (logged)	0.996	95% Critical H Value (KM-Log)	2.418
KM Standard Error of Mean (logged)	0.182	95% H-UCL (KM -Log)	15.96
KM SD (logged)	0.996	95% Critical H Value (KM-Log)	2.418
KM Standard Error of Mean (logged)	0.182		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	10.47	Mean in Log Scale	1.813
SD in Original Scale	14.78	SD in Log Scale	1.06
95% t UCL (Assumes normality)	14.97	95% H-Stat UCL	17.42

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM Adjusted Gamma UCL	17.4	95% GROS Adjusted Gamma UCL	15.28

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

B(a)P

General Statistics

Total Number of Observations	31	Number of Distinct Observations	11
Number of Detects	18	Number of Non-Detects	13
Number of Distinct Detects	9	Number of Distinct Non-Detects	2
Minimum Detect	0.06	Minimum Non-Detect	0.05
Maximum Detect	6.5	Maximum Non-Detect	0.5
Variance Detects	2.219	Percent Non-Detects	41.94%
Mean Detects	0.585	SD Detects	1.49
Median Detects	0.2	CV Detects	2.546
Skewness Detects	4.12	Kurtosis Detects	17.24
Mean of Logged Detects	-1.516	SD of Logged Detects	1.105

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.351	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.897	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.398	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.202	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	0.362	KM Standard Error of Mean	0.21
KM SD	1.134	95% KM (BCA) UCL	0.794
95% KM (t) UCL	0.718	95% KM (Percentile Bootstrap) UCL	0.752
95% KM (z) UCL	0.707	95% KM Bootstrap t UCL	2.484
90% KM Chebyshev UCL	0.991	95% KM Chebyshev UCL	1.276
97.5% KM Chebyshev UCL	1.671	99% KM Chebyshev UCL	2.448

Table 2a: Soil Analytical Results (Waste ULCs)
12 Mars Road Lane Cove West
Goodman Property Services (Aust) Pty Ltd
S22013

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.118/12/2024 3:15:49 PM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	2.54	**Anderson-Darling GOF Test**
5% A-D Critical Value	0.789	Detected Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.33	**Kolmogorov-Smirnov GOF**
5% K-S Critical Value	0.213	Detected Data Not Gamma Distributed at 5% Significance Level

Detected Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	0.627	k star (bias corrected MLE)	0.559
Theta hat (MLE)	0.933	Theta star (bias corrected MLE)	1.046
nu hat (MLE)	22.56	nu star (bias corrected)	20.13
Mean (detects)	0.585		

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	0.01	Mean	0.344
Maximum	6.5	Median	0.1
SD	1.158	CV	3.367
k hat (MLE)	0.38	k star (bias corrected MLE)	0.365
Theta hat (MLE)	0.904	Theta star (bias corrected MLE)	0.942
nu hat (MLE)	23.59	nu star (bias corrected)	22.64
Adjusted Level of Significance (β)	0.0413		
Approximate Chi Square Value (22.64, α)	12.82	Adjusted Chi Square Value (22.64, β)	12.41
95% Gamma Approximate UCL (use when n>=50)	0.607	95% Gamma Adjusted UCL (use when n<50)	0.627

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	0.362	SD (KM)	1.134
Variance (KM)	1.286	SE of Mean (KM)	0.21
k hat (KM)	0.102	k star (KM)	0.114
nu hat (KM)	6.335	nu star (KM)	7.055
theta hat (KM)	3.547	theta star (KM)	3.185
80% gamma percentile (KM)	0.299	90% gamma percentile (KM)	1.011
95% gamma percentile (KM)	2.081	99% gamma percentile (KM)	5.392

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (7.06, α)	2.201	Adjusted Chi Square Value (7.06, β)	2.053
95% Gamma Approximate KM-UCL (use when n>=50)	1.162	95% Gamma Adjusted KM-UCL (use when n<50)	1.245

Table 2a: Soil Analytical Results (Waste ULCs)
12 Mars Road Lane Cove West
Goodman Property Services (Aust) Pty Ltd
S22013

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.118/12/2024 3:15:49 PM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.823	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.897	Detected Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.256	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.202	Detected Data Not Lognormal at 5% Significance Level

Detected Data Not Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	0.349	Mean in Log Scale	-2.576
SD in Original Scale	1.156	SD in Log Scale	1.608
95% t UCL (assumes normality of ROS data)	0.702	95% Percentile Bootstrap UCL	0.754
95% BCA Bootstrap UCL	1.064	95% Bootstrap t UCL	2.47
95% H-UCL (Log ROS)	0.715		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-2.119	KM Geo Mean	0.12
KM SD (logged)	1.092	95% Critical H Value (KM-Log)	2.534
KM Standard Error of Mean (logged)	0.203	95% H-UCL (KM -Log)	0.362
KM SD (logged)	1.092	95% Critical H Value (KM-Log)	2.534
KM Standard Error of Mean (logged)	0.203		

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	0.357	Mean in Log Scale	-2.353
SD in Original Scale	1.155	SD in Log Scale	1.363
95% t UCL (Assumes normality)	0.709	95% H-Stat UCL	0.494

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Data do not follow a Discernible Distribution at 5% Significance Level

Suggested UCL to Use

95% KM (Chebyshev) UCL	1.276

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Table 2a: Soil Analytical Results (Waste ULCs)
12 Mars Road Lane Cove West
Goodman Property Services (Aust) Pty Ltd
S22013

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.118/12/2024 3:15:49 PM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

PFOA

General Statistics

Total Number of Observations	10	Number of Distinct Observations	3
Number of Detects	4	Number of Non-Detects	6
Number of Distinct Detects	3	Number of Distinct Non-Detects	1
Minimum Detect	1.0000E-4	Minimum Non-Detect	1.0000E-4
Maximum Detect	0.001	Maximum Non-Detect	1.0000E-4
Variance Detects	1.7583E-7	Percent Non-Detects	60%
Mean Detects	3.7500E-4	SD Detects	4.1932E-4
Median Detects	2.0000E-4	CV Detects	1.118
Skewness Detects	1.923	Kurtosis Detects	3.77
Mean of Logged Detects	-8.288	SD of Logged Detects	0.977

Normal GOF Test on Detects Only

Shapiro Wilk Test Statistic	0.725	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.748	Detected Data Not Normal at 5% Significance Level	
Lilliefors Test Statistic	0.412	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.375	Detected Data Not Normal at 5% Significance Level	

Detected Data Not Normal at 5% Significance Level

Kaplan-Meier (KM) Statistics using Normal Critical Values and other Nonparametric UCLs

KM Mean	2.1000E-4	KM Standard Error of Mean	9.7228E-5
KM SD	2.6627E-4	95% KM (BCA) UCL	N/A
95% KM (t) UCL	3.8823E-4	95% KM (Percentile Bootstrap) UCL	N/A
95% KM (z) UCL	3.6993E-4	95% KM Bootstrap t UCL	N/A
90% KM Chebyshev UCL	5.0168E-4	95% KM Chebyshev UCL	6.3381E-4
97.5% KM Chebyshev UCL	8.1719E-4	99% KM Chebyshev UCL	0.00118

Gamma GOF Tests on Detected Observations Only

A-D Test Statistic	0.555	**Anderson-Darling GOF Test**	
5% A-D Critical Value	0.663	Detected data appear Gamma Distributed at 5% Significance Level	
K-S Test Statistic	0.396	**Kolmogorov-Smirnov GOF**	
5% K-S Critical Value	0.4	Detected data appear Gamma Distributed at 5% Significance Level	

Detected data appear Gamma Distributed at 5% Significance Level

Gamma Statistics on Detected Data Only

k hat (MLE)	1.395	k star (bias corrected MLE)	0.515
Theta hat (MLE)	2.6889E-4	Theta star (bias corrected MLE)	7.2770E-4
nu hat (MLE)	11.16	nu star (bias corrected)	4.123
Mean (detects)	3.7500E-4		

Table 2a: Soil Analytical Results (Waste ULCs)
12 Mars Road Lane Cove West
Goodman Property Services (Aust) Pty Ltd
S22013

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.118/12/2024 3:15:49 PM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma ROS Statistics using Imputed Non-Detects

GROS may not be used when data set has > 50% NDs with many tied observations at multiple DLs

GROS may not be used when kstar of detects is small such as <1.0, especially when the sample size is small (e.g., <15-20)

For such situations, GROS method may yield incorrect values of UCLs and BTVs

This is especially true when the sample size is small.

For gamma distributed detected data, BTVs and UCLs may be computed using gamma distribution on KM estimates

Minimum	1.0000E-4	Mean	0.00615
Maximum	0.01	Median	0.01
SD	0.00498	CV	0.809
k hat (MLE)	0.623	k star (bias corrected MLE)	0.502
Theta hat (MLE)	0.00988	Theta star (bias corrected MLE)	0.0122
nu hat (MLE)	12.45	nu star (bias corrected)	10.05
Adjusted Level of Significance (β)	0.0267		
Approximate Chi Square Value (10.05, α)	3.973	Adjusted Chi Square Value (10.05, β)	3.336
95% Gamma Approximate UCL (use when n>=50)	0.0156	95% Gamma Adjusted UCL (use when n<50)	N/A

Estimates of Gamma Parameters using KM Estimates

Mean (KM)	2.1000E-4	SD (KM)	2.6627E-4
Variance (KM)	7.0900E-8	SE of Mean (KM)	9.7228E-5
k hat (KM)	0.622	k star (KM)	0.502
nu hat (KM)	12.44	nu star (KM)	10.04
theta hat (KM)	3.3762E-4	theta star (KM)	4.1827E-4
80% gamma percentile (KM)	3.4496E-4	90% gamma percentile (KM)	5.6768E-4
95% gamma percentile (KM)	8.0552E-4	99% gamma percentile (KM)	0.00139

Gamma Kaplan-Meier (KM) Statistics

Approximate Chi Square Value (10.04, α)	3.968	Adjusted Chi Square Value (10.04, β)	3.331
95% Gamma Approximate KM-UCL (use when n>=50)	5.3147E-4	95% Gamma Adjusted KM-UCL (use when n<50)	6.3304E-4

Lognormal GOF Test on Detected Observations Only

Shapiro Wilk Test Statistic	0.875	**Shapiro Wilk GOF Test**	
5% Shapiro Wilk Critical Value	0.748	Detected Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.343	**Lilliefors GOF Test**	
5% Lilliefors Critical Value	0.375	Detected Data appear Lognormal at 5% Significance Level	

Detected Data appear Lognormal at 5% Significance Level

Lognormal ROS Statistics Using Imputed Non-Detects

Mean in Original Scale	1.5820E-4	Mean in Log Scale	-10.32
SD in Original Scale	3.0581E-4	SD in Log Scale	2.039
95% t UCL (assumes normality of ROS data)	3.3547E-4	95% Percentile Bootstrap UCL	3.2999E-4
95% BCA Bootstrap UCL	4.1478E-4	95% Bootstrap t UCL	7.3443E-4
95% H-UCL (Log ROS)	0.011		

Statistics using KM estimates on Logged Data and Assuming Lognormal Distribution

KM Mean (logged)	-8.841	KM Geo Mean	1.4461E-4
KM SD (logged)	0.7	95% Critical H Value (KM-Log)	2.532
KM Standard Error of Mean (logged)	0.256	95% H-UCL (KM -Log)	3.3367E-4
KM SD (logged)	0.7	95% Critical H Value (KM-Log)	2.532
KM Standard Error of Mean (logged)	0.256		

Table 2a: Soil Analytical Results (Waste ULCs)
12 Mars Road Lane Cove West
Goodman Property Services (Aust) Pty Ltd
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UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.118/12/2024 3:15:49 PM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

DL/2 Statistics

DL/2 Normal		**DL/2 Log-Transformed**	
Mean in Original Scale	1.8000E-4	Mean in Log Scale	-9.257
SD in Original Scale	2.9458E-4	SD in Log Scale	1.007
95% t UCL (Assumes normality)	3.5076E-4	95% H-Stat UCL	4.5085E-4

DL/2 is not a recommended method, provided for comparisons and historical reasons

Nonparametric Distribution Free UCL Statistics

Detected Data appear Gamma Distributed at 5% Significance Level

Suggested UCL to Use

95% KM Bootstrap t UCL	N/A	djusted KM-UCL (use when k<=1 and 15 < n < 50 but k<=1)	6.3304E-4

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
Recommendations are based upon data size, data distribution, and skewness.
These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).
However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Sum of PFHxS and PFOS

General Statistics

Total Number of Observations	7	Number of Distinct Observations	7
		Number of Missing Observations	3
Minimum	1.0000E-4	Mean	7.2857E-4
Maximum	0.0021	Median	5.0000E-4
SD	6.8972E-4	Std. Error of Mean	2.6069E-4
Coefficient of Variation	0.947	Skewness	1.555

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.
For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).
Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.1

Normal GOF Test

Shapiro Wilk Test Statistic	0.854	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.803	Data appear Normal at 5% Significance Level
Lilliefors Test Statistic	0.231	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.304	Data appear Normal at 5% Significance Level

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	0.00124	95% Adjusted-CLT UCL (Chen-1995)	0.00132
		95% Modified-t UCL (Johnson-1978)	0.00126

Gamma GOF Test

A-D Test Statistic	0.156	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.723	Detected data appear Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.12	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.318	Detected data appear Gamma Distributed at 5% Significance Level

Detected data appear Gamma Distributed at 5% Significance Level

Table 2a: Soil Analytical Results (Waste ULCs)
12 Mars Road Lane Cove West
Goodman Property Services (Aust) Pty Ltd
S22013

UCL Statistics for Data Sets with Non-Detects

User Selected Options	
Date/Time of Computation	ProUCL 5.118/12/2024 3:15:49 PM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Gamma Statistics

k hat (MLE)	1.382	k star (bias corrected MLE)	0.885
Theta hat (MLE)	5.2709E-4	Theta star (bias corrected MLE)	8.2316E-4
nu hat (MLE)	19.35	nu star (bias corrected)	12.39
MLE Mean (bias corrected)	7.2857E-4	MLE Sd (bias corrected)	7.7442E-4
		Approximate Chi Square Value (0.05)	5.486
Adjusted Level of Significance	0.0158	Adjusted Chi Square Value	4.182

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	0.00165	95% Adjusted Gamma UCL (use when n<50)	0.00216

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.991	**Shapiro Wilk Lognormal GOF Test**	
5% Shapiro Wilk Critical Value	0.803	Data appear Lognormal at 5% Significance Level	
Lilliefors Test Statistic	0.138	**Lilliefors Lognormal GOF Test**	
5% Lilliefors Critical Value	0.304	Data appear Lognormal at 5% Significance Level	

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	-9.21	Mean of logged Data	-7.628
Maximum of Logged Data	-6.166	SD of logged Data	1.022

Assuming Lognormal Distribution

95% H-UCL	0.00394	90% Chebyshev (MVUE) UCL	0.00161
95% Chebyshev (MVUE) UCL	0.002	97.5% Chebyshev (MVUE) UCL	0.00255
99% Chebyshev (MVUE) UCL	0.00362		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	0.00116	95% Jackknife UCL	0.00124
95% Standard Bootstrap UCL	0.00113	95% Bootstrap-t UCL	0.00174
95% Hall's Bootstrap UCL	0.00341	95% Percentile Bootstrap UCL	0.00117
95% BCA Bootstrap UCL	0.00126		
90% Chebyshev(Mean, Sd) UCL	0.00151	95% Chebyshev(Mean, Sd) UCL	0.00186
97.5% Chebyshev(Mean, Sd) UCL	0.00236	99% Chebyshev(Mean, Sd) UCL	0.00332

Suggested UCL to Use

95% Student's-t UCL	0.00124

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

Table 3: Groundwater Gauging Data
12 Mars Road Lane Cove West
Goodman Property Services (Aust) Pty Ltd
S22013

Well Information	Survey Data			Gauging Data						
Well ID	Easting (MGA)	Northing (MGA)	Top of Casing (m AHD)	Date Gauged	Time Gauged	Depth to Water (m bTOC)	Total Well Depth (m bTOC)	Depth to Product (m bTOC)	Product Thickness (m)	Groundwater Elevation (m AHD)
MW01	328657.943	6257257.11	48.620	21/11/2024	12:53:12:000	8.700	9.00	-	-	39.920
MW02	328635.286	6257098.845	37.935	21/11/2024	08:15:08:000	1.900	7.97	-	-	36.035
MW03	328697.695	6257104.719	37.994	21/11/2024	09:33:03:000	3.120	7.93	-	-	34.874
MW04	328737.109	6257161.521	37.779	21/11/2024	10:50:56:000	1.430	7.98	-	-	36.349
MW05	328756.358	6257241.788	41.620	21/11/2024	11:40:10:000	3.940	7.93	-	-	37.680

Notes
MGA = Map Grid Australia
m AHD = meters Australian Height Datum
ppm = parts per million
m bTOC = metres below top of casing

Table 4: Groundwater Geochemical Parameters
12 Mars Road Lane Cove West
Goodman Property Services (Aust) Pty Ltd
S22013

Monitoring Well Information		Water Quality Stabilised Results										
Well ID	Sample Date	DO (mg/L) ±10%	EC (µS/cm) ±3%	TDS* (mg/L)	pH ±0.05	ORP (Er) (mV)	Redox (mV) ±10mV	Temp (°C) ±10%	Colour	Sheen	Odour	Turbidity
MW01	21/11/2024	4.58	876	569.4	6.37	116.7	321.7	22.1	colourless	no sheen	no odour	Non-turbid
MW02	21/11/2024	5.40	716	465.4	4.75	102.9	307.9	18.6	colourless	no sheen	no odour	Non-turbid
MW03	21/11/2024	1.96	506	328.9	4.35	124.6	329.6	19.5	colourless	no sheen	no odour	Non-turbid
MW04	21/11/2024	4.64	486	315.9	5.20	135.7	340.7	21.7	colourless	no sheen	chemical odour	Non-turbid
MW05	21/11/2024	4.48	429	278.8	5.42	128.5	333.5	20.2	colourless	no sheen	no odour	Non-turbid

Comments
Values presented are those after stabilisation. In accordance with EPA Publication 669, the parameters were considered stable when three consecutive readings (obtained several minutes apart) were within the specified parameters.
DO = Dissolved Oxygen
EC = Electrical Conductivity.
TDS = Total Dissolved Solids
* = TDS calculated by EC multiplied by 0.65
ORP = Oxidation Reduction Potential as millivolts (mV). Field values (Er values, mV) taken with redox probe with a platinum electrode and silver/silver chloride reference electrode. For interpretation of the Er results can be converted to Eh values using the following conversion: Eh (mV) = Er (mV) + 205.

Table 5: Groundwater Analytical Results
12 Mars Road Lane Cove West
Goodman Property Services (Aust) Pty Ltd
S22013

					Metals								BTEX						Total Petroleum Hydrocarbons					Total Recoverable Hydrocarbons							PAHs
					Arsenic (filtered)	Cadmium (filtered)	Chromium (filtered)	Copper (filtered)	Lead (filtered)	Mercury (filtered)	Nickel (filtered)	Zinc (filtered)	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Total Xylene	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Sum)	C6-C10 Fraction	C6-C10 Fraction minus BTEX (F1)	>C10-C16 Fraction	>C10-C16 Fraction minus naphthalene (F2)	>C16-C34 Fraction	>C34-C40 Fraction	>C10-C40 Fraction (Sum)	Naphthalene (VOC)
Unit					mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL					0.001	0.0001	0.001	0.001	0.001	0.00005	0.001	0.001	1	1	1	2	1	2	10	50	100	50	50	10	10	50	50	100	100	50	1
Groundwater HSLs - NEPM Setting 'D' - Commercial / Industrial - Default Screen													5,000[#1]	NL [#1]	NL [#1]			NL [#1]							6,000[#7]		NL [#1]				
Aquatic ecosystems DGV - slightly to moderately disturbed (95%) - marine						0.0007[#2]	0.0044[#3]	0.0013[#4]	0.0044[#4]	0.0001[#2]	0.007[#2]	0.008[#4]	500[#2]	180[#4]	80[#4]		350[#5]								640[#6]		640[#6]	640[#7]	640[#8]		
Recreational Water - Health					**0.1[#10]**	**0.02[#10]**	**0.5[#11]**	**20[#10]**	**0.1[#10]**	**0.01[#10]**	**0.2[#10]**	**60[#12]**	**10[#10]**	**8,000[#10]**	**3,000[#10]**			**6,000[#10]**							**900[#13]**		**900[#13]**	**900[#14]**	**900[#14]**		
Location	**Field ID**	**Date**	**Sample Type**	**Lab Report**																											
MW01	MW01	21/11/2024	Normal	367014	0.004	0.0002	<0.001	0.001	<0.001	<0.00005	0.041	0.34	<1	<1	<1	<2	<1	-	<10	100	100	<100	200	<10	<10	120	120	<100	<100	120	<1
MW02	MW02	21/11/2024	Normal	367014	<0.001	<0.0001	0.001	0.006	0.003	<0.00005	0.019	0.062	<1	<1	<1	<2	<1	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<1
MW02	QC206	21/11/2024	Interlab_D	ES2438247	<0.001	<0.0001	0.001	0.006	0.002	<0.0001	0.021	0.064	<1	<2	<2	<2	<2	<2	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100	<5
MW03	MW03	21/11/2024	Normal	367014	<0.001	<0.0001	<0.001	0.004	0.004	<0.00005	0.005	0.024	<1	<1	<1	<2	<1	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<1
MW04	MW04	21/11/2024	Normal	367014	<0.001	<0.0001	<0.001	0.003	<0.001	<0.00005	0.01	0.036	<1	6	<1	<2	<1	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<1
MW05	MW05	21/11/2024	Normal	367014	<0.001	<0.0001	<0.001	0.002	<0.001	<0.00005	0.01	0.039	<1	1	<1	<2	<1	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<1

Table 5: Groundwater Analytical Results
12 Mars Road Lane Cove West
Goodman Property Services (Aust) Pty Ltd
S22013

					MAH									Halogenated Benzenes									Halogenated Hydrocarbons			
					1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Isopropylbenzene	n-Butylbenzene	n-Propylbenzene	p-Isopropyltoluene	sec-Butylbenzene	tert-Butylbenzene	Styrene	1,2,3-Trichlorobenzene	1,2-Dichlorobenzene	1,2,4-Trichlorobenzene	1,3-Dichlorobenzene	2-Chlorotoluene	1,4-Dichlorobenzene	4-Chlorotoluene	Bromobenzene	Chlorobenzene	1,2-Dibromoethane	Bromomethane	Dichlorodifluoromethane	Trichlorofluoromethane
				Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
				EQL	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	10	10	10
				Groundwater HSLs - NEPM Setting 'D' - Commercial / Industrial - Default Screen																							
				Aquatic ecosystems DGV - slightly to moderately disturbed (95%) - marine			30[#4]							3[#5]	160[#5]	20[#2]	260[#5]		60[#5]			55[#4]				
				Recreational Water - Health	**560[#12]**	**600[#12]**	**4,500[#12]**	**10,000[#12]**	**6,600[#12]**		**20,000[#12]**	**6,900[#12]**	**300[#10]**	**300[#15]**	**15,000[#10]**	**300[#15]**		**2,400[#12]**	**400[#10]**	**2,500[#12]**	**620[#12]**	**3,000[#10]**	**10[#10]**	**10[#10]**	**2,000[#12]**	**52,000[#12]**
Location	**Field ID**	**Date**	**Sample Type**	**Lab Report**																						
MW01	MW01	21/11/2024	Normal	367014	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10
MW02	MW02	21/11/2024	Normal	367014	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10
MW02	QC206	21/11/2024	Interlab_D	ES2438247	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<50	<50
MW03	MW03	21/11/2024	Normal	367014	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10
MW04	MW04	21/11/2024	Normal	367014	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10
MW05	MW05	21/11/2024	Normal	367014	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10

Table 5: Groundwater Analytical Results
12 Mars Road Lane Cove West
Goodman Property Services (Aust) Pty Ltd
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												Chlorinated Hydrocarbons											
												1,1-Dichloropropene	1,1-Dichloroethane	1,1-Dichloroethene	1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,2-Dibromo-3-chloropropane	1,1,2-Trichloroethane	1,1,2,2-Tetrachloroethane	1,2,3-Trichloropropane	1,2-Dichloroethane	1,3-Dichloropropane	1,2-Dichloropropane
											Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
											EQL	1	1	1	1	1	1	1	1	1	1	1	1
											Groundwater HSLs - NEPM Setting 'D' - Commercial / Industrial - Default Screen												
											Aquatic ecosystems DGV - slightly to moderately disturbed (95%) - marine			700[#4]		270[#4]		1,900[#4]	400[#4]		1,900[#4]	1,100[#4]	900[#4]
											Recreational Water - Health		**28[#12]**	**300[#10]**	**5.7[#12]**	**80,000[#12]**	**10[#16]**	**2.8[#12]**	**0.76[#12]**	**0.0075[#12]**	**30[#10]**	**3,700[#12]**	**400[#17]**
Location	**Field ID**	**Date**	**Sample Type**	**Lab Report**																			
MW01	MW01	21/11/2024	Normal	367014	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW02	MW02	21/11/2024	Normal	367014	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW02	QC206	21/11/2024	Interlab_D	ES2438247	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5	<5
MW03	MW03	21/11/2024	Normal	367014	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW04	MW04	21/11/2024	Normal	367014	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW05	MW05	21/11/2024	Normal	367014	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

												Chlorinated Hydrocarbons											
												2,2-Dichloropropane	Bromochloromethane	Bromodichloromethane	Bromoform	Carbon Tetrachloride	Chlorodibromomethane	Chloroethane	Chloroform	Chloromethane			
											Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L			
											EQL	1	1	1	1	1	1	10	1	10			
											Groundwater HSLs - NEPM Setting 'D' - Commercial / Industrial - Default Screen												
											Aquatic ecosystems DGV - slightly to moderately disturbed (95%) - marine					240[#4]			370[#2]				
											Recreational Water - Health		**830[#12]**	**600[#16]**	**1,000[#16]**	**30[#10]**	**1,000[#16]**	**83,000[#12]**	**3,000[#16]**	**1,900[#12]**			
Location	**Field ID**	**Date**	**Sample Type**	**Lab Report**																			
MW01	MW01	21/11/2024	Normal	367014	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<10			
MW02	MW02	21/11/2024	Normal	367014	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<10			
MW02	QC206	21/11/2024	Interlab_D	ES2438247	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5	<50	<5	<50			
MW03	MW03	21/11/2024	Normal	367014	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<10			
MW04	MW04	21/11/2024	Normal	367014	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<10			
MW05	MW05	21/11/2024	Normal	367014	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<1	<10			

Table 5: Groundwater Analytical Results
12 Mars Road Lane Cove West
Goodman Property Services (Aust) Pty Ltd
S22013

	Chlorinated Hydrocarbons									(n:2) Fluorotelomer Sulfonic Acids		Perfluoroalkane Carboxylic Acids	Perfluoroalkane Sulfonic Acids				PFAS	
	cis-1,2-Dichloroethene	Dibromomethane	cis-1,3-Dichloropropene	Hexachlorobutadiene	Tetrachloroethene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Vinyl Chloride	Cyclohexane	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	Perfluorooctanoic acid (PFOA)	Perfluorooctanesulfonic acid (PFOS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorobutane sulfonic acid (PFBS)	Sum of PFHxS and PFOS	Sum of US EPA PFAS (PFOS + PFOA)	Sum of PFAS
Unit	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	1	1	1	1	1	1	1	10	1	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Groundwater HSLs - NEPM Setting 'D' - Commercial / Industrial - Default Screen																		
Aquatic ecosystems DGV - slightly to moderately disturbed (95%) - marine					70[#4]			100[#4]				19[#9]	0.00023[#9]					
Recreational Water - Health	**600[#18]**	**83[#12]**		**7[#10]**	**500[#10]**	**600[#18]**		**3[#10]**	**130,000[#12]**			**10[#19]**	**2[#19]**	**2[#19]**		**2[#19]**		

Location	Field ID	Date	Sample Type	Lab Report															
MW01	MW01	21/11/2024	Normal	367014	<1	<1	<1	<1	<1	<1	<1	<10	<1	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
MW02	MW02	21/11/2024	Normal	367014	<1	<1	<1	<1	<1	<1	<1	<10	<1	<0.01	<0.02	<0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	0.01
MW02	QC206	21/11/2024	Interlab_D	ES2438247	<5	<5	<5	<5	<5	<5	<5	<50	-	<0.05	<0.05	<0.01	<0.01	<0.01	<0.02	<0.01	-	<0.01	
MW03	MW03	21/11/2024	Normal	367014	<1	<1	<1	<1	<1	<1	<1	<10	<1	<0.01	<0.02	<0.01	<0.01	0.04	<0.01	0.04	<0.01	0.04	
MW04	MW04	21/11/2024	Normal	367014	<1	<1	<1	<1	<1	<1	<1	<10	<1	<0.01	<0.02	0.01	<0.01	0.02	<0.01	0.02	0.01	0.03	
MW05	MW05	21/11/2024	Normal	367014	<1	<1	<1	<1	<1	<1	<1	<10	<1	<0.01	<0.02	<0.01	<0.01	0.01	<0.01	0.01	<0.01	0.01	

Comments

#1 Value for shallow (2-4 m bgl) sand aquifer adopted for initial screening.
#2 ANZG (2018). Higher species protection level adopted as recommended
#3 ANZG (2018). The more conservative value (Chromium CrVI) out of the available chromium species was adopted for initial screening purposes.
#4 ANZG (2018)
#5 ANZG (2018). Freshwater DGV adopted as an unknown reliability value as recommended
#6 CRWB (2019). Lowest of values for gasoline (C4-C12) and diesel (C8-C21) range hydrocarbons.
#7 CRWB (2019). Value for diesel (C8-C21) mixture.
#8 CRWB (2019). Value for diesel (C8-C21) mixture. No value derived for TPH >C21 as not considered soluble; diesel value used for screening.
#9 PFAS National Environmental Management Plan (HEPA 2020). Higher species protection level adopted as recommended
#10 NHMRC (2011) - Health. Multiplied by a factor of x10
#11 NHMRC (2011) - Health. Guideline for Cr (VI) conservatively adopted for comparision to total chromium. Speciated analysis should be undertaken where guideline is exceeded. Multiplied by a factor of x10
#12 USEPA Tap Water RSL (TR=1E-06; THQ=0.1) - May 2024. Multiplied by a factor of x10
#13 WHO (2008). Lowest derived value for aliphatic and aromatic fractions in this range. Multiplied by a factor of x10
#14 Lowest derived value for aliphatic and aromatic fractions in this range (90 ug/L). Multiplied by a factor of x10
#15 NHMRC (2011) - Health. Value is for total TCBs but applies to individual isomers also. Multiplied by a factor of x10
#16 WHO Guidelines for drinking-water quality. Multiplied by a factor of x10
#17 WHO Guidelines for drinking-water quality. Provisional guideline due to uncertainties in the health database. Multiplied by a factor of x10
#18 NHMRC (2011) - Health. Value is for total 1,2-DCE but also applied to individual isomers. Multiplied by a factor of x10
#19 NHMRC (2019) Guidance on PFAS in Recreational Waters

Appendix A: Proposed Development

PROJECT MARS

12 Mars Rd, Lane Cove West NSW 2066

SSDA APPLICATION



DRAWING LIST - TOA APPLICATION

DRAWING NUMBER	DRAWING NAME	CURRENT REVISION
AR-00 - PRELIMINARY WORK		
MAR-AR-DRG-00000	COVER SHEET	B
AR-10 - PRELIMINARY WORK		
MAR-AR-DRG-11000	URBAN CONTEXT PLAN	B
MAR-AR-DRG-11001	MASTERPLAN	B
MAR-AR-DRG-11002	SURVEY & EXISTING SITE PLAN	B
MAR-AR-DRG-11003	SITE PLAN	B
MAR-AR-DRG-11004	AXO VIEWS	B
MAR-AR-DRG-12000	DEMOLITION PLAN	B
MAR-AR-DRG-17000	SHADOW STUDY - SUMMER	B
MAR-AR-DRG-17001	SHADOW STUDY - SPRING	B
MAR-AR-DRG-17002	SHADOW STUDY - WINTER	B
MAR-AR-DRG-17003	SHADOW STUDY - AUTUMN	B
MAR-AR-DRG-18000	STAGING	B
AR-20 - GENERAL ARRANGEMENT		
MAR-AR-DRG-20000	AREA SCHEDULE	B
MAR-AR-DRG-21000	GENERAL ARRANGEMENT - LOWER GROUND FLOOR PLAN	B

DRAWING LIST - TOA APPLICATION

DRAWING NUMBER	DRAWING NAME	CURRENT REVISION
MAR-AR-DRG-21001	GENERAL ARRANGEMENT - GROUND FLOOR PLAN	B
MAR-AR-DRG-21002	GENERAL ARRANGEMENT - LEVEL 1 FLOOR PLAN	B
MAR-AR-DRG-21003	GENERAL ARRANGEMENT - LEVEL 2 FLOOR PLAN	B
MAR-AR-DRG-21004	GENERAL ARRANGEMENT - ROOF PLAN	B
MAR-AR-DRG-21005	GENERAL ARRANGEMENT - TOP OF SCREEN	B
MAR-AR-DRG-21006	GENERAL ARRANGEMENT - OFFICE - GROUND & LEVEL 01	B
MAR-AR-DRG-21007	GENERAL ARRANGEMENT - OFFICE - LEVEL 2 & 3	B
AR-30 - GENERAL ARRANGEMENT		
MAR-AR-DRG-30000	NORTH ELEVATION	B
MAR-AR-DRG-30001	EAST ELEVATION	B
MAR-AR-DRG-30002	SOUTH ELEVATION	B
MAR-AR-DRG-30003	WEST ELEVATION	B
MAR-AR-DRG-31000	SECTIONS SHEET 1 OF 2	B
MAR-AR-DRG-31001	SECTIONS SHEET 2 OF 2	B
AR-90 - SPECIAL PURPOSE		
MAR-AR-DRG-94101	SIGNAGE DETAILS - SITE TOTEM POLE + SIGNAGE	B
MAR-AR-DRG-96000	FINISHES SCHEDULE	B

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NOMINATED ARCHITECTS:
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ACT Huai Lim 16065

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REV	DESCRIPTION OF CHANGE	DATE	CHECKED	ISSUED
A	ISSUE FOR TOA	17/11/25	HDR	HDR
B	ISSUE FOR FORMAL LODGEMENT	03/12/25	HDR	HDR

CLIENT

Goodman

PROJECT

PROJECT MARS
12 Mars Rd, Lane Cove West NSW 2066

DRAWING TITLE

COVER SHEET

SCALE: NTS @ A1
PROJECT NUMBER: 10417434
DRAWING NUMBER: **MAR-AR-DRG-00000**
ISSUE: **B**

PROJECT STATUS

SSDA APPLICATION

3/12/2025 11:33:43 AM

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0 12.5 25 50



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NORTH POINT

REV	DESCRIPTION OF CHANGE	DATE	CHECKED	ISSUED
A	ISSUE FOR TOA	17/11/25	HDR	HDR
B	ISSUE FOR FORMAL LODGEMENT	03/12/25	HDR	HDR

CLIENT
Goodman

PROJECT
PROJECT MARS
12 Mars Rd, Lane Cove West NSW 2066

DRAWING TITLE
URBAN CONTEXT PLAN

SCALE
NTS @ A1

PROJECT NUMBER
10417434

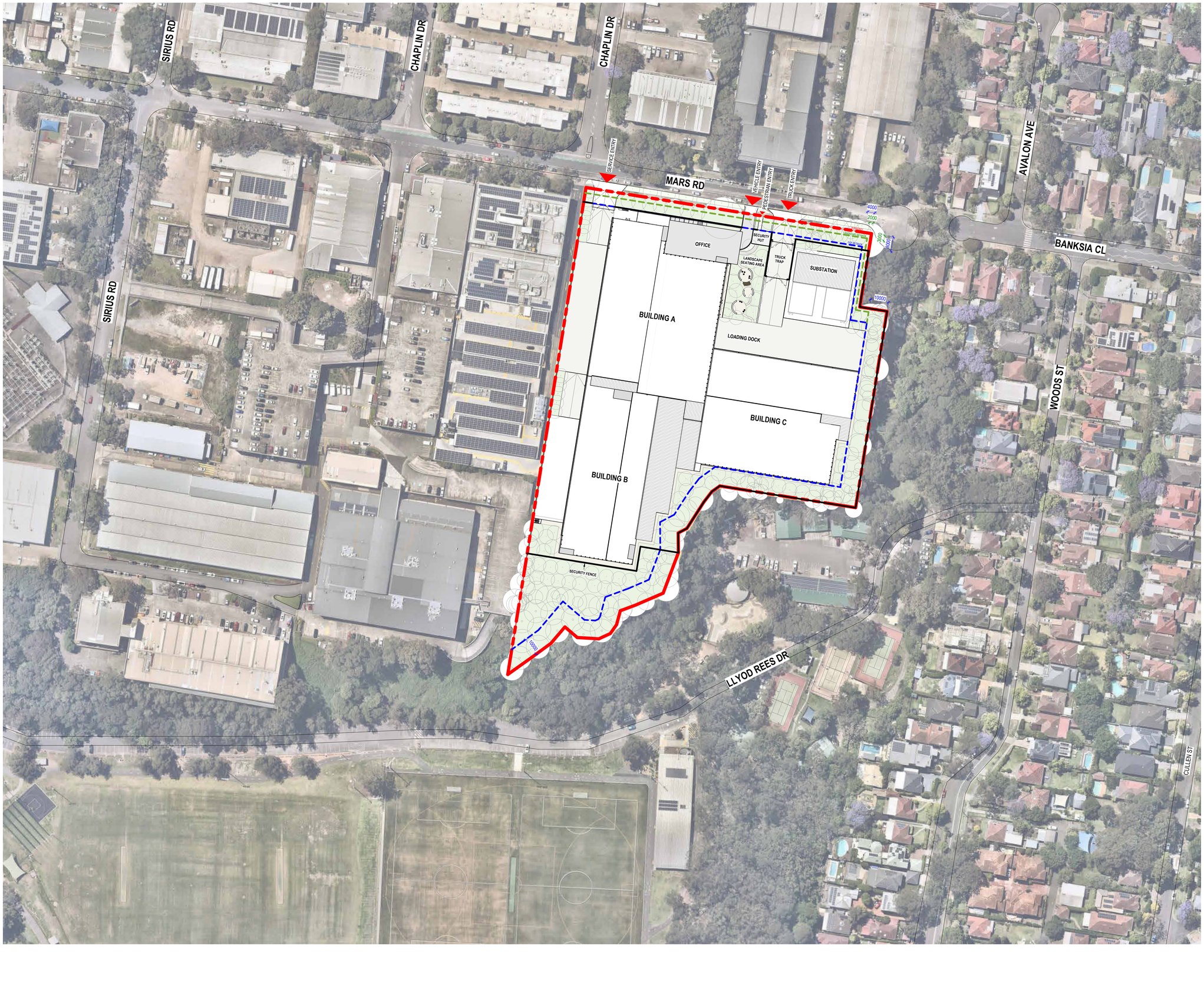
DRAWING NUMBER
MAR-AR-DRG-11000

ISSUE
B

PROJECT STATUS
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3/12/2025 11:33:46 AM

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NORTH POINT

REV	DESCRIPTION OF CHANGE	DATE	CHECKED	ISSUED
A	ISSUE FOR TOA	17/11/25	HDR	HDR
B	ISSUE FOR FORMAL LODGEMENT	03/12/25	HDR	HDR

LEGEND:

- BOUNDARY
- DCP LANDSCAPE SETBACK
- DCP SETBACK
- SECURITY FENCE
- PROPOSED LANDSCAPE
- PROPOSED EGRESS PATHWAY
- PROPOSED TREES

CLIENT
Goodman

PROJECT
PROJECT MARS
12 Mars Rd, Lane Cove West NSW 2066

DRAWING TITLE
MASTERPLAN

SCALE
As indicated @ A1

PROJECT NUMBER
10417434

DRAWING NUMBER
MAR-AR-DRG-11001

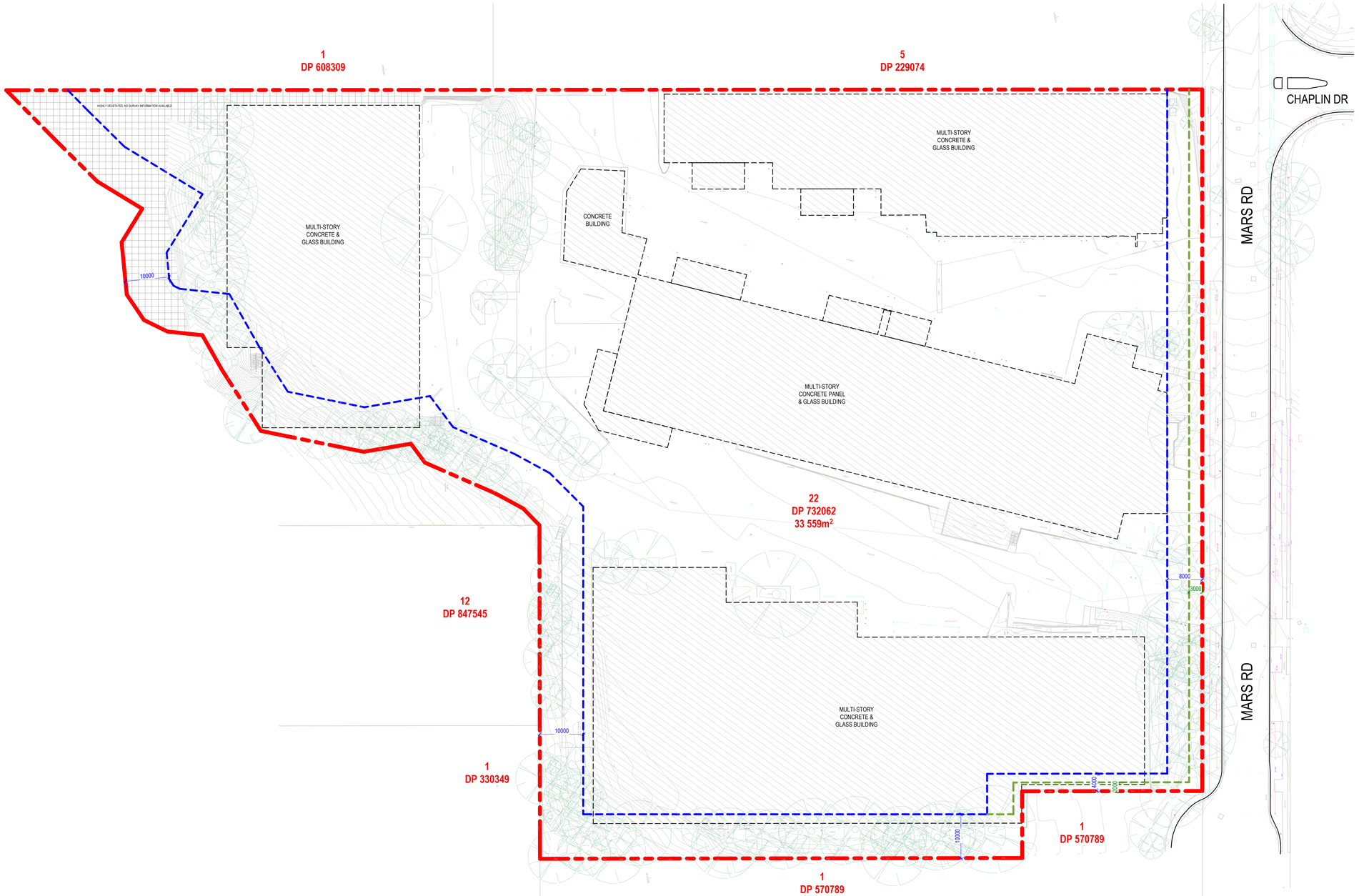
ISSUE
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PROJECT STATUS
SSDA APPLICATION

3/12/2025 11:33:58 AM

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REV	DESCRIPTION OF CHANGE	DATE	CHECKED	ISSUED
A	ISSUE FOR TOA	17/11/25	HDR	HDR
B	ISSUE FOR FORMAL LODGEMENT	03/12/25	HDR	HDR

LEGEND:

- *BOUNDARY*
- *DCP SETBACK*
- *DCP LANDSCAPE SETBACK*
- *CONTOURS*
- *STORMWATER*
- *ELECTRICAL OH*
- *EXISTING BUILDINGS*
- *NO SURVEY INFORMATION AVAILABLE*
- *EXISTING TREES*

CLIENT
Goodman

PROJECT
PROJECT MARS
12 Mars Rd, Lane Cove West NSW 2066

DRAWING TITLE
SURVEY & EXISTING SITE PLAN

SCALE
1 : 500 @ A1

PROJECT NUMBER
10417434

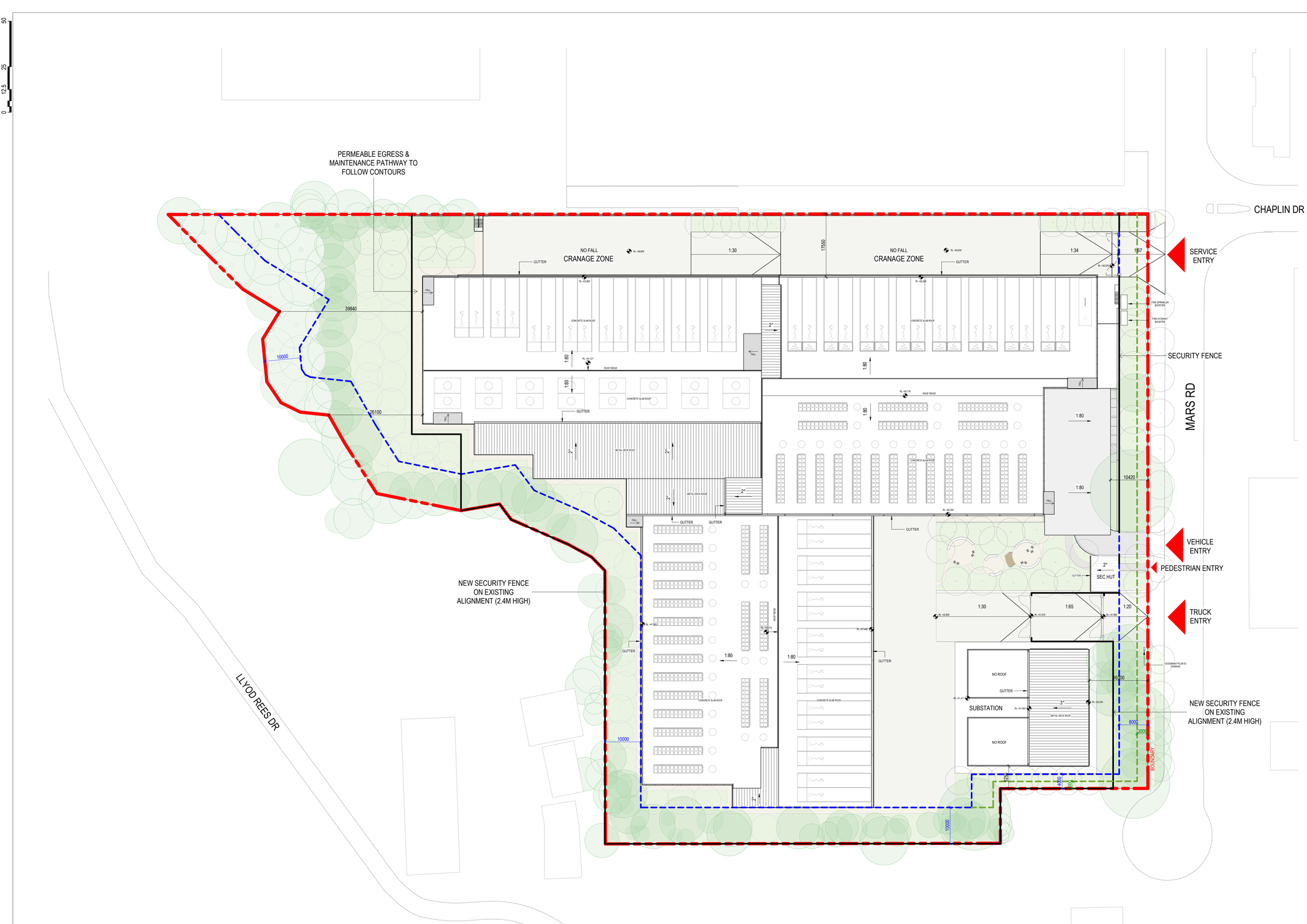
DRAWING NUMBER
MAR-AR-DRG-11002

ISSUE
B

PROJECT STATUS
SSDA APPLICATION

3/12/2025 11:34:17 AM

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REV	DESCRIPTION OF CHANGE	DATE	CHECKED	ISSUED
A	ISSUE FOR TOA	17/11/25	HDR	HDR
B	ISSUE FOR FORMAL LODGEMENT	03/12/25	HDR	HDR

LEGEND:

- *BOUNDARY*
- *DCP LANDSCAPE SETBACK*
- *DCP SETBACK*
- *SECURITY FENCE*
- *PROPOSED LANDSCAPE*
- *PROPOSED EGRESS PATHWAY*
- *EXISTING TREES RETAINED*
- *PROPOSED TREES*

CLIENT
Goodman

PROJECT
PROJECT MARS
12 Mars Rd, Lane Cove West NSW 2066

DRAWING TITLE
SITE PLAN

SCALE
1 : 500 @ A1

PROJECT NUMBER
10417434

DRAWING NUMBER
MAR-AR-DRG-11003

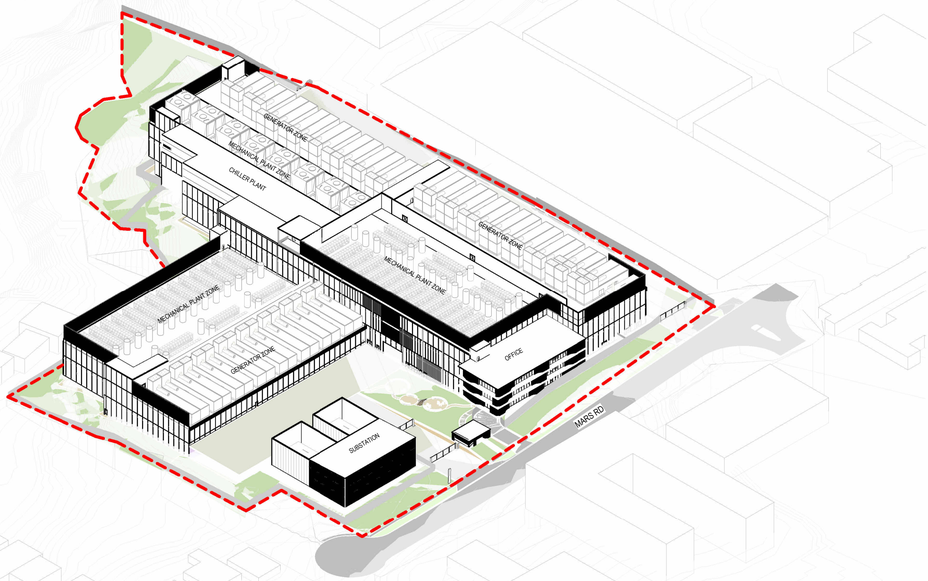
ISSUE
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PROJECT STATUS
SSDA APPLICATION

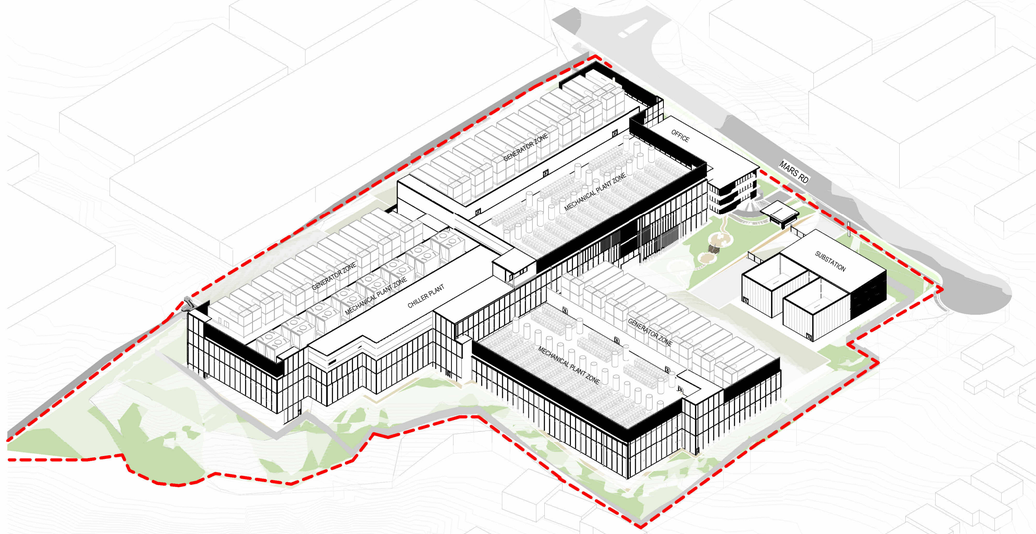
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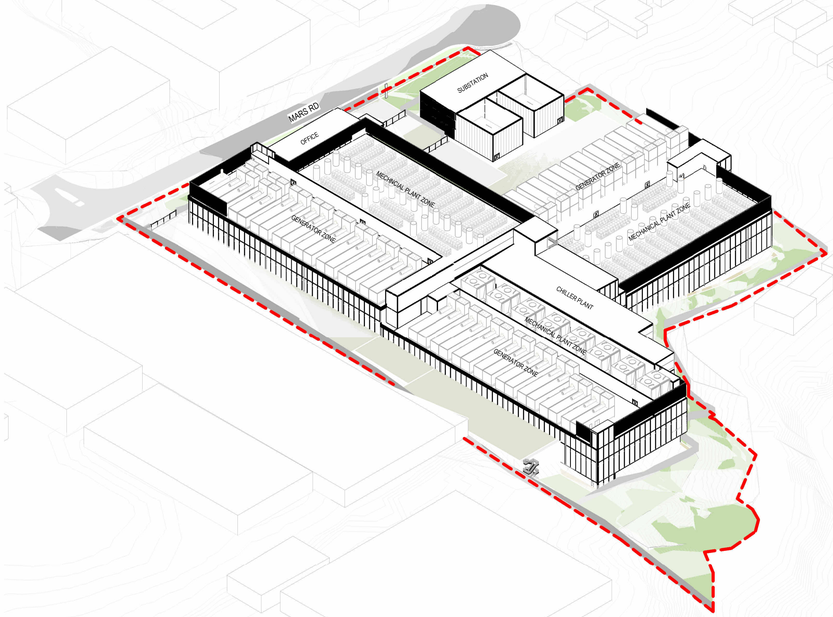
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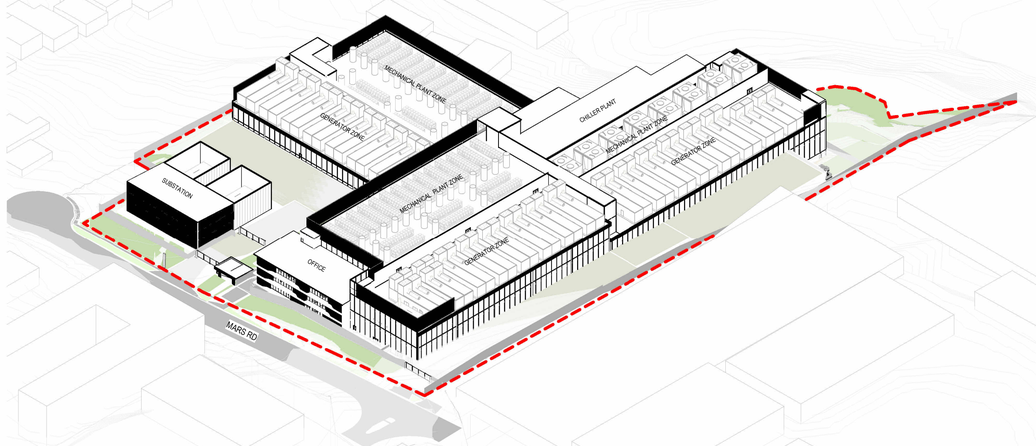
1 AXO VIEW - NORTH EAST



2 AXO VIEW - SOUTH EAST



3 AXO VIEW - SOUTH WEST



4 AXO VIEW - NORTH WEST

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A	ISSUE FOR TOA	17/11/25	HDR	HDR
B	ISSUE FOR FORMAL LODGEMENT	03/12/25	HDR	HDR

CLIENT
Goodman

PROJECT
PROJECT MARS
12 Mars Rd, Lane Cove West NSW 2066

DRAWING TITLE
AXO VIEWS

SCALE
@ A1

PROJECT NUMBER
10417434

DRAWING NUMBER
MAR-AR-DRG-11004

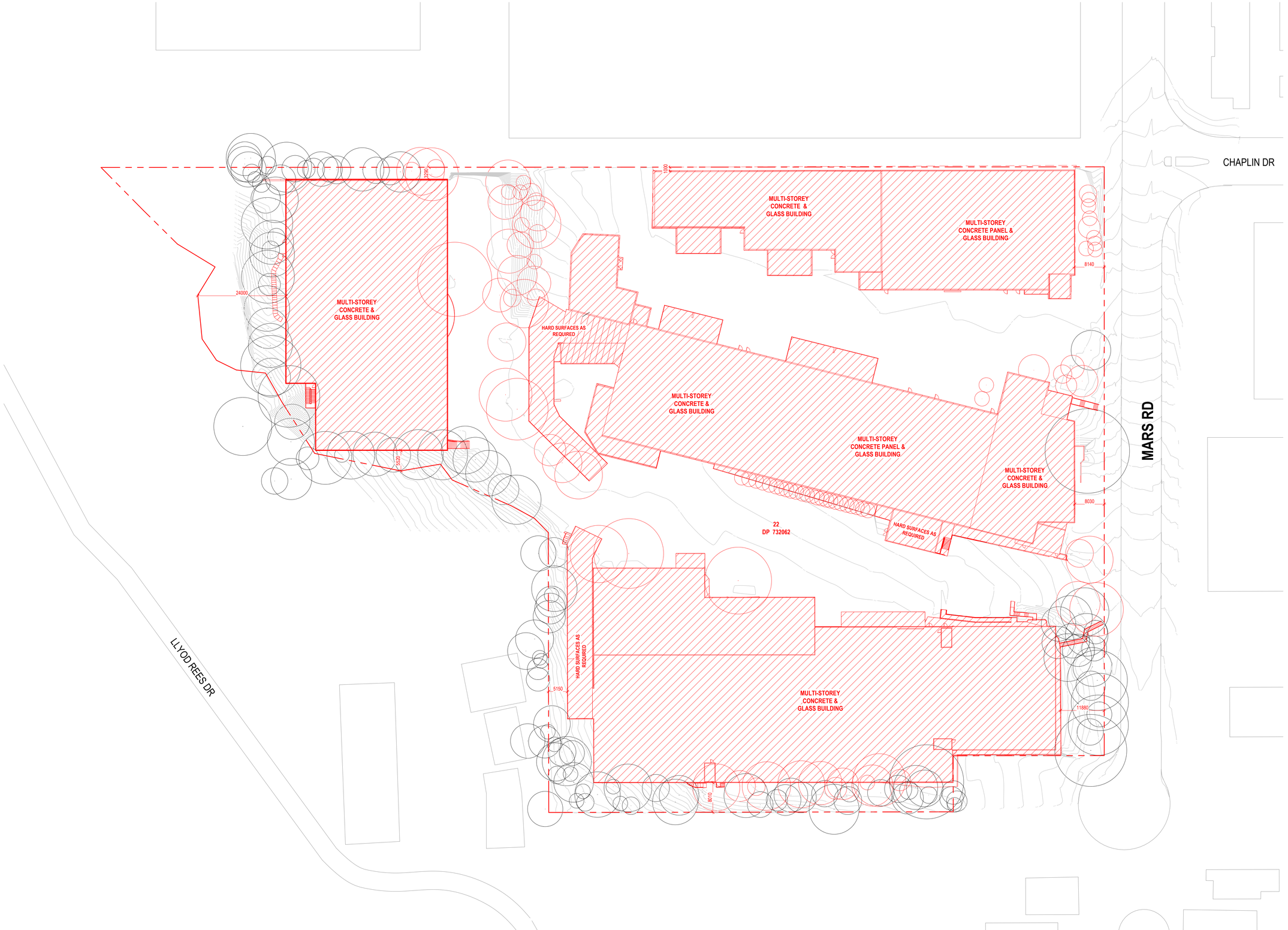
ISSUE
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PROJECT STATUS
SSDA APPLICATION

3/12/2025 11:46:50 AM

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REV	DESCRIPTION OF CHANGE	DATE	CHECKED	ISSUED
A	ISSUE FOR TOA	17/11/25	HDR	HDR
B	ISSUE FOR FORMAL LODGEMENT	03/12/25	HDR	HDR

LEGEND - DEMOLITION

INDICATES EXTENT OF DEMOLITION WORKS. REFER TO ADJACENT / LEADER NOTES FOR DEMOLITION REQUIREMENTS.

INDICATES EXTENT OF DEMOLITION WORKS EXISTING TREES TO BE DEMOLISHED

INDICATES EXTENT EXISTING TREES TO BE RETAINED

**REFER TO CIVIL DRAWING SET FOR EARTHWORK & SITEWORK PLANS*

CLIENT
Goodman

PROJECT
PROJECT MARS
12 Mars Rd, Lane Cove West NSW 2066

DRAWING TITLE
DEMOLITION PLAN

SCALE
1 : 500 @ A1

PROJECT NUMBER
10417434

DRAWING NUMBER
MAR-AR-DRG-12000

ISSUE
B

PROJECT STATUS
SSDA APPLICATION

3/12/2025 11:34:53 AM

Autodesk Docs://10417434_Goodman 12 Mars Rd SSD/MAR-HDR-AR-RVT_BLD.rvt

0 12.5 25 50



1 **21ST DECEMBER - 9AM - PROPOSED**
1 : 2000



2 **21ST DECEMBER - 12PM - PROPOSED**
1 : 2000



3 **21ST DECEMBER - 3PM - PROPOSED**
1 : 2000

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NORTH POINT

REV	DESCRIPTION OF CHANGE	DATE	CHECKED	ISSUED
A	ISSUE FOR TOA	17/11/25	HDR	HDR
B	ISSUE FOR FORMAL LODGEMENT	03/12/25	HDR	HDR

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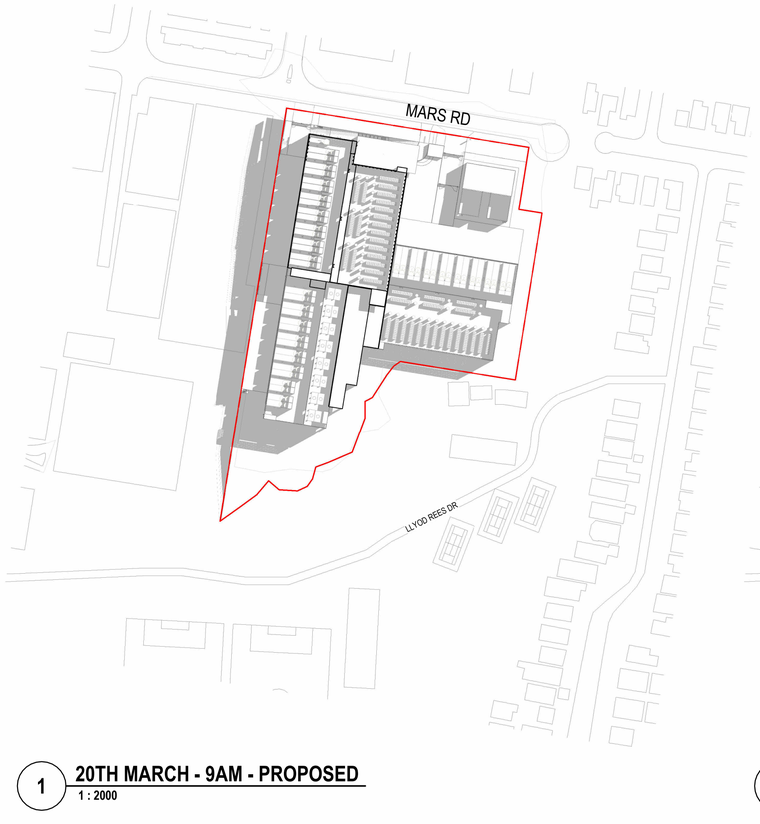
PROJECT
PROJECT MARS
12 Mars Rd, Lane Cove West NSW 2066

DRAWING TITLE
SHADOW STUDY - SUMMER

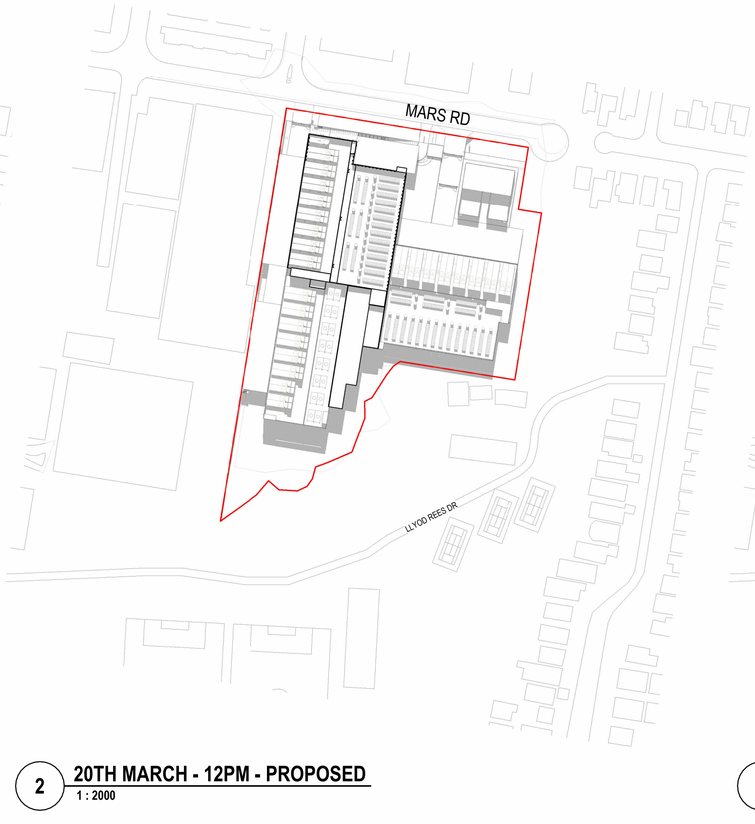
SCALE
1 : 2000 @ A1
PROJECT NUMBER
10417434
DRAWING NUMBER
MAR-AR-DRG-17000
ISSUE
B
PROJECT STATUS
SSDA APPLICATION
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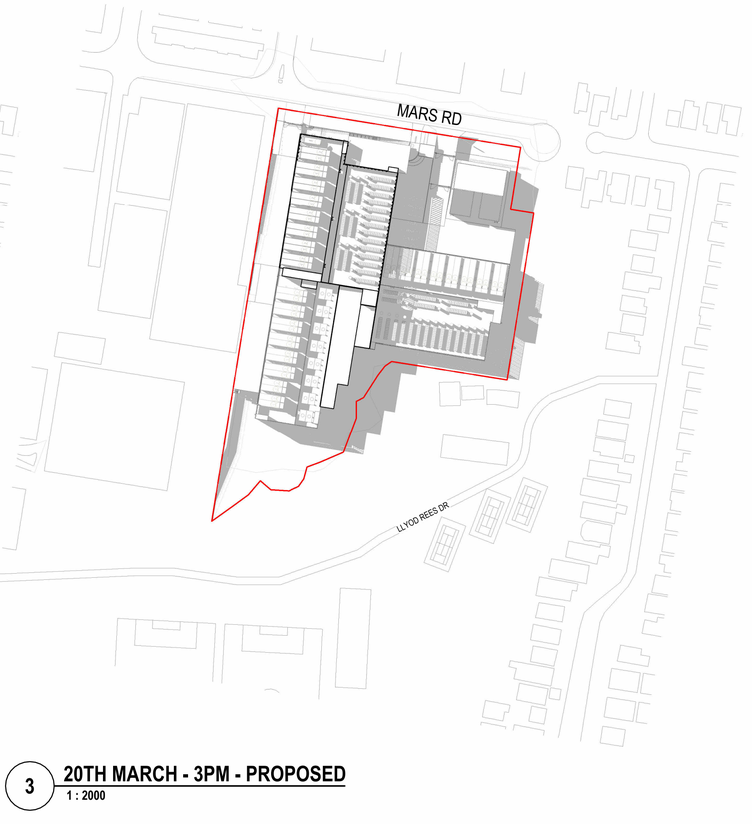
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1 **20TH MARCH - 9AM - PROPOSED**
1 : 2000



2 **20TH MARCH - 12PM - PROPOSED**
1 : 2000



3 **20TH MARCH - 3PM - PROPOSED**
1 : 2000

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REV	DESCRIPTION OF CHANGE	DATE	CHECKED	ISSUED
A	ISSUE FOR TOA	17/11/25	HDR	HDR
B	ISSUE FOR FORMAL LODGEMENT	03/12/25	HDR	HDR

CLIENT
Goodman

PROJECT
PROJECT MARS
12 Mars Rd, Lane Cove West NSW 2066

DRAWING TITLE
SHADOW STUDY - SPRING

SCALE
1 : 2000 @ A1

PROJECT NUMBER
10417434

DRAWING NUMBER
MAR-AR-DRG-17001

ISSUE
B

PROJECT STATUS
SSDA APPLICATION

3/12/2025 12:21:41 PM

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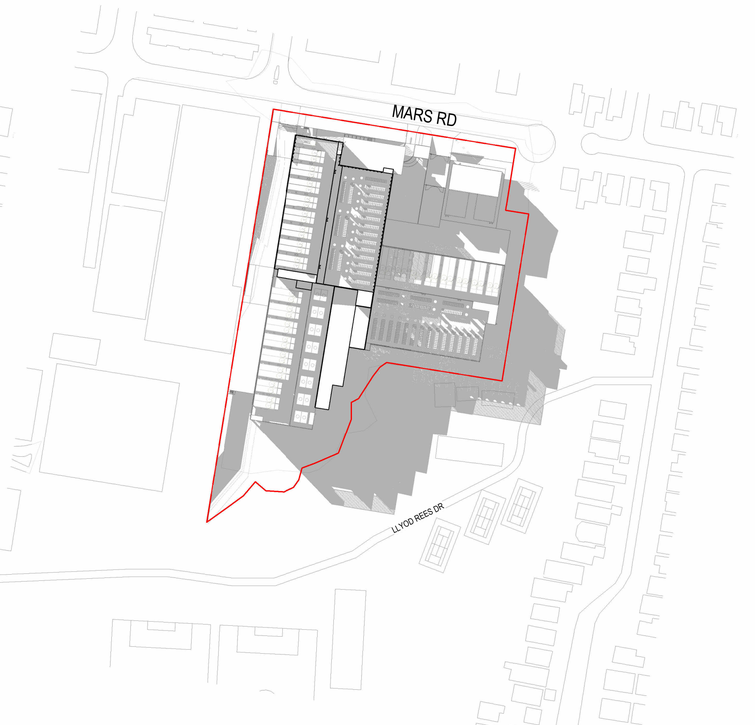
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1 **21ST JUNE - 9AM - PROPOSED**
1 : 2000



2 **21ST JUNE - 12PM - PROPOSED**
1 : 2000



3 **21ST JUNE - 3PM - PROPOSED**
1 : 2000

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NORTH POINT

REV	DESCRIPTION OF CHANGE	DATE	CHECKED	ISSUED
A	ISSUE FOR TOA	17/11/25	HDR	HDR
B	ISSUE FOR FORMAL LODGEMENT	03/12/25	HDR	HDR

CLIENT
Goodman

PROJECT
PROJECT MARS
12 Mars Rd, Lane Cove West NSW 2066

DRAWING TITLE
SHADOW STUDY - WINTER

SCALE
1 : 2000 @ A1

PROJECT NUMBER
10417434

DRAWING NUMBER
MAR-AR-DRG-17002

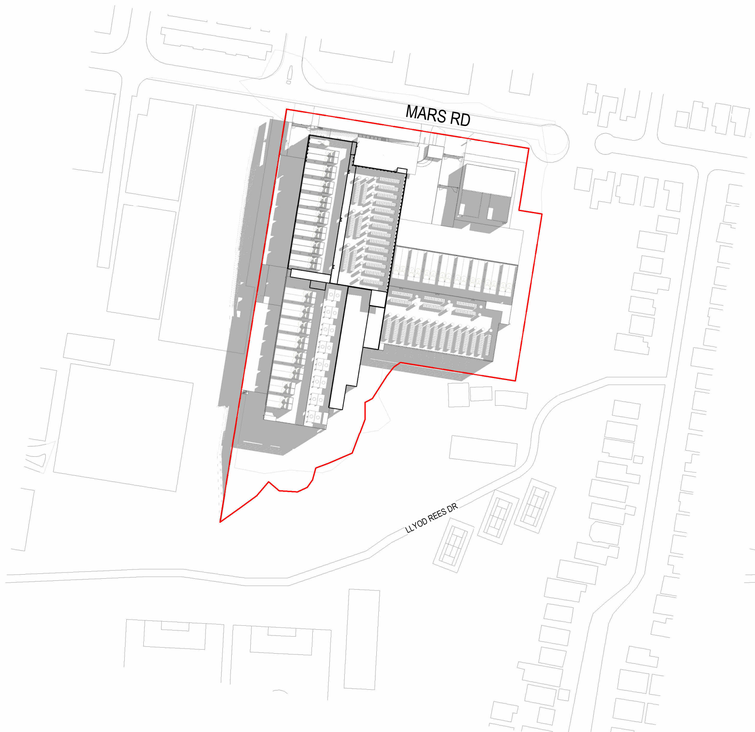
ISSUE
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PROJECT STATUS
SSDA APPLICATION

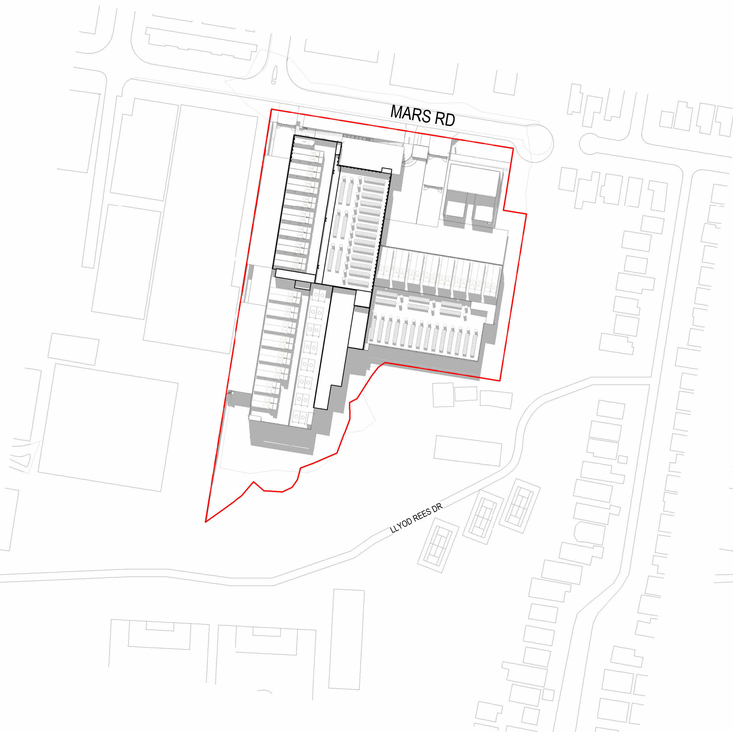
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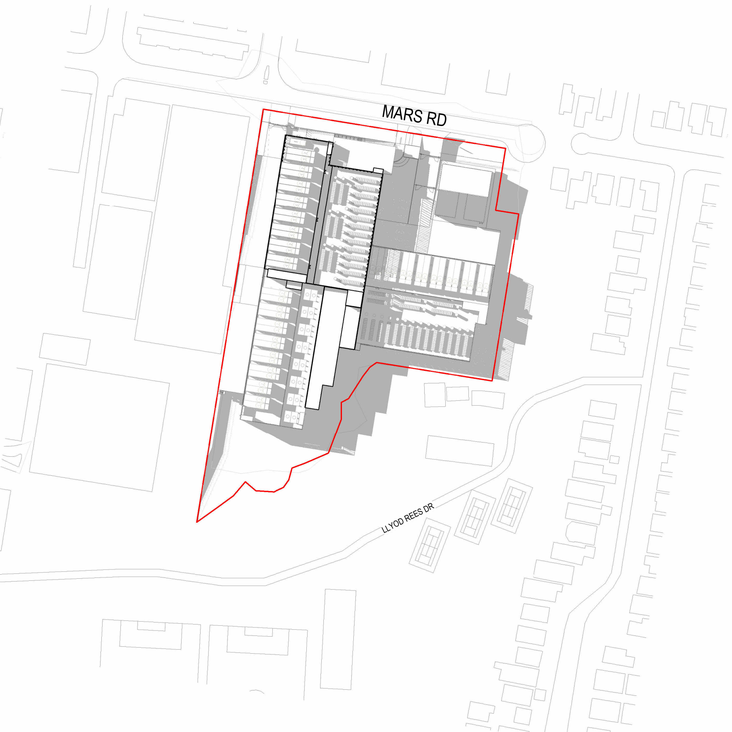
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1 **20TH SEPTEMBER - 9AM - PROPOSED**
1 : 2000



2 **20TH SEPTEMBER - 12PM - PROPOSED**
1 : 2000



3 **20TH SEPTEMBER - 3PM - PROPOSED**
1 : 2000

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NOMINATED ARCHITECTS:
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VIC HDR Pty Ltd 51752
ACT Huai Lim 16065

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REV	DESCRIPTION OF CHANGE	DATE	CHECKED	ISSUED
A	ISSUE FOR TOA	17/11/25	HDR	HDR
B	ISSUE FOR FORMAL LODGEMENT	03/12/25	HDR	HDR

CLIENT
Goodman

PROJECT
PROJECT MARS
12 Mars Rd, Lane Cove West NSW 2066

DRAWING TITLE
SHADOW STUDY - AUTUMN

SCALE
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PROJECT NUMBER
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DRAWING NUMBER
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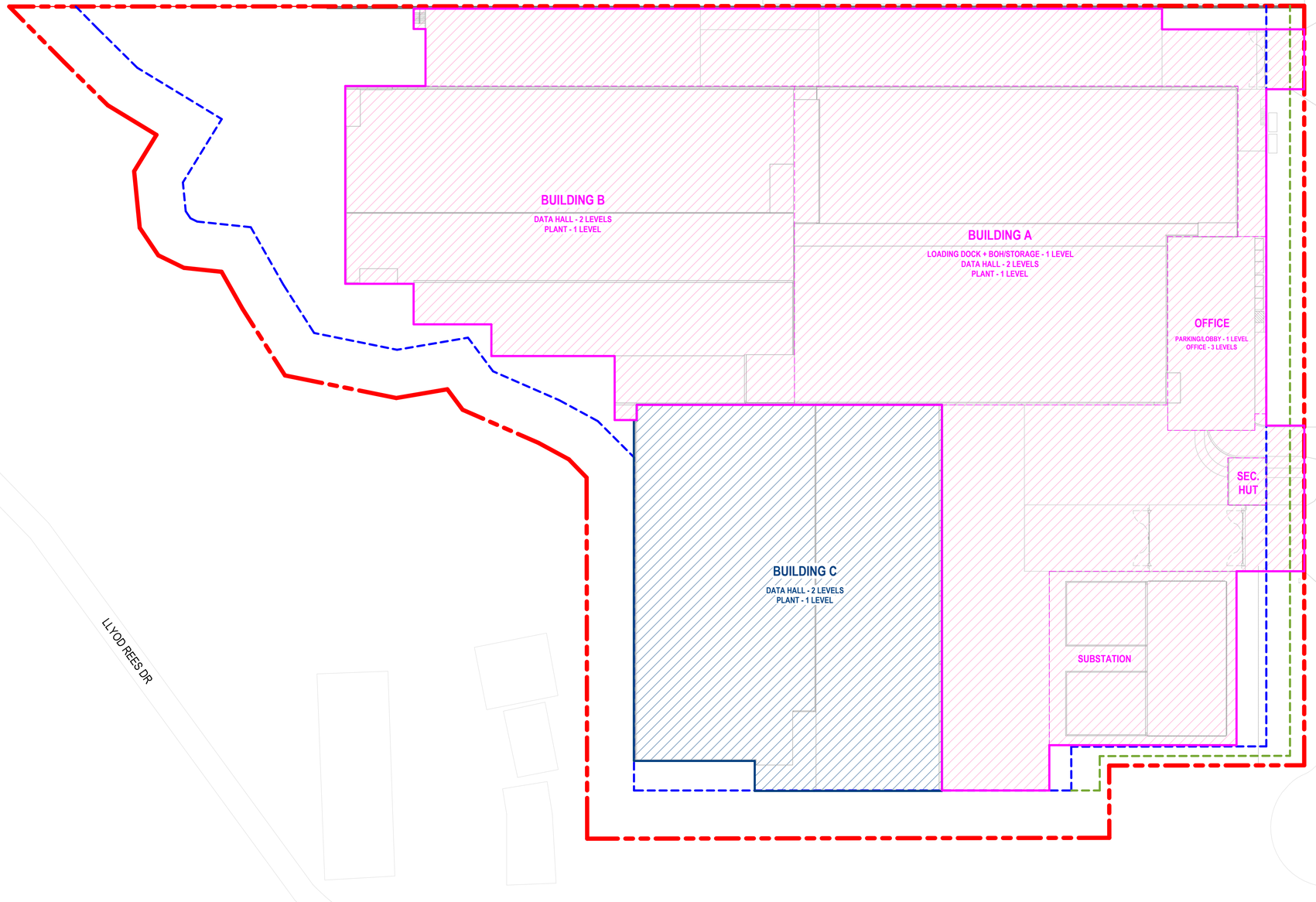
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PROJECT STATUS
SSDA APPLICATION

3/12/2025 12:25:59 PM

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0 12.5 25 50



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A	ISSUE FOR TOA	17/11/25	HDR	HDR
B	ISSUE FOR FORMAL LODGEMENT	03/12/25	HDR	HDR

LEGEND:

- *BOUNDARY*
- *DCP LANDSCAPE SETBACK*
- *DCP SETBACK*
- *PHASE 1*
- *PHASE 2*

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PROJECT
PROJECT MARS
12 Mars Rd, Lane Cove West NSW 2066

DRAWING TITLE
STAGING

SCALE
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PROJECT NUMBER
10417434

DRAWING NUMBER
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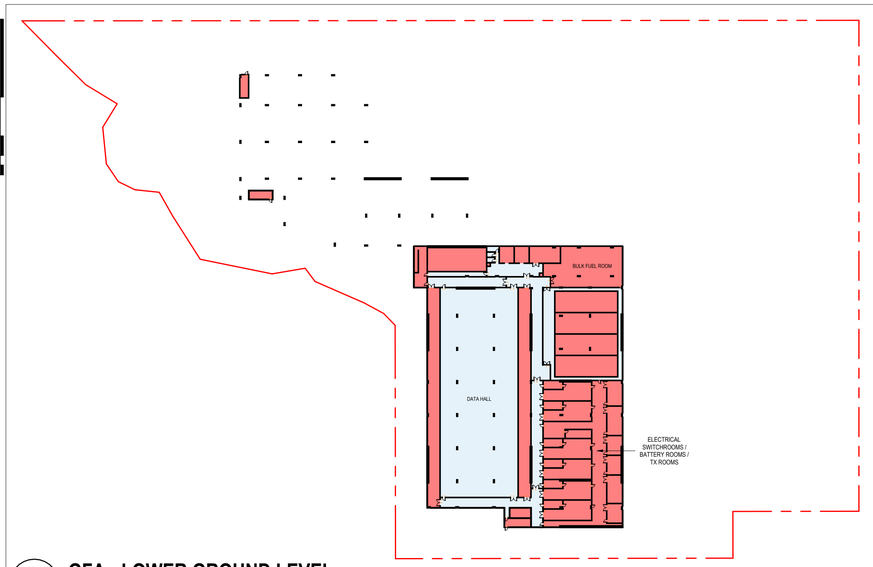
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PROJECT STATUS
SSDA APPLICATION

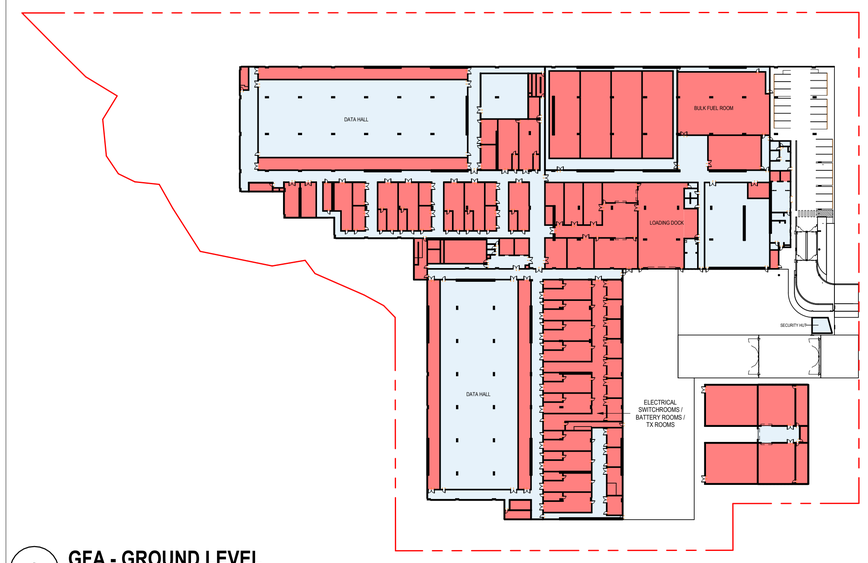
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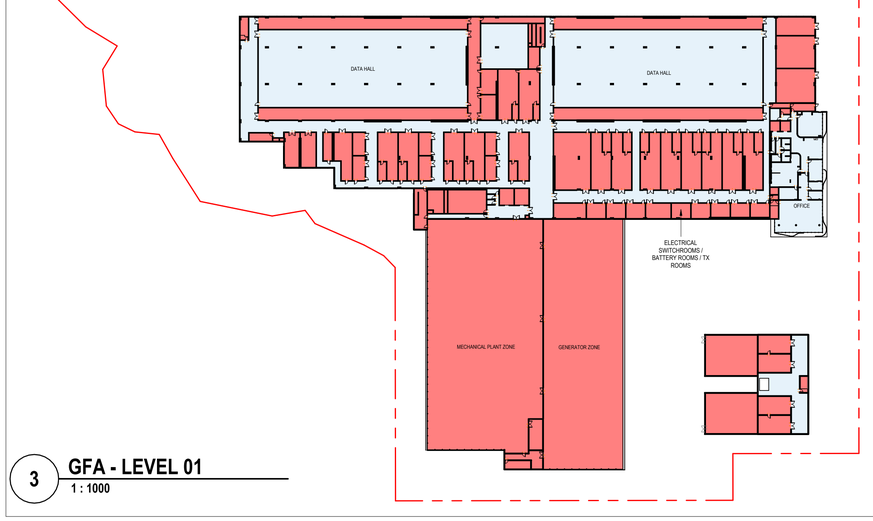
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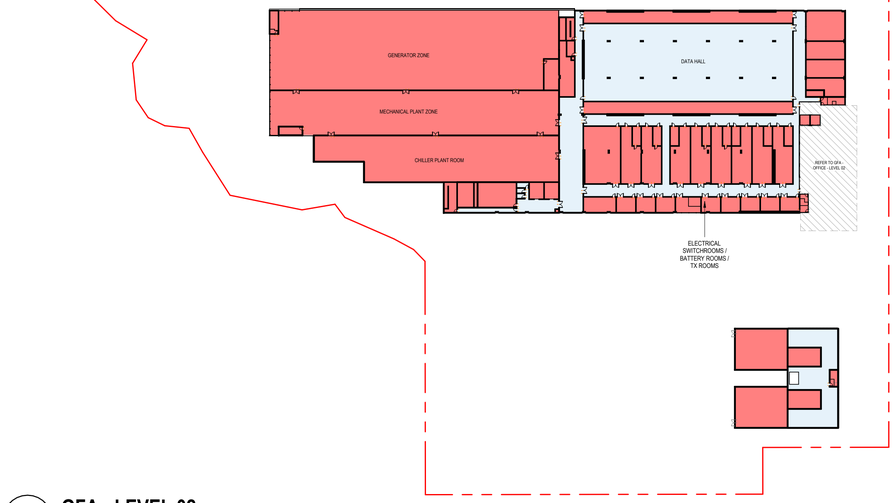
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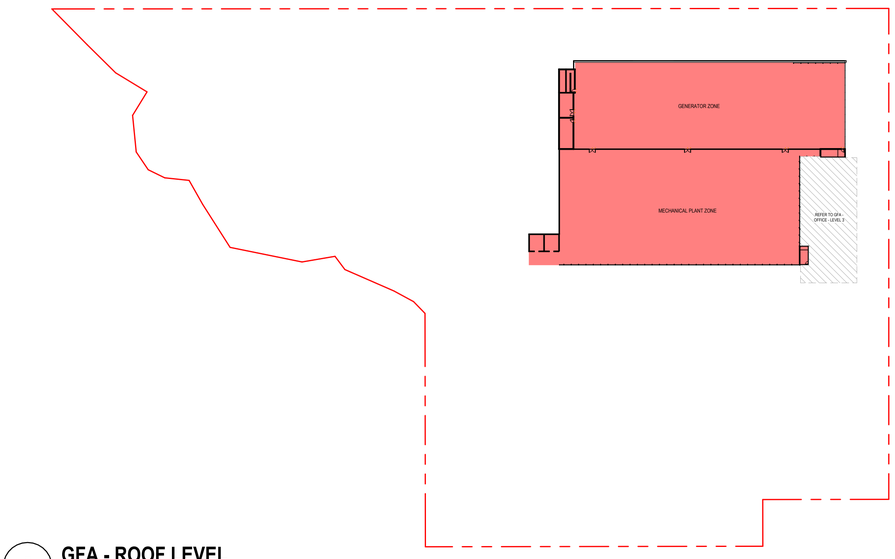
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3 GFA - LEVEL 01
1 : 1000



4 GFA - LEVEL 02
1 : 1000



5 GFA - ROOF LEVEL
1 : 1000



6 GFA - OFFICE - LEVEL 02
1 : 1000



7 GFA - OFFICE - LEVEL 03
1 : 1000

GFA AREA SCHEDULE - OFFICE

Level	Department	Area
OFFICE - GROUND LEVEL	Office	166 m²
LEVEL 01	Office	489 m²
OFFICE - LEVEL 02	Office	541 m²
OFFICE - LEVEL 03	Office	490 m²
		1,686 m²

GFA AREA SCHEDULE - DATA HALLS

Level	Department	Area
LOWER GROUND	Data Hall	1,736 m²
GROUND	Data Hall	3,469 m²
LEVEL 01	Data Hall	3,468 m²
LEVEL 02	Data Hall	1,735 m²
		10,408 m²

GFA AREA SCHEDULE - BACK OF HOUSE / STORAGE

Level	Department	Area
LOWER GROUND	Back of House / Storage	8 m²
GROUND	Back of House / Storage	2,058 m²
OFFICE - GROUND LEVEL	Back of House / Storage	6 m²
LEVEL 01	Back of House / Storage	286 m²
OFFICE - LEVEL 02	Back of House / Storage	18 m²
LEVEL 02	Back of House / Storage	8 m²
OFFICE - LEVEL 03	Back of House / Storage	39 m²
		2,422 m²

GFA AREA SCHEDULE - CIRCULATION - VERTICAL

Level	Department	Area
LOWER GROUND	Circulation - Vertical	72 m²
GROUND	Circulation - Vertical	266 m²
OFFICE - GROUND LEVEL	Circulation - Vertical	24 m²
LEVEL 01	Circulation - Vertical	230 m²
OFFICE - LEVEL 02	Circulation - Vertical	45 m²
LEVEL 02	Circulation - Vertical	141 m²
OFFICE - LEVEL 03	Circulation - Vertical	50 m²
ROOF LEVEL	Circulation - Vertical	62 m²
		890 m²

GFA AREA SCHEDULE - PLANT / SERVICES

Level	Department	Area
LOWER GROUND	Plant / Services	2,900 m²
GROUND	Plant / Services	7,595 m²
LEVEL 01	Plant / Services	9,827 m²
OFFICE - LEVEL 02	Plant / Services	7 m²
LEVEL 02	Plant / Services	7,846 m²
OFFICE - LEVEL 03	Plant / Services	7 m²
ROOF LEVEL	Plant / Services	5,635 m²
		33,819 m²

GFA AREA SCHEDULE - CIRCULATION - HORIZONTAL

Level	Department	Area
LOWER GROUND	Circulation - Horizontal	877 m²
GROUND	Circulation - Horizontal	3,020 m²
LEVEL 01	Circulation - Horizontal	2,682 m²
OFFICE - LEVEL 02	Circulation - Horizontal	30 m²
LEVEL 02	Circulation - Horizontal	1,645 m²
OFFICE - LEVEL 03	Circulation - Horizontal	52 m²
		8,307 m²

GFA AREA SCHEDULE BY DEPARTMENT

Department	Area
Amenities	237 m²
Back of House / Storage	2,422 m²
Circulation - Horizontal	8,307 m²
Circulation - Vertical	890 m²
Data Hall	10,408 m²
Office	1,686 m²
Plant / Services	33,819 m²
	57,769 m²

GFA AREA SCHEDULE

Occupancy	Area
AREA EXCLUDED FROM GFA	35,937 m²
AREA INCLUDED IN GFA	21,832 m²
	57,769 m²

SITE AREA	**33 559 m²**
GFA	**21 832 m²**
FSR	**0.65 : 1**

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A	ISSUE FOR TOA	17/11/25	HDR	HDR
B	ISSUE FOR FORMAL LODGEMENT	03/12/25	HDR	HDR

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PROJECT
PROJECT MARS
12 Mars Rd, Lane Cove West NSW 2066

DRAWING TITLE
AREA SCHEDULE

SCALE
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PROJECT NUMBER
10417434

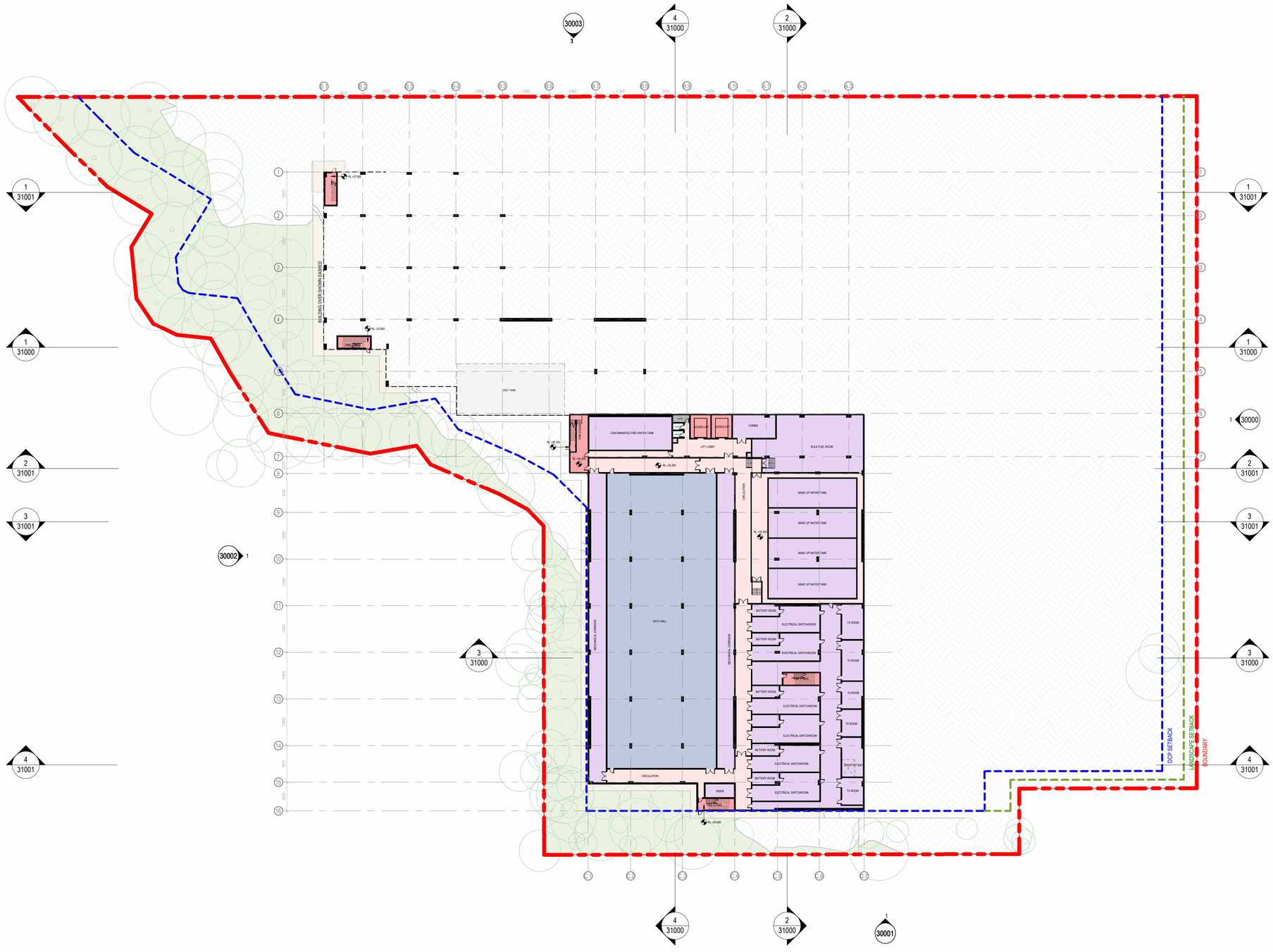
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ISSUE
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PROJECT STATUS
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B	ISSUE FOR FORMAL LODGEMENT	03/12/25	HDR	HDR

LEGEND:

- BOUNDARY
- DCP LANDSCAPE SETBACK
- DCP SETBACK
- SECURITY FENCE
- PROPOSED LANDSCAPE
- PROPOSED EGRESS PATHWAY
- EXISTING TREES RETAINED
- PROPOSED TREES
- DATA HALL
- PLANT / SERVICES
- OFFICE
- BACK OF HOUSE / STORAGE
- CIRCULATION - HORIZONTAL
- CIRCULATION - VERTICAL
- AMENITIES

CLIENT
Goodman

PROJECT
PROJECT MARS
12 Mars Rd, Lane Cove West NSW 2066

DRAWING TITLE
GENERAL ARRANGEMENT - LOWER GROUND FLOOR PLAN

SCALE
1 : 500 @ A1

PROJECT NUMBER
10417434

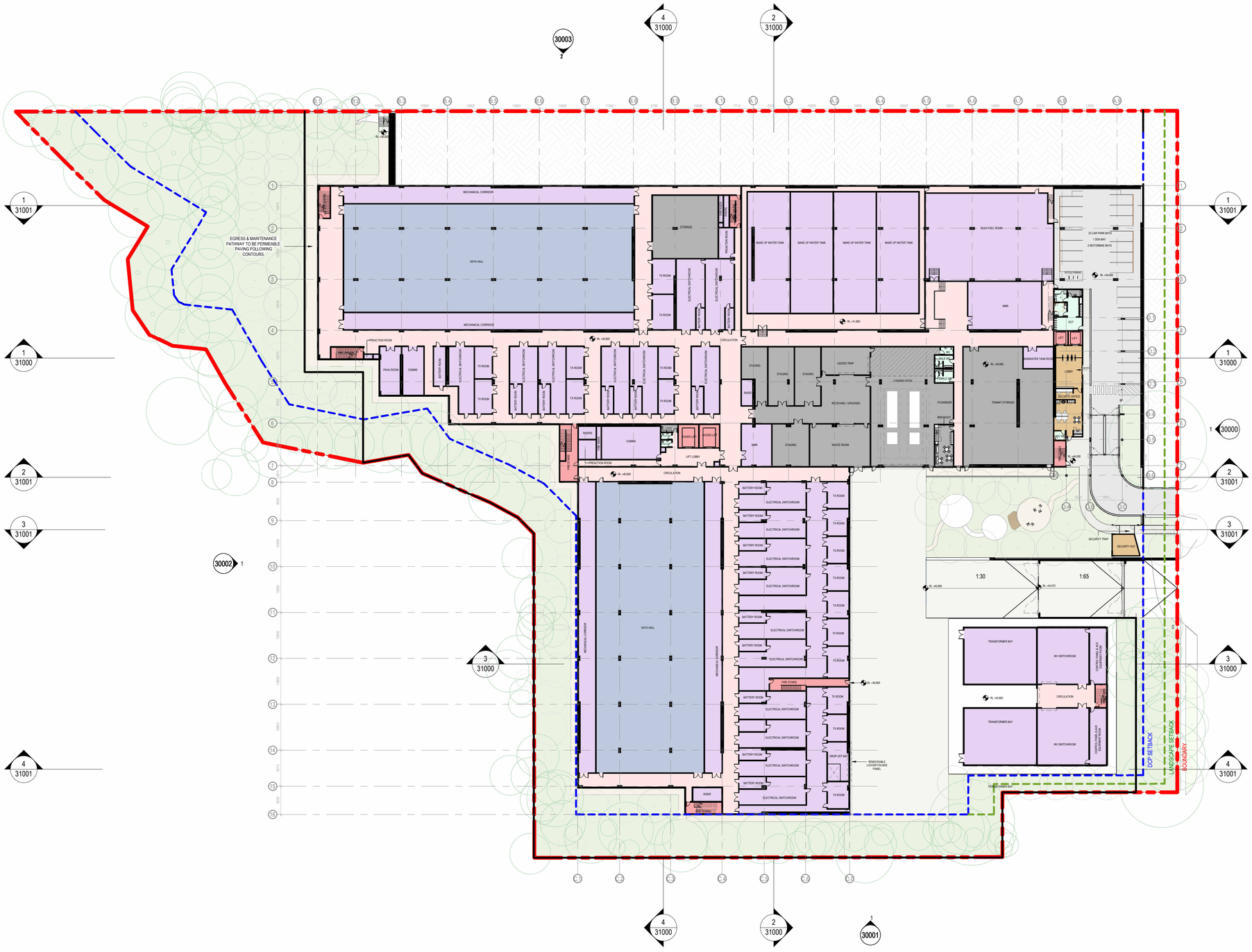
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ISSUE
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PROJECT STATUS
SSDA APPLICATION

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A	ISSUE FOR TOA	17/11/25	HDR	HDR
B	ISSUE FOR FORMAL LODGEMENT	03/12/25	HDR	HDR

LEGEND:

- *BOUNDARY*
- *DCP LANDSCAPE SETBACK*
- *DCP SETBACK*
- *SECURITY FENCE*
- *PROPOSED LANDSCAPE*
- *PROPOSED EGRESS PATHWAY*
- *EXISTING TREES RETAINED*
- *PROPOSED TREES*
- *DATA HALL*
- *PLANT / SERVICES*
- *OFFICE*
- *BACK OF HOUSE / STORAGE*
- *CIRCULATION - HORIZONTAL*
- *CIRCULATION - VERTICAL*
- *AMENITIES*

CLIENT
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PROJECT
PROJECT MARS
12 Mars Rd, Lane Cove West NSW 2066

DRAWING TITLE
GENERAL ARRANGEMENT - GROUND FLOOR PLAN

SCALE
1 : 500 @ A1

PROJECT NUMBER
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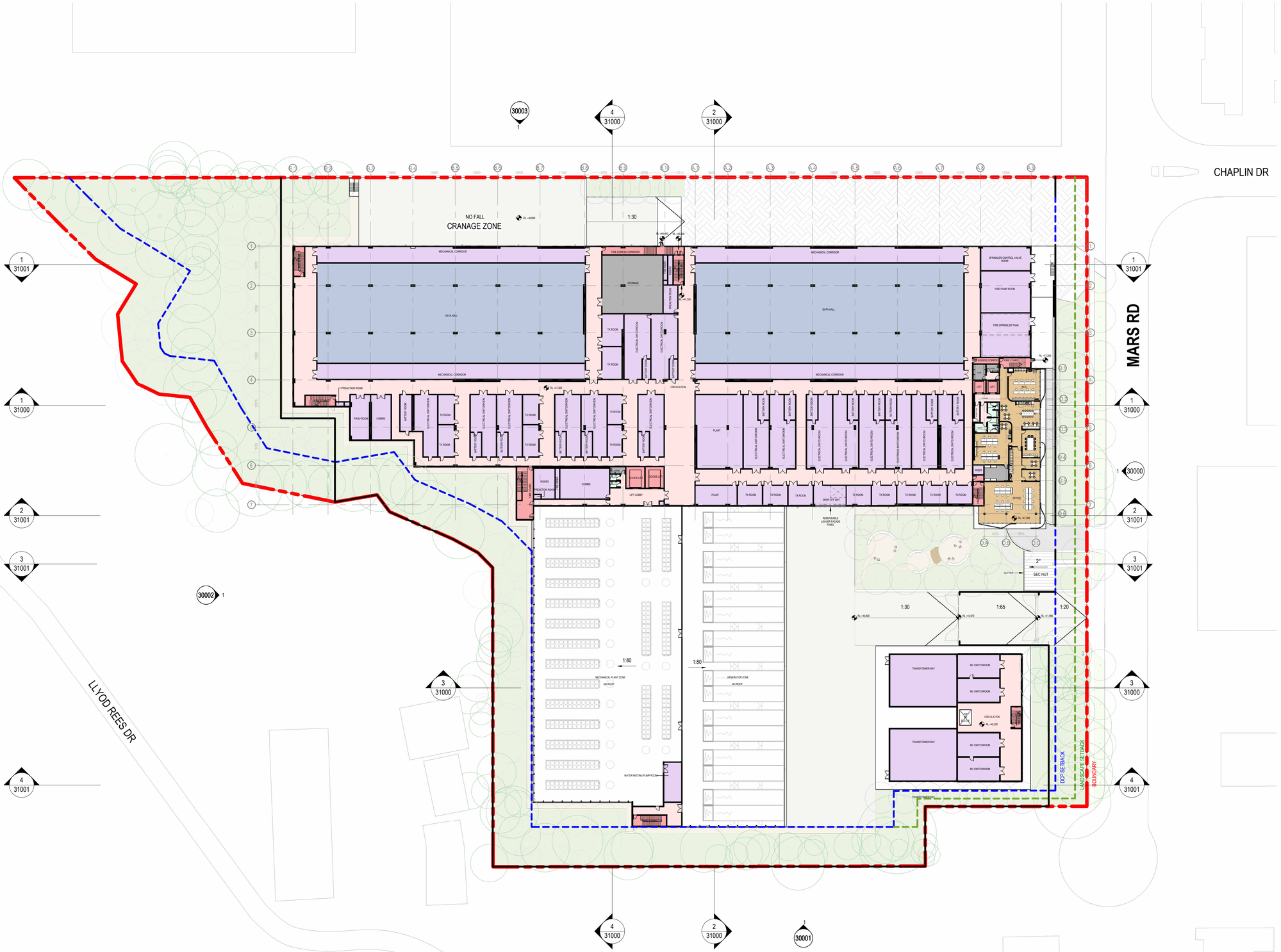
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ISSUE
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PROJECT STATUS
SSDA APPLICATION

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REV	DESCRIPTION OF CHANGE	DATE	CHECKED	ISSUED
A	ISSUE FOR TOA	17/11/25	HDR	HDR
B	ISSUE FOR FORMAL LODGEMENT	03/12/25	HDR	HDR

LEGEND:

- BOUNDARY
- DCP LANDSCAPE SETBACK
- DCP SETBACK
- SECURITY FENCE
- PROPOSED LANDSCAPE
- PROPOSED EGRESS PATHWAY
- EXISTING TREES RETAINED
- PROPOSED TREES
- DATA HALL
- PLANT / SERVICES
- OFFICE
- BACK OF HOUSE / STORAGE
- CIRCULATION - HORIZONTAL
- CIRCULATION - VERTICAL
- AMENITIES

CLIENT
Goodman

PROJECT
PROJECT MARS
12 Mars Rd, Lane Cove West NSW 2066

DRAWING TITLE
GENERAL ARRANGEMENT - LEVEL 1 FLOOR PLAN

SCALE
1 : 500 @ A1

PROJECT NUMBER
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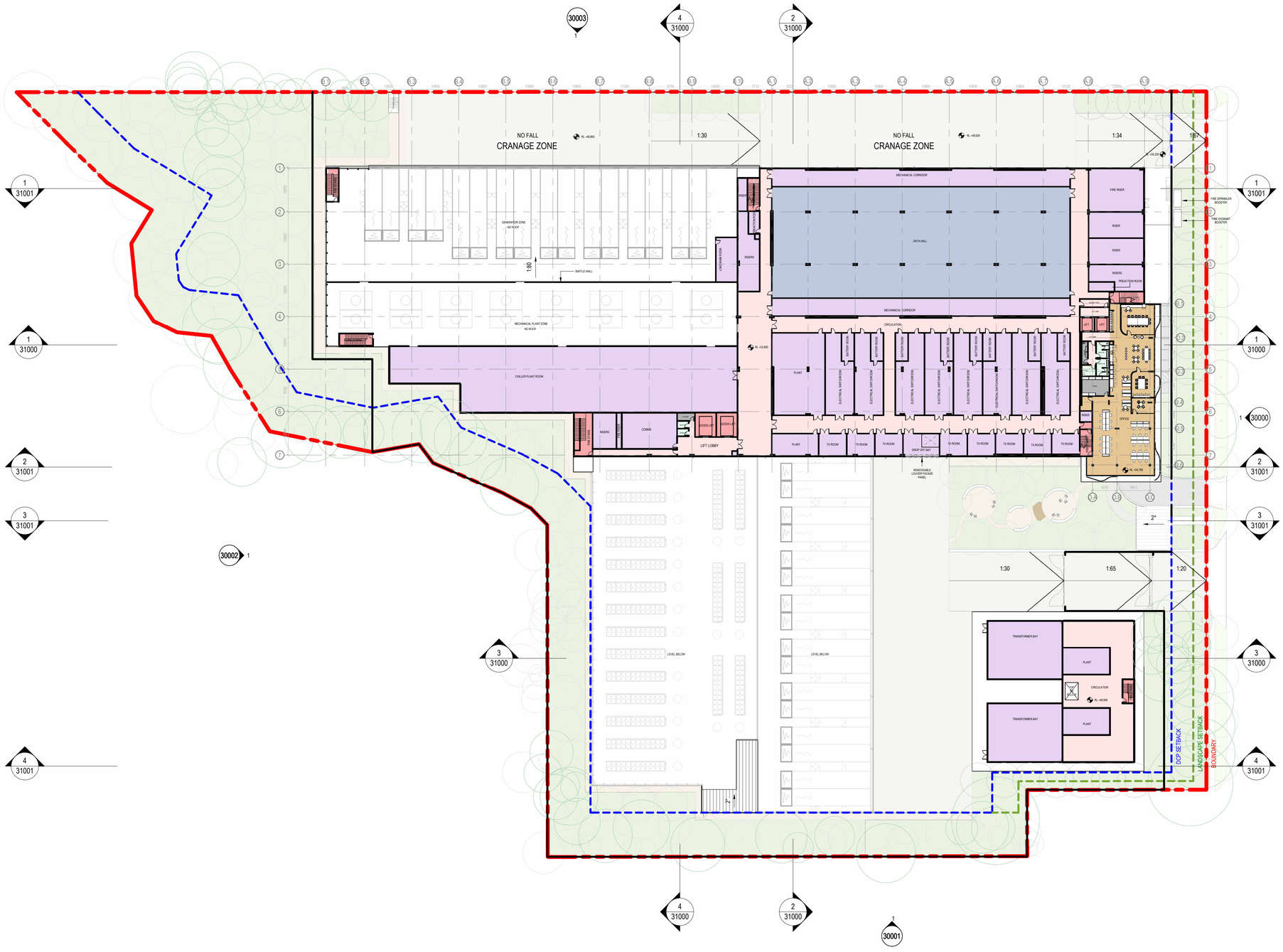
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ISSUE
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PROJECT STATUS
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A	ISSUE FOR TOA	17/11/25	HDR	HDR
B	ISSUE FOR FORMAL LODGEMENT	03/12/25	HDR	HDR

LEGEND:

- BOUNDARY
- DCP LANDSCAPE SETBACK
- DCP SETBACK
- SECURITY FENCE
- PROPOSED LANDSCAPE
- PROPOSED EGRESS PATHWAY
- EXISTING TREES RETAINED
- PROPOSED TREES
- DATA HALL
- PLANT / SERVICES
- OFFICE
- BACK OF HOUSE / STORAGE
- CIRCULATION - HORIZONTAL
- CIRCULATION - VERTICAL
- AMENITIES

CLIENT
Goodman

PROJECT
PROJECT MARS
12 Mars Rd, Lane Cove West NSW 2066

DRAWING TITLE
GENERAL ARRANGEMENT - LEVEL 2 FLOOR PLAN

SCALE
1 : 500 @ A1

PROJECT NUMBER
10417434

DRAWING NUMBER
MAR-AR-DRG-21003

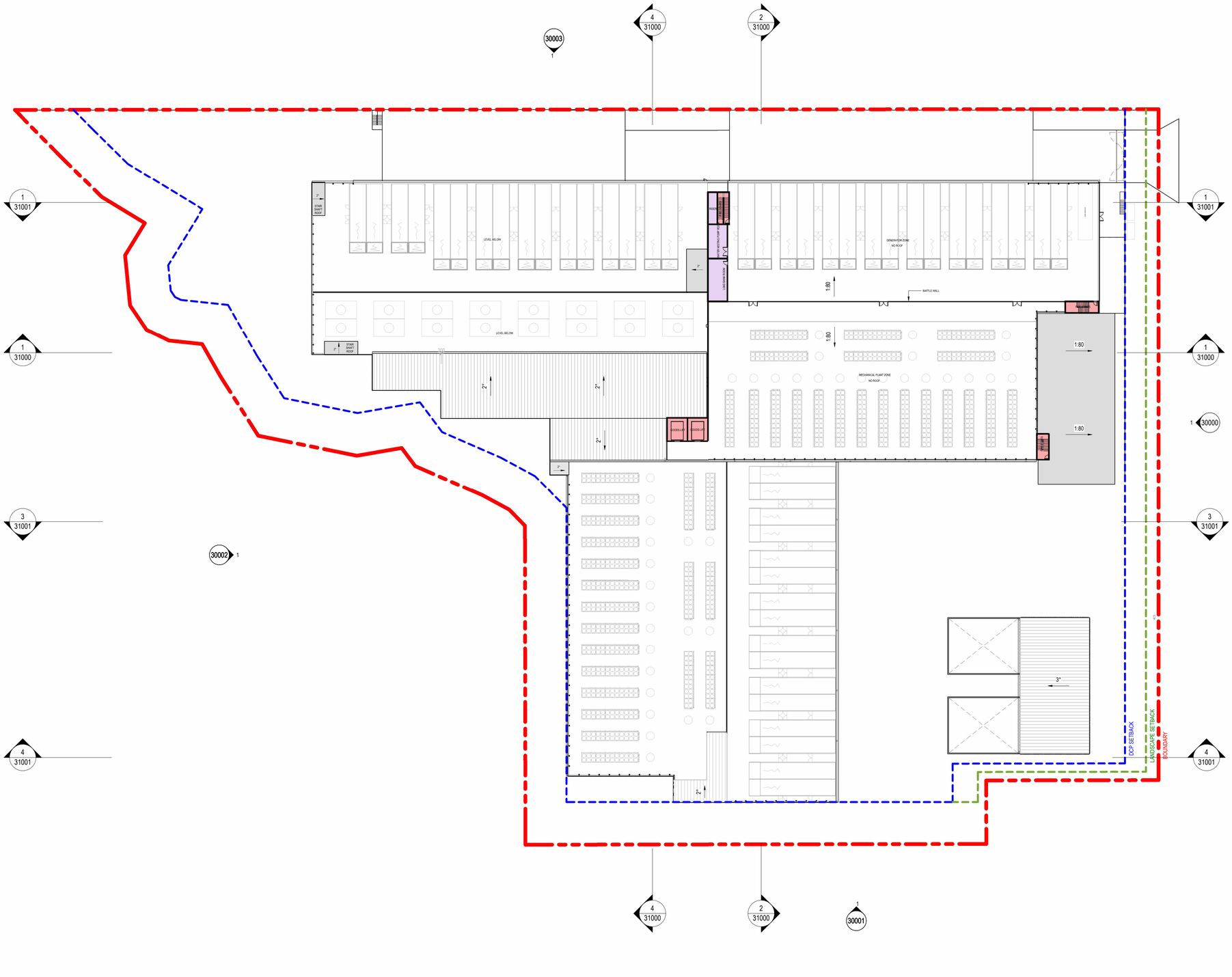
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PROJECT STATUS
SSDA APPLICATION

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B	ISSUE FOR FORMAL LODGEMENT	03/12/25	HDR	HDR

LEGEND:

- BOUNDARY
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- DCP SETBACK
- SECURITY FENCE
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- PROPOSED EGRESS PATHWAY
- EXISTING TREES RETAINED
- PROPOSED TREES
- DATA HALL
- PLANT / SERVICES
- OFFICE
- BACK OF HOUSE / STORAGE
- CIRCULATION - HORIZONTAL
- CIRCULATION - VERTICAL
- AMENITIES

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PROJECT

PROJECT MARS
12 Mars Rd, Lane Cove West NSW 2066

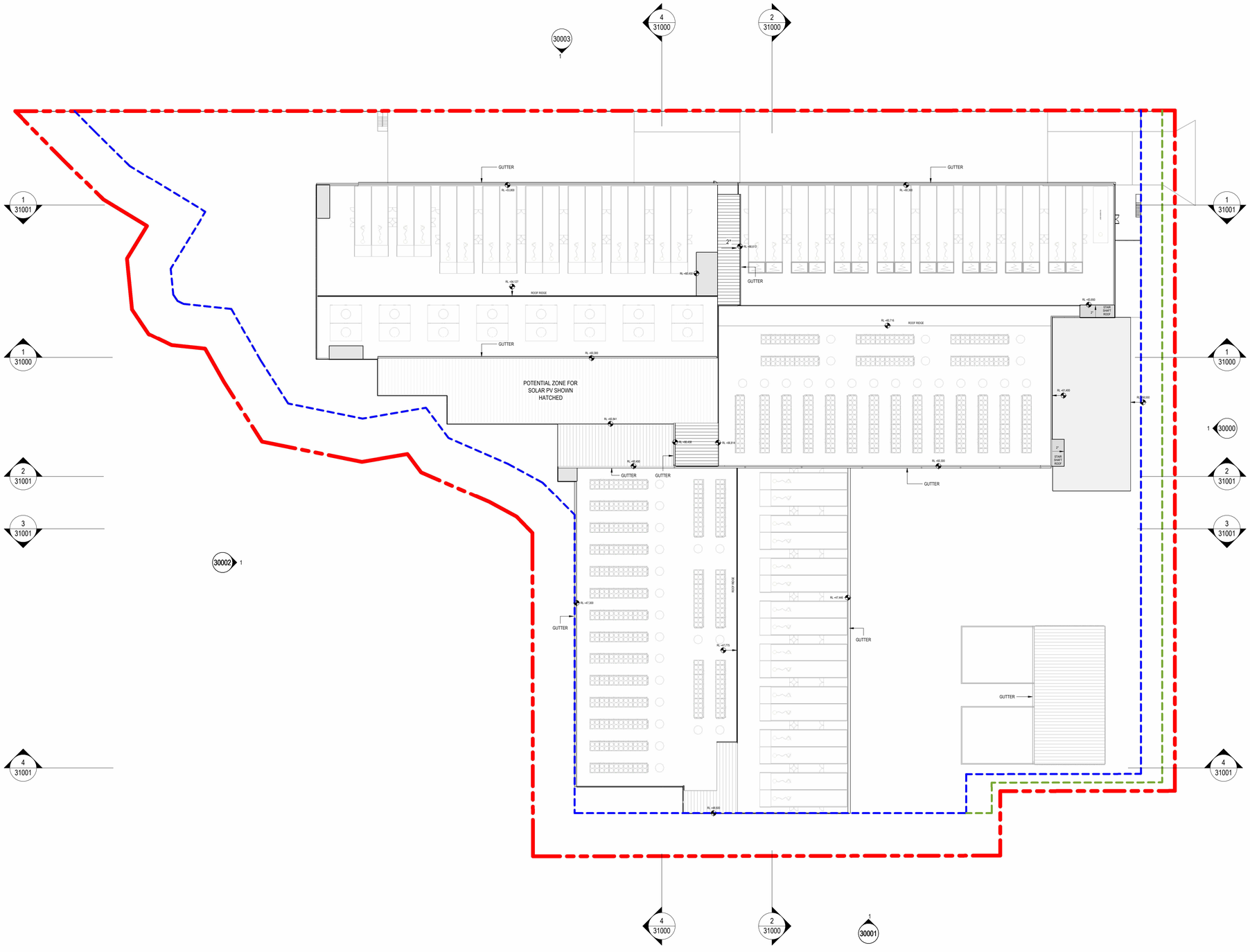
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GENERAL ARRANGEMENT - ROOF PLAN

SCALE: 1 : 500 @ A1
PROJECT NUMBER: 10417434
DRAWING NUMBER: **MAR-AR-DRG-21004**
ISSUE: **B**
PROJECT STATUS: **SSDA APPLICATION**

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LEGEND:

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- DCP SETBACK
- SECURITY FENCE
- PROPOSED LANDSCAPE
- PROPOSED EGRESS PATHWAY
- EXISTING TREES RETAINED
- PROPOSED TREES
- DATA HALL
- PLANT / SERVICES
- OFFICE
- BACK OF HOUSE / STORAGE
- CIRCULATION - HORIZONTAL
- CIRCULATION - VERTICAL
- AMENITIES

CLIENT
Goodman

PROJECT
PROJECT MARS
12 Mars Rd, Lane Cove West NSW 2066

DRAWING TITLE
GENERAL ARRANGEMENT - TOP OF SCREEN

SCALE
1 : 500 @ A1

PROJECT NUMBER
10417434

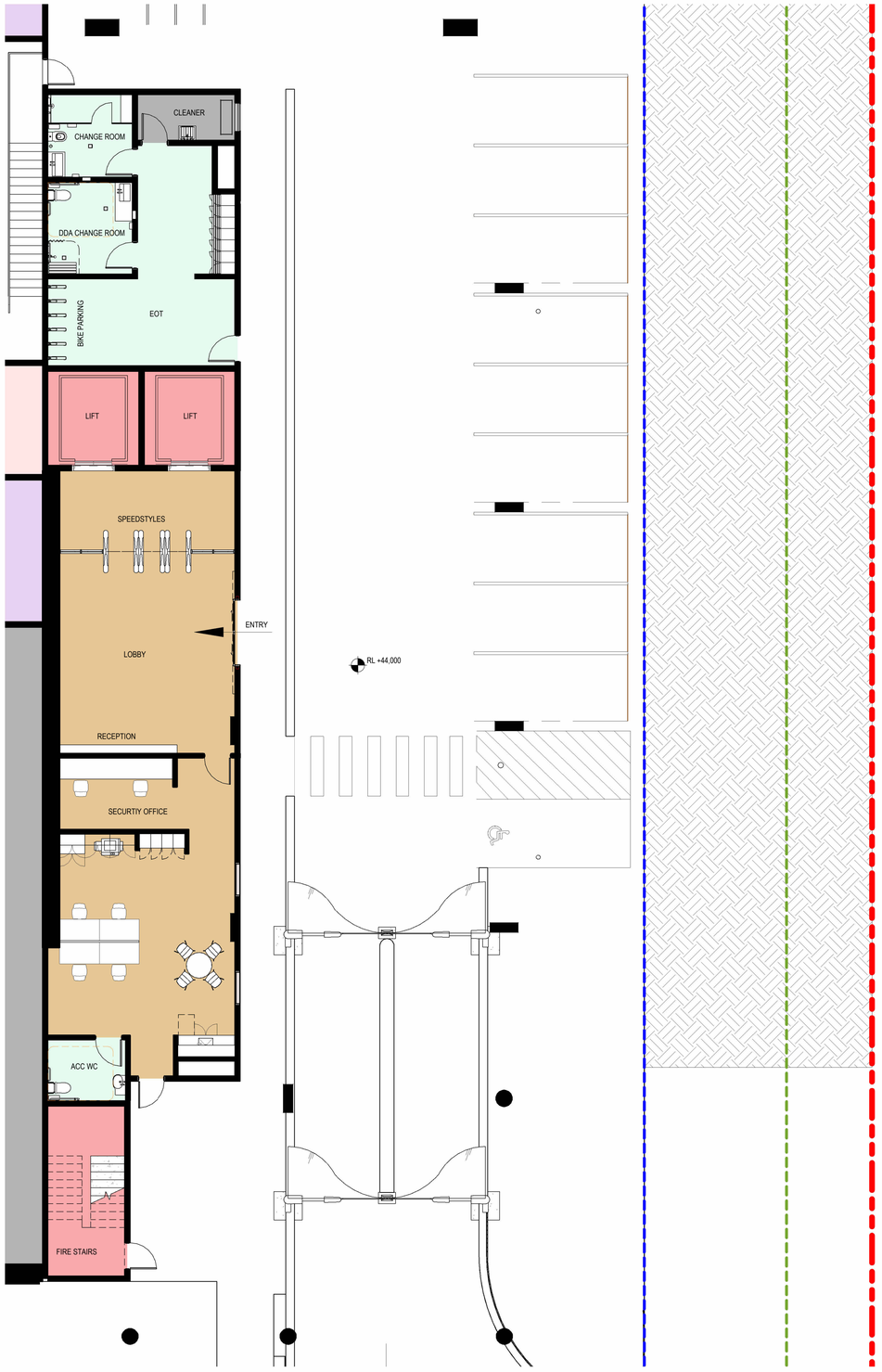
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ISSUE
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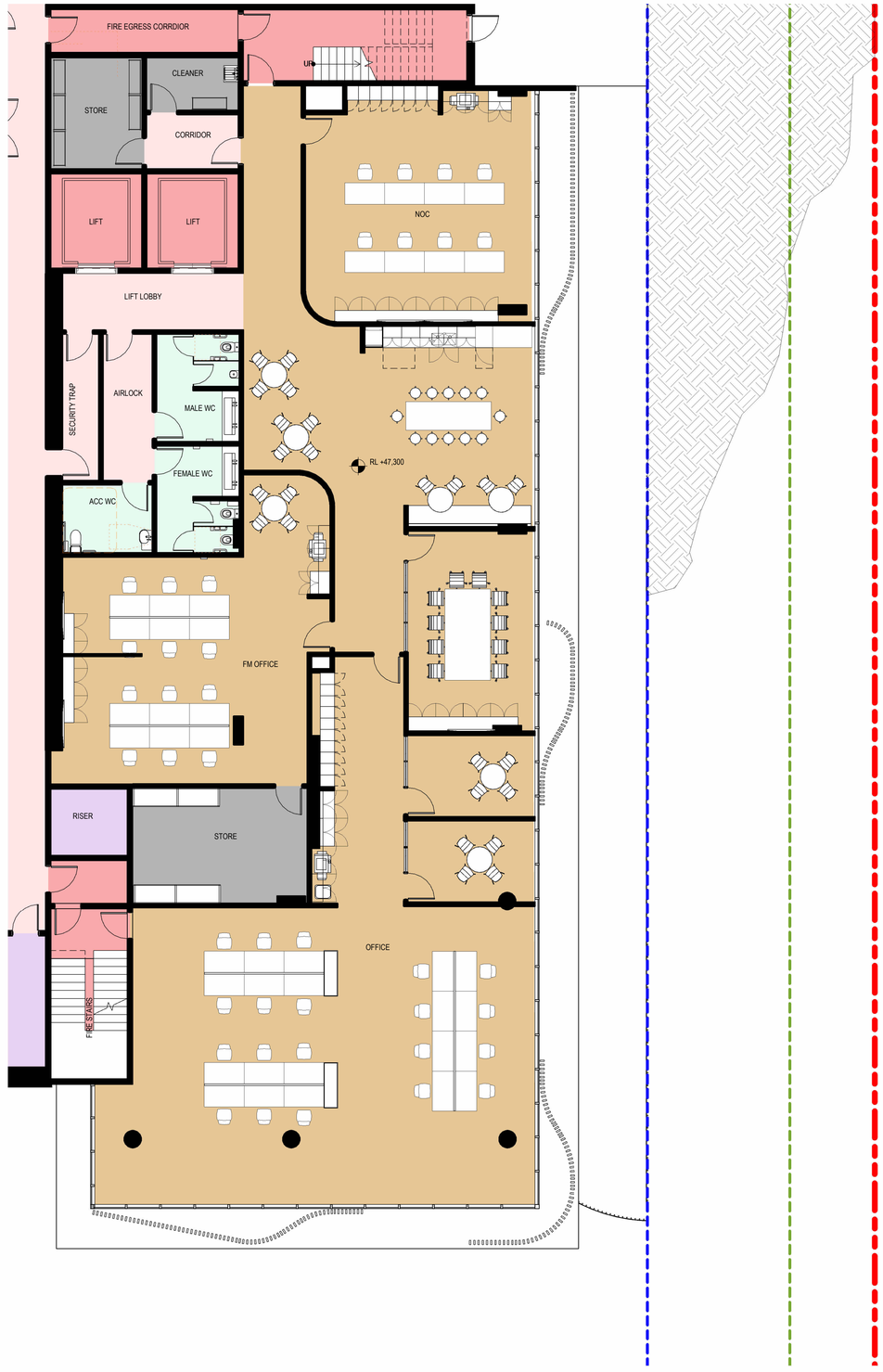
PROJECT STATUS
SSDA APPLICATION

3/12/2025 12:14:06 PM

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1 **OFFICE - GROUND LEVEL**
1 : 100



2 **OFFICE - LEVEL 01**
1 : 100

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ACT Huai Lim 16065

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NORTH POINT

REV	DESCRIPTION OF CHANGE	DATE	CHECKED	ISSUED
A	ISSUE FOR TOA	17/11/25	HDR	HDR
B	ISSUE FOR FORMAL LODGEMENT	03/12/25	HDR	HDR

LEGEND:

- *BOUNDARY*
- *DCP LANDSCAPE SETBACK*
- *DCP SETBACK*
- *SECURITY FENCE*
- *PROPOSED LANDSCAPE*
- *PROPOSED EGRESS PATHWAY*
- *EXISTING TREES RETAINED*
- *PROPOSED TREES*
- *DATA HALL*
- *PLANT / SERVICES*
- *OFFICE*
- *BACK OF HOUSE / STORAGE*
- *CIRCULATION - HORIZONTAL*
- *CIRCULATION - VERTICAL*
- *AMENITIES*

CLIENT
Goodman

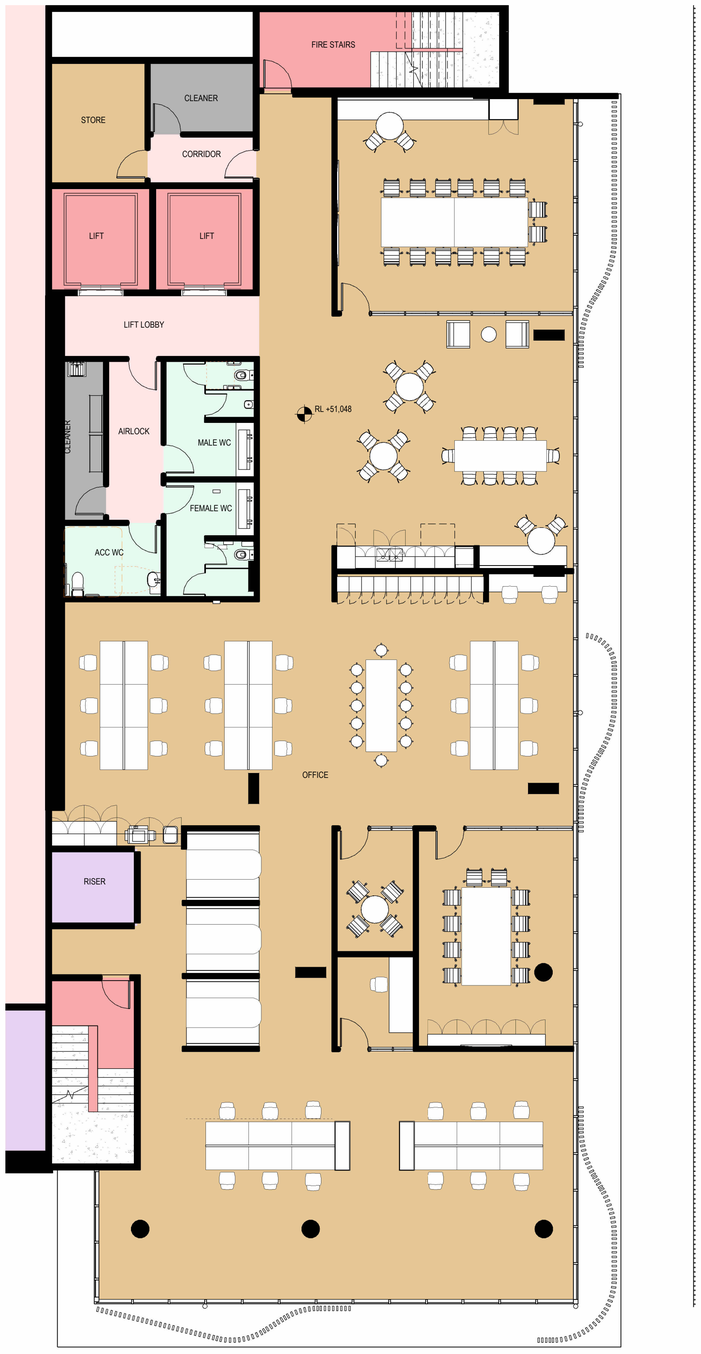
PROJECT
PROJECT MARS
12 Mars Rd, Lane Cove West NSW 2066

DRAWING TITLE
GENERAL ARRANGEMENT - OFFICE - GROUND & LEVEL 01

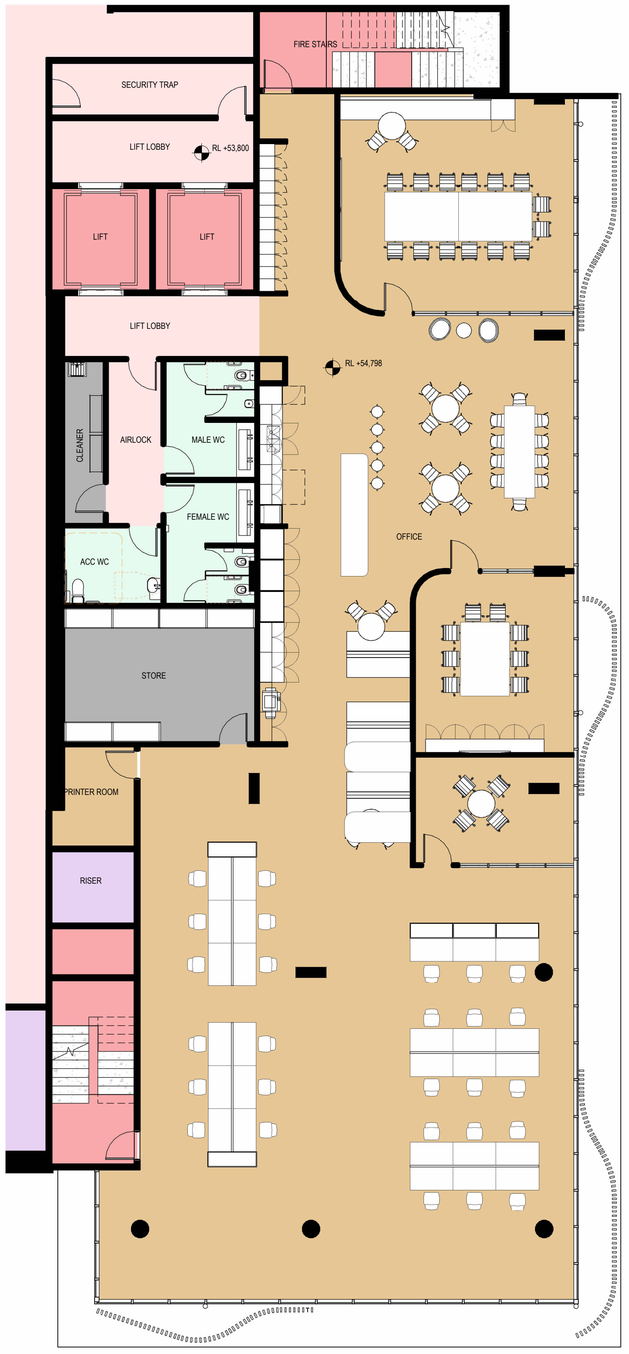
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PROJECT NUMBER: 10417434
DRAWING NUMBER: **MAR-AR-DRG-21006**
ISSUE: **B**
PROJECT STATUS: **SSDA APPLICATION**

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Autodesk Docs://10417434 Goodman 12 Mars Rd SSD/MAR-HDR-AR-R24_BLD.rvt



1 **OFFICE - LEVEL 02**
1 : 100



2 **OFFICE - LEVEL 03**
1 : 100

Level 24, 25 Martin Place, Sydney NSW, 2000, Australia
+61 2 9956 2666 | hdrinc.com
HDR Pty. Limited ABN 76 158 075 220 trading as HDR

NOMINATED ARCHITECTS:
NSW Huai Lim DR16065, D. Joe Mihaljevic 8699, Mark Gazy 7289, Simon Fleet 8363
VIC HDR Pty Ltd 51752
ACT Huai Lim 16065

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NORTH POINT

REV	DESCRIPTION OF CHANGE	DATE	CHECKED	ISSUED
A	ISSUE FOR TOA	17/11/25	HDR	HDR
B	ISSUE FOR FORMAL LODGEMENT	03/12/25	HDR	HDR

LEGEND:

- *BOUNDARY*
- *DCP LANDSCAPE SETBACK*
- *DCP SETBACK*
- *SECURITY FENCE*
- *PROPOSED LANDSCAPE*
- *PROPOSED EGRESS PATHWAY*
- *EXISTING TREES RETAINED*
- *PROPOSED TREES*
- *DATA HALL*
- *PLANT / SERVICES*
- *OFFICE*
- *BACK OF HOUSE / STORAGE*
- *CIRCULATION - HORIZONTAL*
- *CIRCULATION - VERTICAL*
- *AMENITIES*

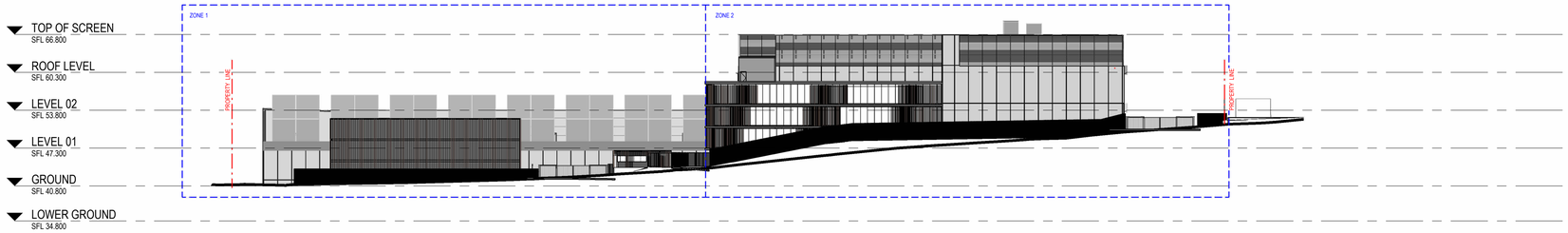
CLIENT
Goodman

PROJECT
PROJECT MARS
12 Mars Rd, Lane Cove West NSW 2066

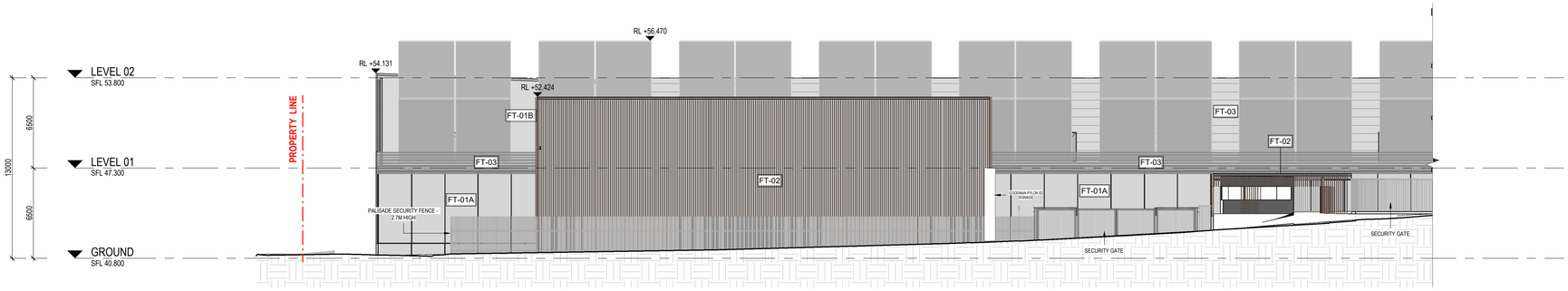
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GENERAL ARRANGEMENT - OFFICE - LEVEL 2 & 3

SCALE
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DRAWING NUMBER
MAR-AR-DRG-21007
ISSUE
B
PROJECT STATUS
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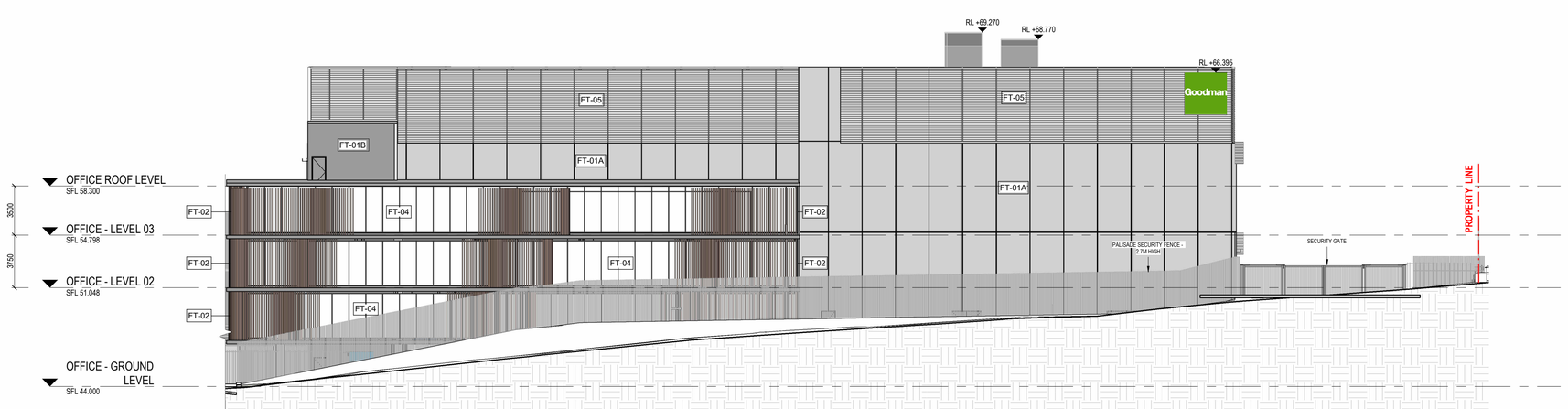
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1 NORTH ELEVATION
1 : 500



2 NORTH ELEVATION - ZONE 1
1 : 200



3 NORTH ELEVATION - ZONE 2
1 : 200

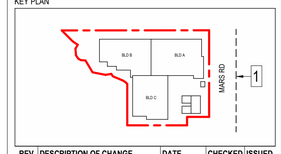
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NOMINATED ARCHITECTS:
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VIC HDR Pty Ltd 51752
ACT Huai Lim 16065

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KEY PLAN



REV	DESCRIPTION OF CHANGE	DATE	CHECKED	ISSUED
A	ISSUE FOR TOA	17/11/25	HDR	HDR
B	ISSUE FOR FORMAL LODGEMENT	03/12/25	HDR	HDR

MATERIAL LEGEND

FT-01	FT-01A	PRECAST CONCRETE PANELS WITH VERTICAL RIBBING
	FT-01B	PRECAST CONCRETE PANELS
FT-02		METAL SCREEN BATTENS ON EXPOSED CONCRETE SLAB EDGES
FT-03		HORIZONTAL METAL CORRUGATED CLADDING
FT-04		CLEAR GLASS, ALUMINIUM FRAME
FT-05		HORIZONTAL METAL LOUVRE SCREEN
FT-06		MESH WITH VERTICAL CABLES FOR PLANTING
FT-07		LARGE PROFILE METAL ROOFING

CLIENT
Goodman

PROJECT
PROJECT MARS
12 Mars Rd, Lane Cove West NSW 2066

DRAWING TITLE
NORTH ELEVATION

SCALE
As indicated @ A1

PROJECT NUMBER
10417434

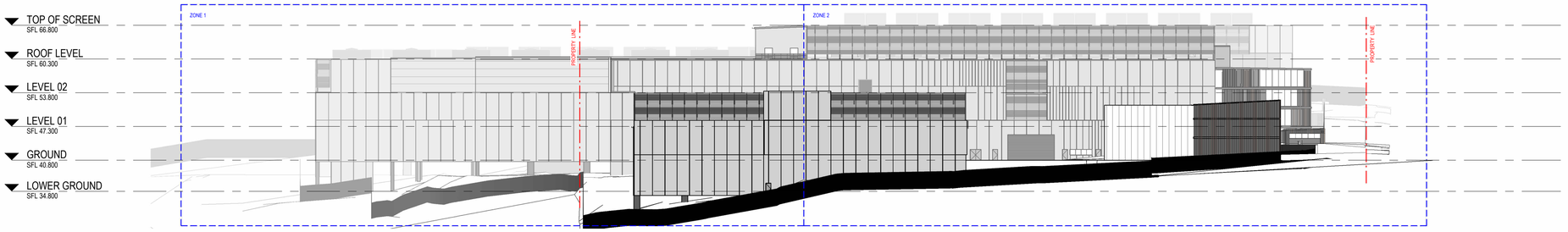
DRAWING NUMBER
MAR-AR-DRG-30000

ISSUE
B

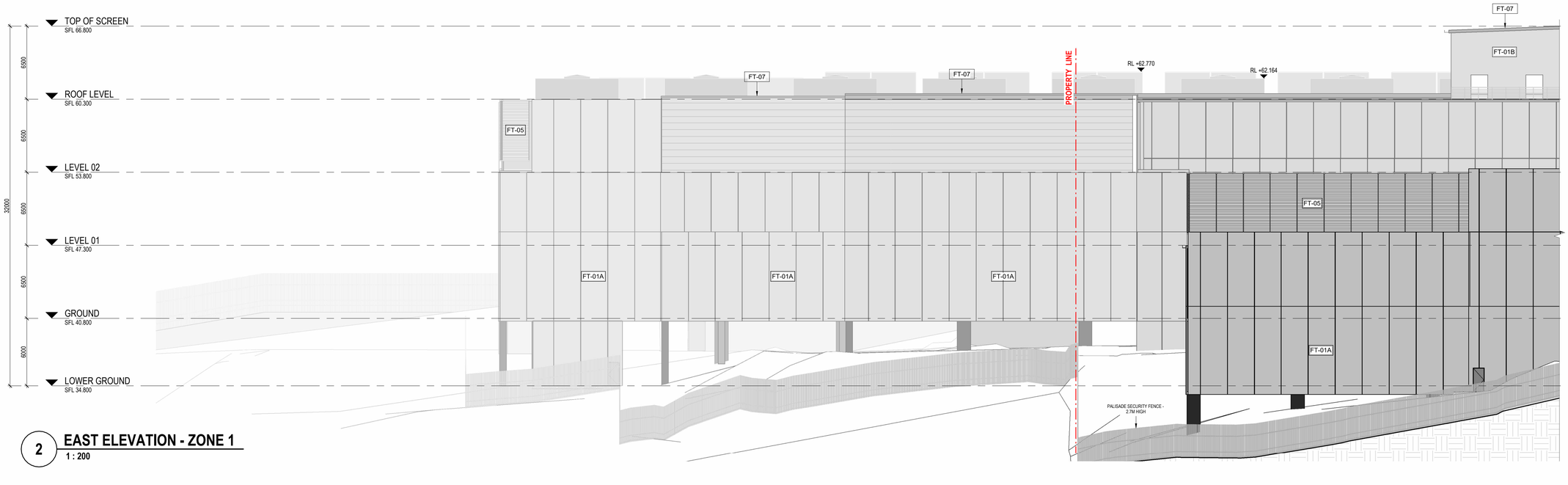
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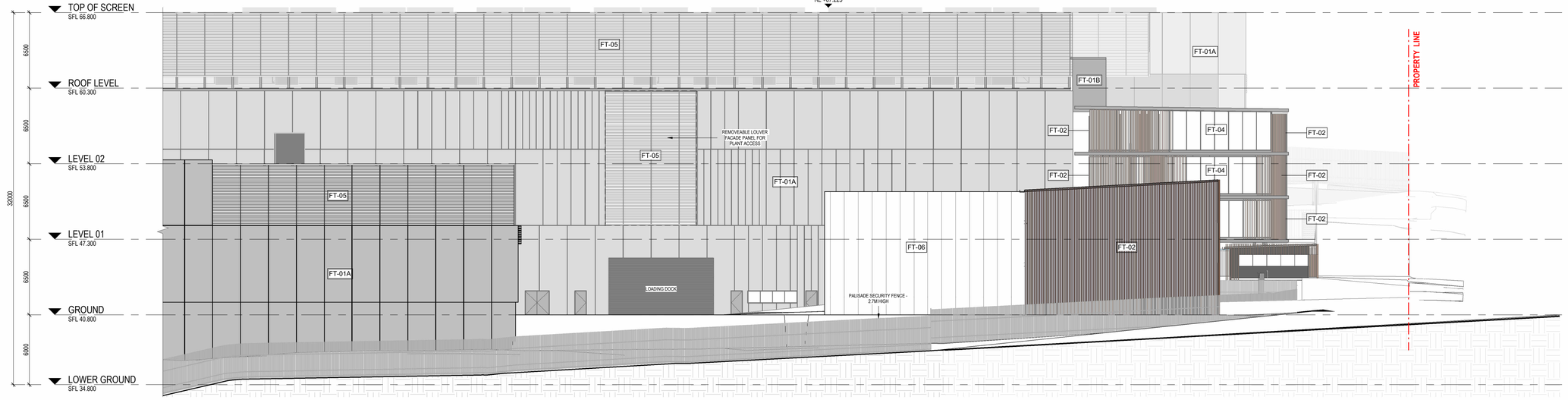
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1 EAST ELEVATION
1 : 500



2 EAST ELEVATION - ZONE 1
1 : 200



3 EAST ELEVATION - ZONE 2
1 : 200

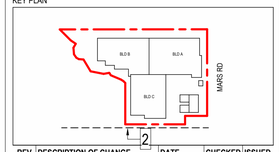
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B	ISSUE FOR FORMAL LODGEMENT	03/12/25	HDR	HDR

MATERIAL LEGEND

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	FT-01B	PRECAST CONCRETE PANELS
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FT-04		CLEAR GLASS, ALUMINIUM FRAME
FT-05		HORIZONTAL METAL LOUVRE SCREEN
FT-06		MESH WITH VERTICAL CABLES FOR PLANTING
FT-07		LARGE PROFILE METAL ROOFING

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PROJECT
PROJECT MARS
12 Mars Rd, Lane Cove West NSW 2066

DRAWING TITLE
EAST ELEVATION

SCALE
As indicated @ A1

PROJECT NUMBER
10417434

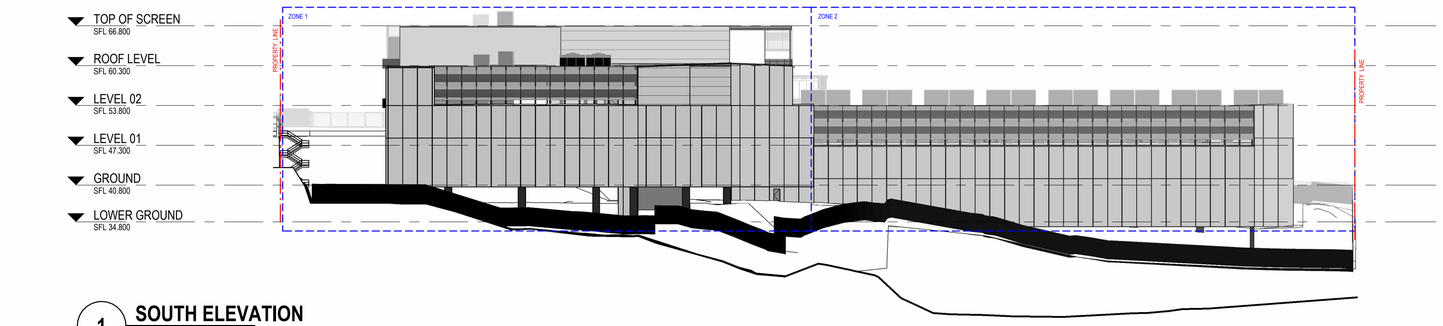
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MAR-AR-DRG-30001

ISSUE
B

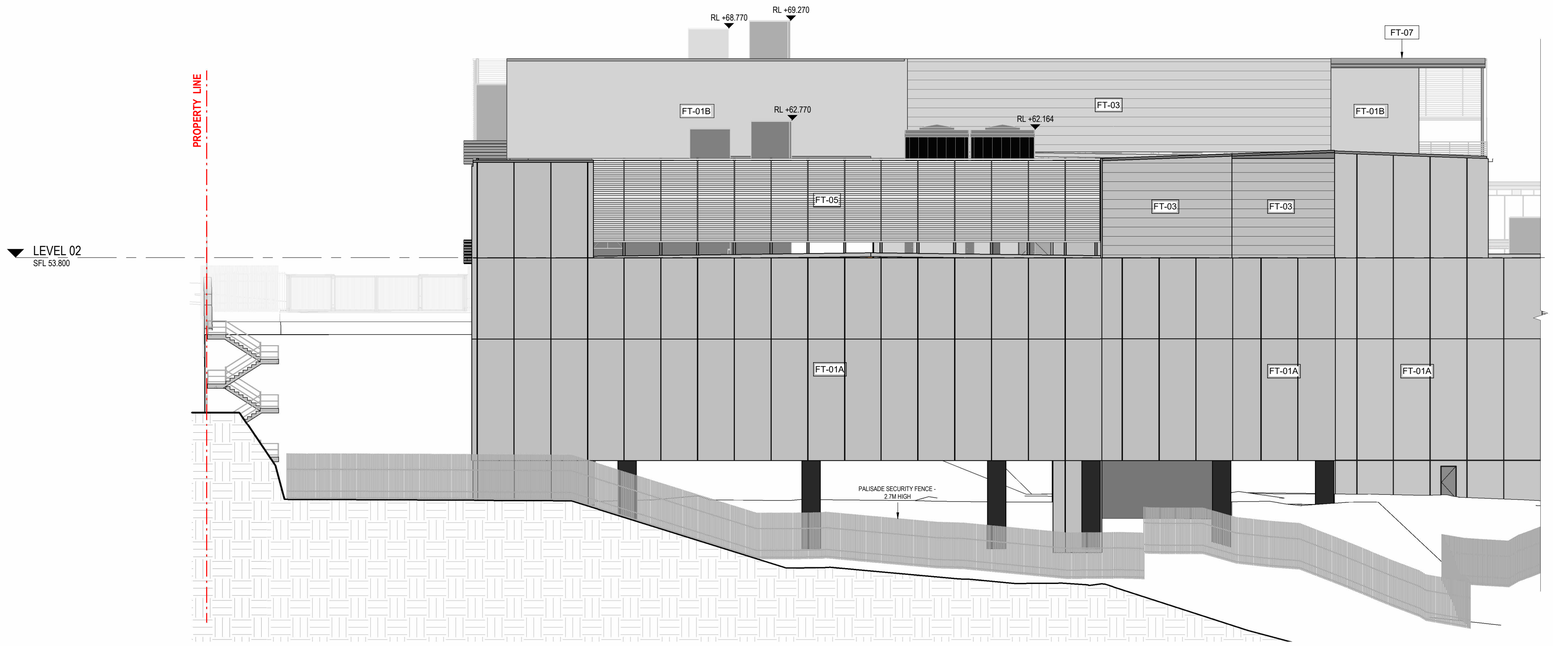
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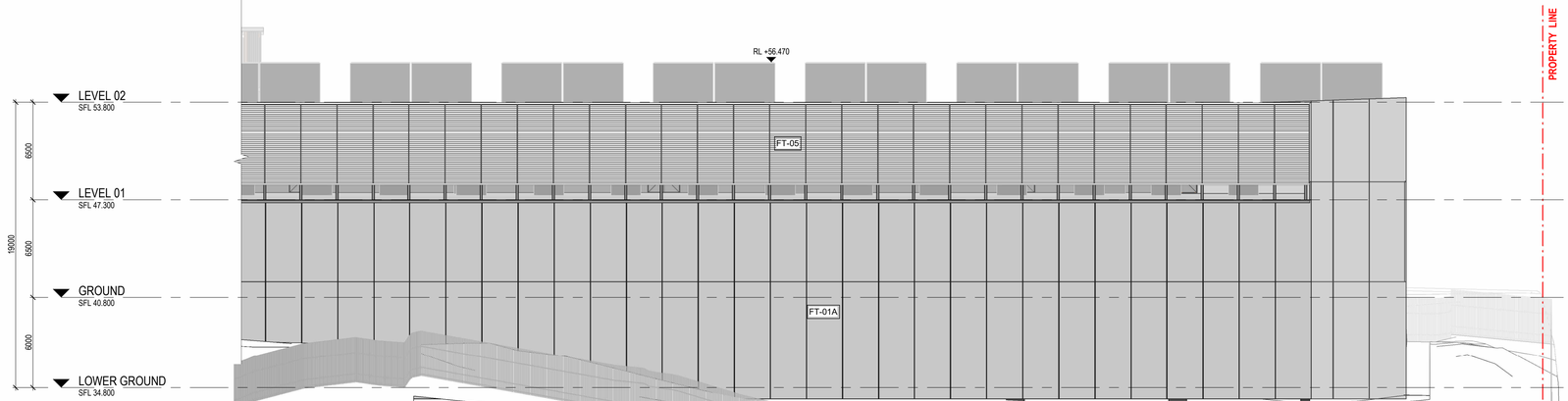
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1 SOUTH ELEVATION
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2 SOUTH ELEVATION - ZONE 1
1 : 200



3 SOUTH ELEVATION - ZONE 2
1 : 200

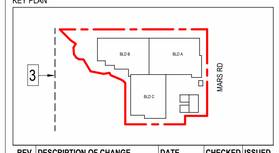
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KEY PLAN



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B	ISSUE FOR FORMAL LODGEMENT	03/12/25	HDR	HDR

MATERIAL LEGEND

FT-01	FT-01A	PRECAST CONCRETE PANELS WITH VERTICAL RIBBING
	FT-01B	PRECAST CONCRETE PANELS
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FT-03		HORIZONTAL METAL CORRUGATED CLADDING
FT-04		CLEAR GLASS, ALUMINIUM FRAME
FT-05		HORIZONTAL METAL LOUVRE SCREEN
FT-06		MESH WITH VERTICAL CABLES FOR PLANTING
FT-07		LARGE PROFILE METAL ROOFING

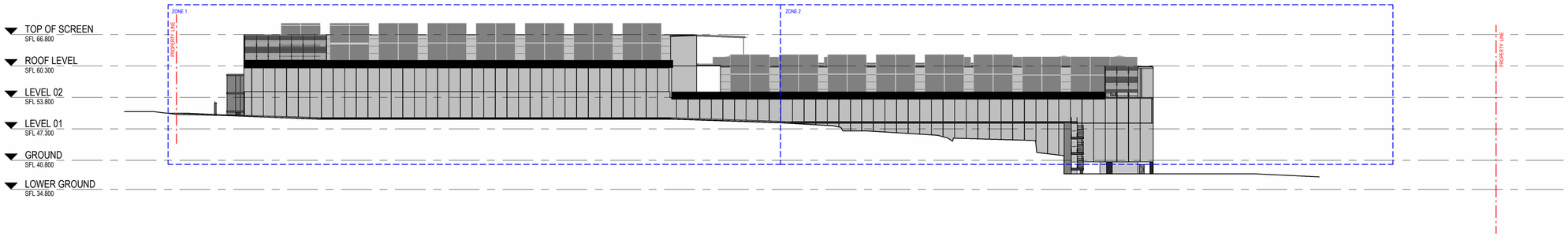
CLIENT
Goodman

PROJECT
PROJECT MARS
12 Mars Rd, Lane Cove West NSW 2066

DRAWING TITLE
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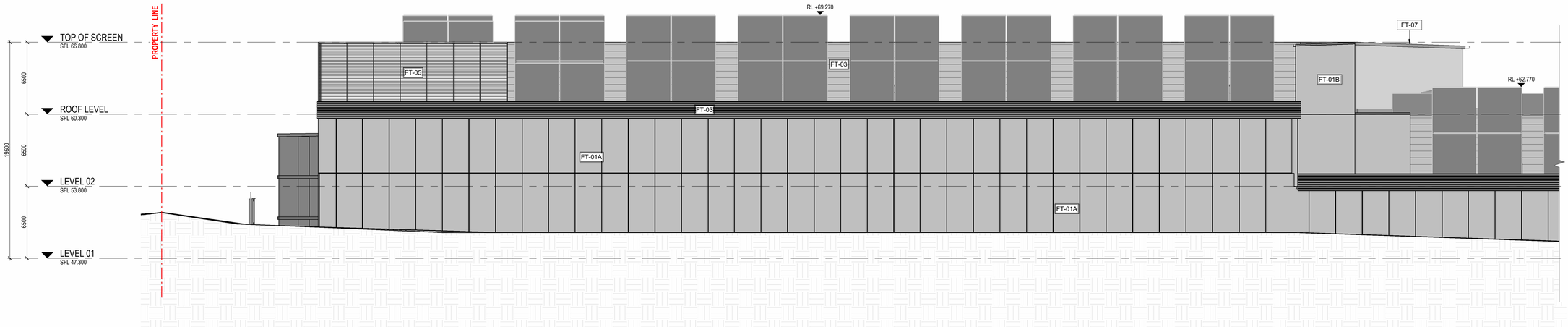
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10417434
DRAWING NUMBER
MAR-AR-DRG-30002
ISSUE
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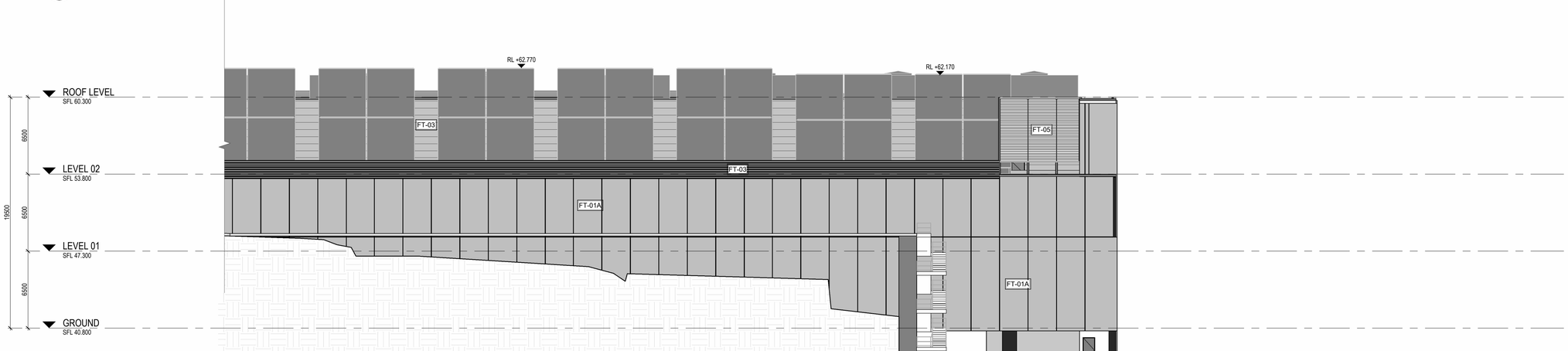
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2 WEST ELEVATION - ZONE 1

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3 WEST ELEVATION - ZONE 2

1 : 200

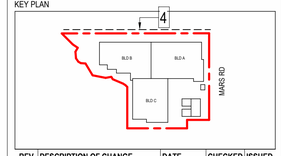
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HDR Pty. Limited ABN 76 158 075 220 trading as HDR

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VIC HDR Pty Ltd 51752
ACT Huai Lim 16065

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KEY PLAN



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B	ISSUE FOR FORMAL LODGEMENT	03/12/25	HDR	HDR

MATERIAL LEGEND

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	FT-01B	PRECAST CONCRETE PANELS
FT-02		METAL SCREEN BATTENS ON EXPOSED CONCRETE SLAB EDGES
FT-03		HORIZONTAL METAL CORRUGATED CLADDING
FT-04		CLEAR GLASS, ALUMINIUM FRAME
FT-05		HORIZONTAL METAL LOUVRE SCREEN
FT-06		MESH WITH VERTICAL CABLES FOR PLANTING
FT-07		LARGE PROFILE METAL ROOFING

CLIENT

Goodman

PROJECT

PROJECT MARS
12 Mars Rd, Lane Cove West NSW 2066

DRAWING TITLE

WEST ELEVATION

SCALE
As indicated @ A1

PROJECT NUMBER
10417434

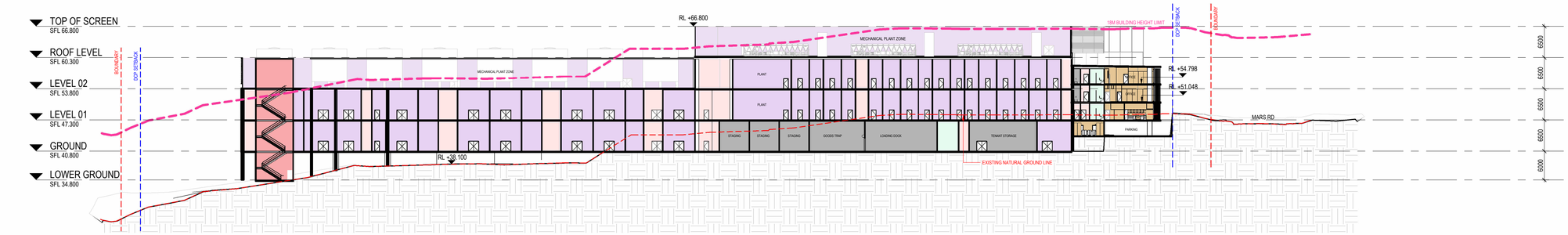
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ISSUE
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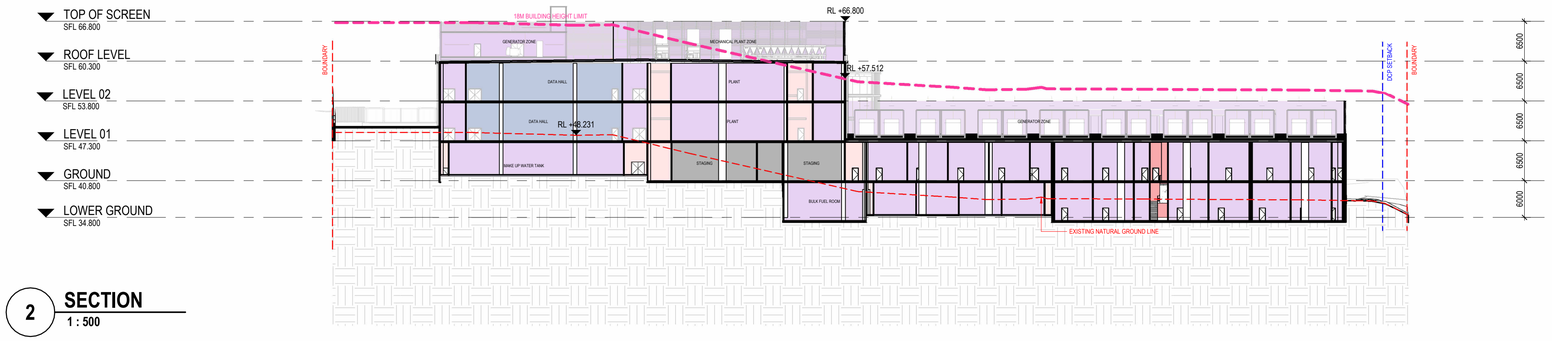
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SSDA APPLICATION

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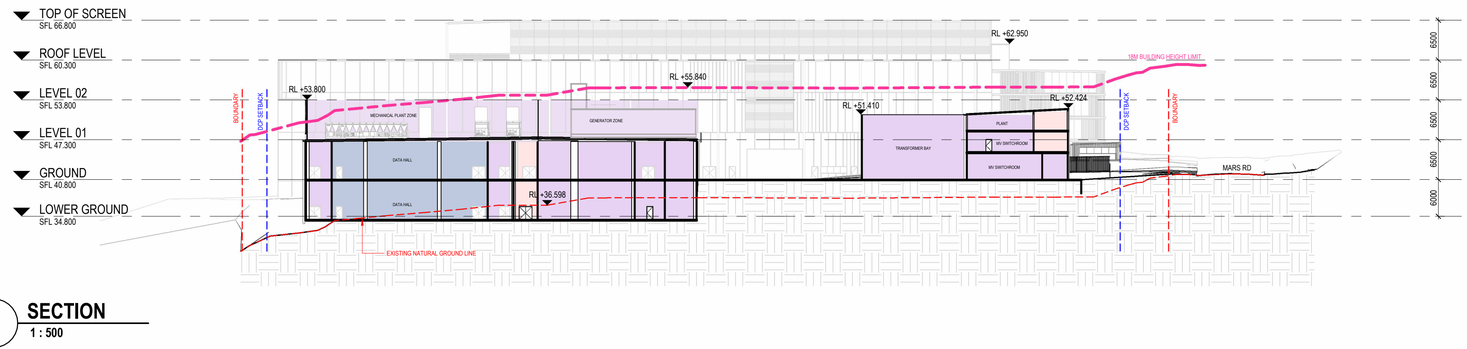
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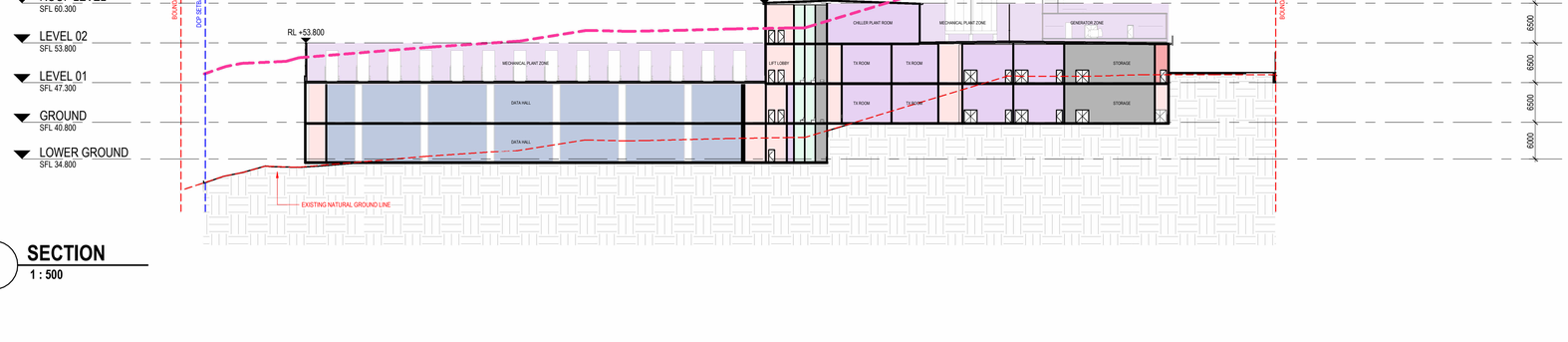
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2 SECTION
1 : 500



3 SECTION
1 : 500



4 SECTION
1 : 500

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A	ISSUE FOR TOA	17/11/25	HDR	HDR
B	ISSUE FOR FORMAL LODGEMENT	03/12/25	HDR	HDR

LEGEND:

- BOUNDARY
- DCP LANDSCAPE SETBACK
- DCP SETBACK
- DATA HALL
- PLANT / SERVICES
- OFFICE
- BACK OF HOUSE / STORAGE
- CIRCULATION - HORIZONTAL
- CIRCULATION - VERTICAL
- AMENITIES

CLIENT
Goodman

PROJECT
PROJECT MARS
12 Mars Rd, Lane Cove West NSW 2066

DRAWING TITLE
SECTIONS SHEET 1 OF 2

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PROJECT NUMBER
10417434

DRAWING NUMBER
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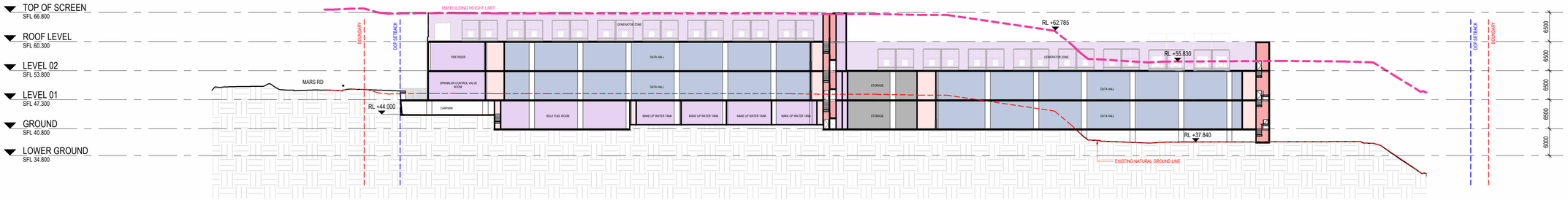
ISSUE
B

PROJECT STATUS
SSDA APPLICATION

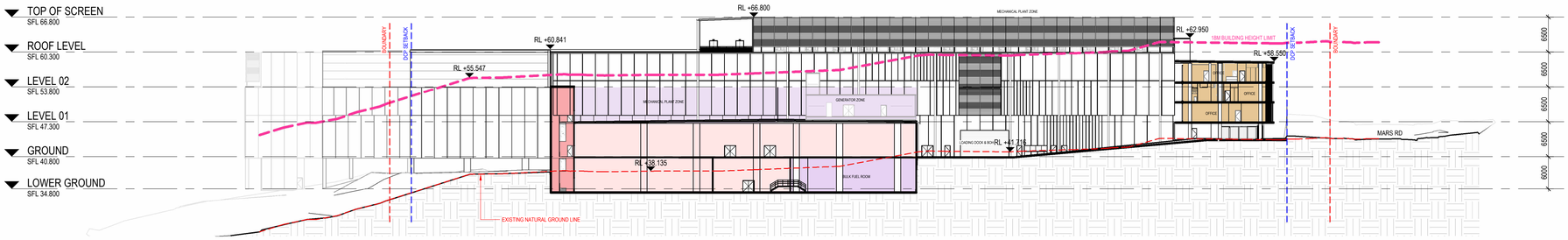
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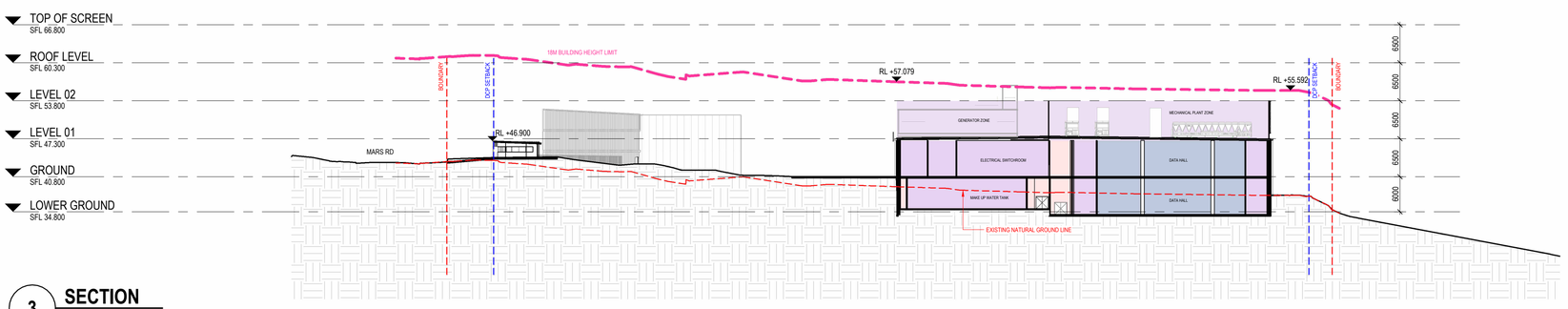
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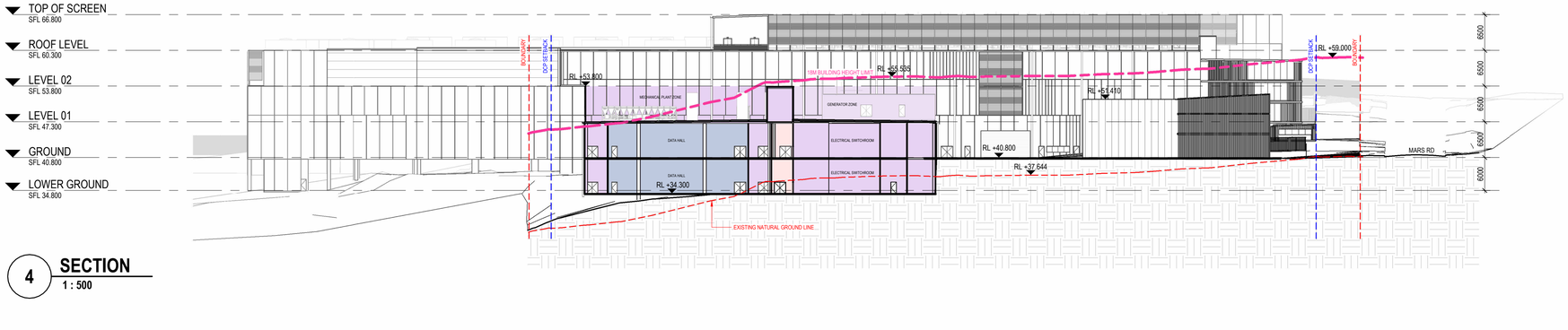
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2 SECTION
1 : 500



3 SECTION
1 : 500



4 SECTION
1 : 500

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ACT Huai Lim 16065

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REV	DESCRIPTION OF CHANGE	DATE	CHECKED	ISSUED
A	ISSUE FOR TOA	17/11/25	HDR	HDR
B	ISSUE FOR FORMAL LODGEMENT	03/12/25	HDR	HDR

LEGEND:

- BOUNDARY
- DCP LANDSCAPE SETBACK
- DCP SETBACK
- DATA HALL
- PLANT / SERVICES
- OFFICE
- BACK OF HOUSE / STORAGE
- CIRCULATION - HORIZONTAL
- CIRCULATION - VERTICAL
- AMENITIES

CLIENT
Goodman

PROJECT
PROJECT MARS
12 Mars Rd, Lane Cove West NSW 2066

DRAWING TITLE
SECTIONS SHEET 2 OF 2

SCALE
1 : 500 @ A1

PROJECT NUMBER
10417434

DRAWING NUMBER
MAR-AR-DRG-31001

ISSUE
B

PROJECT STATUS
SSDA APPLICATION

3/12/2025 11:39:27 AM

Autodesk Docs://10417434 Goodman 12 Mars Rd SSD/MAR-HDR-AR-R21_BLD.rvt

Goodman

S1 Site ID
Illuminated

A Plinth
Concrete Plinth - poured in situ. Allow for adequate fixings to substructure. Allow for power reticulation to all locations.

B Panel
Aluminium fascia, fabricated to 10mm thickness. Secured to substructure with countersunk fixings, painted to match external surface.

C Text
Profile cut letterforms + logo, face filled with opal acrylic and backlit. Letterforms to be flush with signform. LED units to be 4000K, evenly lit with no visible hot spotting.

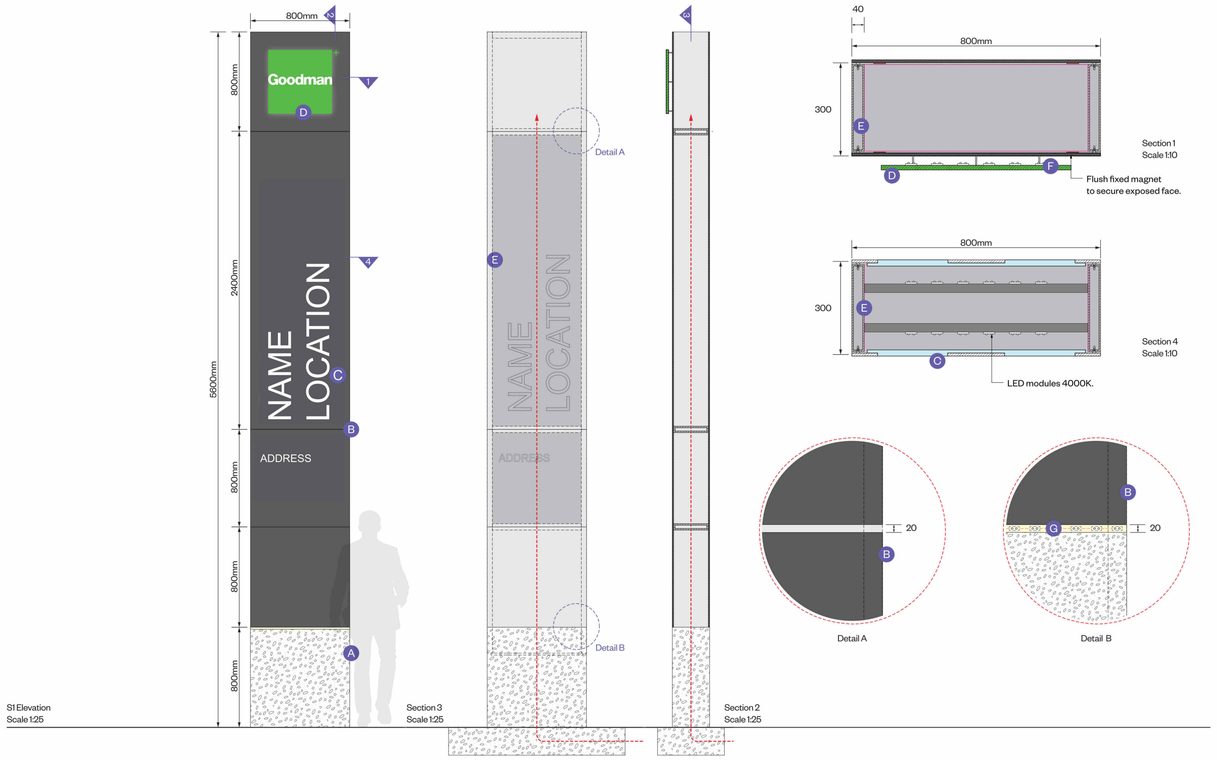
D Logo
10mm thick acrylic profile cut logo, pinfixed off steel substrate. Backlit with LED modules as required.

E Structure
No. 5mm THK galvanised steel RHS.
Cross-bracing to be determined by builder.

F LED
Modules to flush rear of 'Goodman' logo. LED to be 4000K, evenly lit with no visible hot spotting.

G Base LED
Aluminium channel with flush faced opal acrylic - mounted flush to extrernal surface of sign form. LED units to be 4000K, evenly lit with no visible hot spotting.

I



Detail A

Detail B

S5 Lightbox

Sign Case
Material: Fabricated aluminium sign case.
'Flexface' extrusion with self tensioning banner system.
Structural design of supporting frame to local Engineer's specifications.

Finish: Two pack polyurethane paint.
To match corporate colour.
All internal surface painted white.

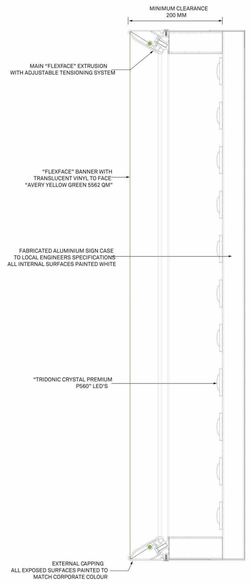
Illumination: "Tridonic Atco" LEDs.
Note: 'Tridonic Atco' specifications regarding maximum placement distance to prevent voltage drop.

'Flexface' face
Material: Backlit 'Flexface' PVC
Fixed to sign case extrusion by appropriate method.

Finish: Translucent vinyl film
Laminated to face of 'Flexface' PVC.
Colour 'Avery Yellow Green 5562 QM'.
The 'Goodman lettering is cut out of film allowing it to illuminate white.



Elevation



Section

Level 24, 25 Martin Place, Sydney NSW, 2000, Australia
+61 2 9956 2666 | hdrinc.com
HDR Pty. Limited ABN 76 158 075 220 trading as HDR

NOMINATED ARCHITECTS:
NSW Huai Lim DR16065, D. Joe Mihaljevic 8699, Mark Gazy 7289, Simon Fleet 8363
VIC HDR Pty Ltd 51752
ACT Huai Lim 16065

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REV	DESCRIPTION OF CHANGE	DATE	CHECKED	ISSUED
A	ISSUE FOR TOA	17/11/25	HDR	HDR
B	ISSUE FOR FORMAL LODGEMENT	03/12/25	HDR	HDR

CLIENT
Goodman

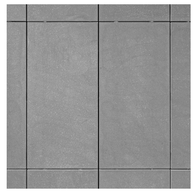
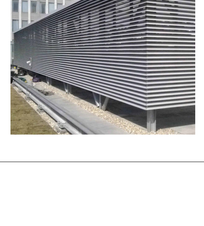
PROJECT
PROJECT MARS
12 Mars Rd, Lane Cove West NSW 2066

DRAWING TITLE
SIGNAGE DETAILS - SITE TOTEM POLE + SIGNAGE

SCALE @ A1
PROJECT NUMBER 10417434
DRAWING NUMBER **MAR-AR-DRG-94101**
ISSUE **B**
PROJECT STATUS **SSDA APPLICATION**

3/12/2025 11:40:04 AM

Autodesk Docs://10417434 Goodman 12 Mars Rd SSD/MAR-HDR-AR-R24_B.CDT

CATEGORY	REFERENCE IMAGE	CODE	DESCRIPTION	FINISH
PRECAST CONCRETE		FT-01A FT-01B	PRECAST CONCRETE PANELS WITH VERTICAL RIBBING PRECAST CONCRETE PANELS	LIGHT GREY
METAL CLADDING		FT-02	METAL SCREEN BATTENS ON EXPOSED CONCRETE SLAB EDGES	TIMBER LOOK
METAL CLADDING		FT-03	HORIZONTAL METAL CORRUGATED CLADDING	LIGHT GREY
GLASS		FT-04	CLEAR GLAZING, ALUMINIUM FRAME	LIGHT GREY
ACOUSTIC		FT-05	METAL LOUVRE SCREEN	LIGHT GREY

CATEGORY	REFERENCE IMAGE	CODE	DESCRIPTION	FINISH
MESH		FT-06	MESH WITH VERTICAL CABLES FOR PLANTING	BLACK
ROOFING		FT-07	LARGE PROFILE METAL ROOFING	LIGHT GREY
SECURITY FENCE		- - -	PALISADE FENCE	DARK GREY

Level 24, 25 Martin Place, Sydney NSW, 2000, Australia
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NOMINATED ARCHITECTS:
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NORTH POINT

REV	DESCRIPTION OF CHANGE	DATE	CHECKED	ISSUED
A	ISSUE FOR TOA	17/11/25	HDR	HDR
B	ISSUE FOR FORMAL LODGEMENT	03/12/25	HDR	HDR

CLIENT
Goodman

PROJECT
PROJECT MARS
12 Mars Rd, Lane Cove West NSW 2066

DRAWING TITLE
FINISHES SCHEDULE

SCALE
@ A1
PROJECT NUMBER
10417434
DRAWING NUMBER
MAR-AR-DRG-96000
ISSUE
B
PROJECT STATUS
SSDA APPLICATION

3/12/2025 11:40:13 AM

Autodesk Docs://10417434 Goodman 12 Mars Rd SSD/MAR-HDR-AR-R24_B.DWG

Appendix B: Borehole Logs

BOREHOLE LOG

BH01

PROJECT: S22013: Detailed Site Investigation
FINAL DEPTH: 1.00 m
LOCATION: 12 Mars Road, Lane Cove West, NSW 2066
CLIENT: Goodman Property Services (Aust) Pty Ltd
INCLINATION: Vertical
POSITION: E328702.000 N6257250.000 (GDA2020 / MGA zone 56)
SURFACE ELEVATION: Not measured
ORIENTATION: N/A
RIG TYPE: Hand Auger
CONTRACTOR: Epoca Environmental
CASING: Not cased
DATE: 14 Nov 2024
DIAMETER: 125 mm
DIMENSIONS: N/A
GENERAL NOTES: N/A
LOGGED BY: LD
CHECKED BY: VR

METHOD	GROUND WATER LEVELS	DEPTH (m)	GRAPHIC LOG	MODIFIED GROUP SYMBOL	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE ID	FIELD TESTS
HA		0.0		FILL	FILL Gravelly SAND: poorly graded, coarse, sub-rounded to sub-angular, SAND, fine to medium, sub-angular to sub-rounded Gravel, with, clay, pale brown, dry, no odour, no staining.	ED	BH01_0.0-0.2	PID(0.2m)=0.6 PPM
		0.5				ED	BH01_0.4-0.5	PID(0.5m)=1.4 PPM
		1.0			Terminated at 1.00 m. Refusal on Bedrock .			
		1.5						
		2.0						

These logs have been prepared for environmental purposes and should not be used for geotechnical design and interpretive purposes
For explanation and abbreviations and symbols, refer to Soil Description Notes & Abbreviations (SEN-TECH-051).

BOREHOLE LOG
BH02/MW01

PROJECT: S22013: Detailed Site Investigation
LOCATION: 12 Mars Road, Lane Cove West, NSW 2066
POSITION: E328657.943 N6257257.110 (GDA2020 / MGA zone 56)
RIG TYPE: Geoprobe 7822DT
DATE: 13 Nov 2024
GENERAL NOTES: N/A
WATER NOTE: Water observed at 3.50 m

CLIENT: Goodman Property Services (Aust) Pty Ltd
SURFACE ELEVATION: 48.72 m (AHD)
CONTRACTOR: Epoca Environmental
DIAMETER: 150 mm

FINAL DEPTH: 9.00 m
INCLINATION: Vertical
ORIENTATION: N/A
CASING: Not cased
DIMENSIONS: N/A
LOGGED BY: LD
CHECKED BY: VR

METHOD	GROUND WATER LEVELS	WELL INSTALLATION	RL (m AHD)	DEPTH (m)	GRAPHIC LOG	MODIFIED GROUP SYMBOL	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE ID	FIELD TESTS
HA				0.0		FILL	FILL Clayey Gravelly SAND: poorly graded, medium to coarse, sub-rounded to sub-angular, SAND, low plasticity Clay, sub-angular, medium to coarse Gravel, brown mottled grey, dry, no odour, no staining.	ED	BH02_0.2-0.3	PID(0.3m)=25.9 PPM
SFA			48.0	0.5		MW	SANDSTONE: inferred low strength, inferred highly weathered, pale red mottled grey, dry (Hawkesbury Sandstone)	ED	BH02_0.4-0.5	PID(0.5m)=24.7 PPM
				1.0				ED	BH02_0.9-1.0	PID(1.0m)=8.2 PPM
AH			47.0	1.5			inferred medium to high strength, inferred slightly weathered, pale yellow			
				2.0		HW		ED	BH02_1.9-2.0	PID(2.0m)=12.1 PPM
			46.0	2.5						
				3.0						
	▶			3.5			pale grey, wet			
			45.0	4.0		HW		ED	BH02_3.9-4.0	PID(4.0m)=0.3 PPM
				4.5						
			44.0	5.0			pale grey, moist			
				5.5						
			43.0	6.0				ED	BH02_5.9-6.0	PID(6.0m)=1 PPM
				6.5						
			42.0	7.0		HW				
				7.5						
			41.0	8.0				ED	BH02_7.9-8.0	PID(8.0m)= PPM
				8.5						
			40.0	9.0			Terminated at 9.00 m. Target Depth Achieved.			
				9.5						
			39.0	10.0						

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BOREHOLE LOG

BH03

PROJECT: S22013: Detailed Site Investigation
FINAL DEPTH: 0.70 m
LOCATION: 12 Mars Road, Lane Cove West, NSW 2066
CLIENT: Goodman Property Services (Aust) Pty Ltd
INCLINATION: Vertical
POSITION: E328673.000 N6257254.000 (GDA2020 / MGA zone 56)
SURFACE ELEVATION: Not measured
ORIENTATION: N/A
RIG TYPE: Hand Auger
CONTRACTOR: Epoca Environmental
CASING: Not cased
DATE: 14 Nov 2024
DIAMETER: 125 mm
DIMENSIONS: N/A
GENERAL NOTES: N/A
LOGGED BY: .LD
CHECKED BY: VR

METHOD	GROUND WATER LEVELS	DEPTH (m)	GRAPHIC LOG	MODIFIED GROUP SYMBOL	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE ID	FIELD TESTS
HA		0.0		FILL	FILL Clayey Gravelly SAND: poorly graded, fine to coarse, sub-rounded to sub-angular, SAND, low plasticity Clay, sub-angular, medium to coarse Gravel, brown, dry, anthropogenic material including concrete fragments (<5%), no odour, no staining.	ED	BH03_0.1-0.2	PID(0.2m)=1.7 PPM
				FILL	FILL: pale brown.	ED	BH03_0.2-0.3	PID(0.3m)=2.1 PPM
		0.5		CI	CI CLAY: medium plasticity, CLAY, grey mottled red, firm, moist, dry of plastic limit, slight earthy odour, no staining.	ED	BH03_0.5-0.7	
					Terminated at 0.70 m. Refusal on Bedrock.			PID(0.7m)=3.2 PPM
		1.0						
		1.5						
		2.0						

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For explanation and abbreviations and symbols, refer to Soil Description Notes & Abbreviations (SEN-TECH-051).

BOREHOLE LOG

BH04

PROJECT: S22013: Detailed Site Investigation
FINAL DEPTH: 0.30 m
LOCATION: 12 Mars Road, Lane Cove West, NSW 2066
CLIENT: Goodman Property Services (Aust) Pty Ltd
INCLINATION: Vertical
POSITION: E328702.000 N6257217.000 (GDA2020 / MGA zone 56)
SURFACE ELEVATION: Not measured
ORIENTATION: N/A
RIG TYPE: Geoprobe 7822DT
CONTRACTOR: Epoca Environmental
CASING: Not cased
DATE: 15 Nov 2024
DIAMETER: 200 mm
DIMENSIONS: N/A
GENERAL NOTES: N/A
LOGGED BY: LD
CHECKED BY: VR

METHOD	GROUND WATER LEVELS	DEPTH (m)	GRAPHIC LOG	MODIFIED GROUP SYMBOL	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE ID	FIELD TESTS
CC		0.0		FILL	FILL: CONCRETE, good condition.			
HA				FILL	FILL Gravelly SAND: poorly graded, coarse, sub-rounded to sub-angular, SAND, sub-angular, medium to coarse Gravel, grey brown, moist, anthropogenic material including concrete fragments (<5%), no odour, no staining.	ED	BH04_0.24-0.3	PID(0.3m)=2.8 PPM
					Terminated at 0.30 m. Refusal on Bedrock .			
		0.5						
		1.0						
		1.5						
		2.0						

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BOREHOLE LOG

BH05

PROJECT: S22013: Detailed Site Investigation
FINAL DEPTH: 0.50 m
LOCATION: 12 Mars Road, Lane Cove West, NSW 2066
CLIENT: Goodman Property Services (Aust) Pty Ltd
INCLINATION: Vertical
POSITION: E328675.000 N6257221.000 (GDA2020 / MGA zone 56)
SURFACE ELEVATION: Not measured
ORIENTATION: N/A
RIG TYPE: Geoprobe 7822DT
CONTRACTOR: Epoca Environmental
CASING: Not cased
DATE: 15 Nov 2024
DIAMETER: 200 mm
DIMENSIONS: N/A
GENERAL NOTES: N/A
LOGGED BY: LD
CHECKED BY: VR

METHOD	GROUND WATER LEVELS	DEPTH (m)	GRAPHIC LOG	MODIFIED GROUP SYMBOL	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE ID	FIELD TESTS
CC		0.0		FILL	FILL: CONCRETE, good condition.			
HA				FILL	FILL Gravelly SAND: poorly graded, coarse, sub-rounded to sub-angular, SAND, sub-angular, medium to coarse Gravel, grey brown, moist, anthropogenic material including concrete fragments (<5%), no odour, no staining.	ED	BH05_0.2-0.25	PID(0.2m)=2.1 PPM
		0.5			Terminated at 0.50 m. Refusal on Bedrock .			
		1.0						
		1.5						
		2.0						

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For explanation and abbreviations and symbols, refer to Soil Description Notes & Abbreviations (SEN-TECH-051).

BOREHOLE LOG

BH06

PROJECT: S22013: Detailed Site Investigation
LOCATION: 12 Mars Road, Lane Cove West, NSW 2066
POSITION: E328690.000 N6257199.000 (GDA2020 / MGA zone 56)
RIG TYPE: Geoprobe 7822DT
DATE: 15 Nov 2024
GENERAL NOTES: N/A

CLIENT: Goodman Property Services (Aust) Pty Ltd
SURFACE ELEVATION: Not measured
CONTRACTOR: Epoca Environmental
DIAMETER: 200 mm

FINAL DEPTH: 0.50 m
INCLINATION: Vertical
ORIENTATION: N/A
CASING: Not cased
DIMENSIONS: N/A
LOGGED BY: LD
CHECKED BY: VR

METHOD	GROUND WATER LEVELS	DEPTH (m)	GRAPHIC LOG	MODIFIED GROUP SYMBOL	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE ID	FIELD TESTS
CC		0.0		FILL	FILL: CONCRETE, good condition.			
HA				FILL	FILL SAND: poorly graded, coarse, sub-rounded to sub-angular, SAND, grey, moist, no odour, no staining.	ED	BH06_0.2-0.3	PID(0.2m)=0.1 PPM
		0.5			Terminated at 0.50 m. Refusal on Bedrock.			
		1.0						
		1.5						
		2.0						

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BOREHOLE LOG

BH07

PROJECT: S22013: Detailed Site Investigation
LOCATION: 12 Mars Road, Lane Cove West, NSW 2066
POSITION: E328670.000 N6257193.000 (GDA2020 / MGA zone 56)
RIG TYPE: Geoprobe 7822DT
DATE: 15 Nov 2024
GENERAL NOTES: N/A

CLIENT: Goodman Property Services (Aust) Pty Ltd
SURFACE ELEVATION: Not measured
CONTRACTOR: Epoca Environmental
DIAMETER: 200 mm

FINAL DEPTH: 0.50 m
INCLINATION: Vertical
ORIENTATION: N/A
CASING: Not cased
DIMENSIONS: N/A
LOGGED BY: LD
CHECKED BY: VR

METHOD	GROUND WATER LEVELS	DEPTH (m)	GRAPHIC LOG	MODIFIED GROUP SYMBOL	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE ID	FIELD TESTS
CC		0.0		FILL	FILL: CONCRETE, good condition.			
HA				FILL	FILL Gravelly SAND: poorly graded, coarse, sub-rounded to sub-angular, SAND, sub-angular to angular, medium to coarse Gravel, grey brown, moist, anthropogenic material including concrete fragments (<5%), no odour, no staining.	ED	BH07_0.21-0.25	PID(0.2m)=2.6 PPM
		0.5			Terminated at 0.50 m. Refusal on Bedrock.			
		1.0						
		1.5						
		2.0						

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For explanation and abbreviations and symbols, refer to Soil Description Notes & Abbreviations (SEN-TECH-051).

BOREHOLE LOG

BH08

PROJECT: S22013: Detailed Site Investigation
FINAL DEPTH: 0.16 m
LOCATION: 12 Mars Road, Lane Cove West, NSW 2066
CLIENT: Goodman Property Services (Aust) Pty Ltd
INCLINATION: Vertical
POSITION: E328655.000 N6257166.000 (GDA2020 / MGA zone 56)
SURFACE ELEVATION: Not measured
ORIENTATION: N/A
RIG TYPE: Geoprobe 7822DT
CONTRACTOR: Epoca Environmental
CASING: Not cased
DATE: 15 Nov 2024
DIAMETER: 200 mm
DIMENSIONS: N/A
GENERAL NOTES: N/A
LOGGED BY: LD
CHECKED BY: VR

METHOD	GROUND WATER LEVELS	DEPTH (m)	GRAPHIC LOG	MODIFIED GROUP SYMBOL	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE ID	FIELD TESTS
CC		0.0		FILL	FILL: CONCRETE, good condition.			
HA				FILL	FILL Gravelly SAND: poorly graded, coarse, sub-rounded to sub-angular, SAND, sub-angular to angular, medium to coarse Gravel, grey brown, moist, anthropogenic material including concrete fragments (<5%), no odour, no staining.	ED	BH08_0.13-0.16	PID(0.2m)=4.1 PPM
					Terminated at 0.16 m. Refusal on Bedrock .			
		0.5						
		1.0						
		1.5						
		2.0						

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For explanation and abbreviations and symbols, refer to Soil Description Notes & Abbreviations (SEN-TECH-051).

BOREHOLE LOG

BH09

PROJECT: S22013: Detailed Site Investigation
FINAL DEPTH: 0.26 m
LOCATION: 12 Mars Road, Lane Cove West, NSW 2066
CLIENT: Goodman Property Services (Aust) Pty Ltd
INCLINATION: Vertical
POSITION: E328652.000 N6257130.000 (GDA2020 / MGA zone 56)
SURFACE ELEVATION: Not measured
ORIENTATION: N/A
RIG TYPE: Geoprobe 7822DT
CONTRACTOR: Epoca Environmental
CASING: Not cased
DATE: 15 Nov 2024
DIAMETER: 200 mm
DIMENSIONS: N/A
GENERAL NOTES: N/A
LOGGED BY: LD
CHECKED BY: VR

METHOD	GROUND WATER LEVELS	DEPTH (m)	GRAPHIC LOG	MODIFIED GROUP SYMBOL	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE ID	FIELD TESTS
CC		0.0		FILL	FILL: CONCRETE, good condition.			
HA				FILL	FILL Gravelly SAND: poorly graded, coarse, sub-rounded to sub-angular, SAND, sub-angular to angular, medium to coarse Gravel, grey brown, moist, anthropogenic material including concrete fragments (<5%), no odour, no staining.	ED	BH09_0.18-0.26	PID(0.3m)=10.4 PPM
					Terminated at 0.26 m. Refusal on Bedrock .			
		0.5						
		1.0						
		1.5						
		2.0						

These logs have been prepared for environmental purposes and should not be used for geotechnical design and interpretive purposes
For explanation and abbreviations and symbols, refer to Soil Description Notes & Abbreviations (SEN-TECH-051).

BOREHOLE LOG

BH10

PROJECT: S22013: Detailed Site Investigation
FINAL DEPTH: 0.70 m
LOCATION: 12 Mars Road, Lane Cove West, NSW 2066
CLIENT: Goodman Property Services (Aust) Pty Ltd
INCLINATION: Vertical
POSITION: E328626.000 N6257135.000 (GDA2020 / MGA zone 56)
SURFACE ELEVATION: Not measured
ORIENTATION: N/A
RIG TYPE: Geoprobe 7822DT
CONTRACTOR: Epoca Environmental
CASING: Not cased
DATE: 15 Nov 2024
DIAMETER: 200 mm
DIMENSIONS: N/A
GENERAL NOTES: N/A
LOGGED BY: LD
CHECKED BY: VR

METHOD	GROUND WATER LEVELS	DEPTH (m)	GRAPHIC LOG	MODIFIED GROUP SYMBOL	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE ID	FIELD TESTS
CC		0.0		FILL	FILL: CONCRETE, good condition.			
HA				FILL	FILL Gravelly SAND: poorly graded, coarse, sub-rounded to sub-angular, SAND, sub-angular to angular, medium to coarse Gravel, grey brown, moist, anthropogenic material including concrete fragments (<5%), no odour, no staining.	ED	BH10_0.2-0.3	PID(0.3m)=6.8 PPM
		0.5		FILL	FILL Sandy Gravelly CLAY: low to medium plasticity, CLAY, poorly graded, fine to coarse, sub-rounded Sand, sub-angular, medium to coarse Gravel, pale brown mottled orange, firm to stiff, moist, near plastic limit, no odour, no staining.	ED	BH10_0.4-0.5	PID(0.5m)=6.5 PPM
					Terminated at 0.70 m. Possible services.			
		1.0						
		1.5						
		2.0						

These logs have been prepared for environmental purposes and should not be used for geotechnical design and interpretive purposes
For explanation and abbreviations and symbols, refer to Soil Description Notes & Abbreviations (SEN-TECH-051).

BOREHOLE LOG
BH10A

PROJECT: S22013: Detailed Site Investigation
FINAL DEPTH: 0.65 m
LOCATION: 12 Mars Road, Lane Cove West, NSW 2066
CLIENT: Goodman Property Services (Aust) Pty Ltd
INCLINATION: Vertical
POSITION: E328626.000 N6257134.000 (GDA2020 / MGA zone 56)
SURFACE ELEVATION: Not measured
ORIENTATION: N/A
RIG TYPE: Geoprobe 7822DT
CONTRACTOR: Epoca Environmental
CASING: Not cased
DATE: 15 Nov 2024
DIAMETER: 200 mm
DIMENSIONS: N/A
GENERAL NOTES: N/A
LOGGED BY: LD
CHECKED BY: VR

METHOD	GROUND WATER LEVELS	DEPTH (m)	GRAPHIC LOG	MODIFIED GROUP SYMBOL	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE ID	FIELD TESTS
CC		0.0		FILL	FILL: CONCRETE, good condition.			
HA				FILL	FILL Gravelly SAND: poorly graded, coarse, sub-rounded to sub-angular, SAND, sub-angular to angular, medium to coarse Gravel, brown, dry, anthropogenic material including concrete fragments (<5%), no odour, no staining.	ED	BH10A_0.2-0.3	PID(0.3m)=6..1 PPM
				FILL	FILL Sandy Gravelly CLAY: low to medium plasticity, CLAY, poorly graded, medium to coarse, sub-rounded Sand, sub-angular, medium to coarse Gravel, brown mottled orange, firm to stiff, moist, near plastic limit, no odour, no staining.	ED	BH10A_0.3-0.4	PID(0.4m)=5 PPM
		0.5				ED	BH10A_0.5-0.65	PID(0.6m)=2.5 PPM
					Terminated at 0.65 m. Refusal on Bedrock.			
		1.0						
		1.5						
		2.0						

These logs have been prepared for environmental purposes and should not be used for geotechnical design and interpretive purposes
For explanation and abbreviations and symbols, refer to Soil Description Notes & Abbreviations (SEN-TECH-051).

BOREHOLE LOG

BH11

PROJECT: S22013: Detailed Site Investigation
FINAL DEPTH: 1.00 m
LOCATION: 12 Mars Road, Lane Cove West, NSW 2066
CLIENT: Goodman Property Services (Aust) Pty Ltd
INCLINATION: Vertical
POSITION: E328630.000 N6257114.000 (GDA2020 / MGA zone 56)
SURFACE ELEVATION: Not measured
ORIENTATION: N/A
RIG TYPE: Hand Auger /Geoprobe 7822DT
CONTRACTOR: Epoca Environmental
CASING: Not cased
DATE: 15 Nov 2024
DIAMETER: 200 mm
DIMENSIONS: N/A
GENERAL NOTES: N/A
LOGGED BY: LD
CHECKED BY: VR

METHOD	GROUND WATER LEVELS	DEPTH (m)	GRAPHIC LOG	MODIFIED GROUP SYMBOL	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE ID	FIELD TESTS
CC		0.0		FILL	FILL: CONCRETE, good condition.			
HA				FILL	FILL Gravelly SAND: poorly graded, coarse, sub-rounded to sub-angular, SAND, sub-angular to angular, medium to coarse Gravel, pale brown, moist, no odour, no staining.	ED	BH11_0.2-0.3	PID(0.3m)=3.3 PPM
		0.5		FILL	FILL Sandy Gravelly CLAY: medium plasticity, CLAY, poorly graded, fine to coarse, sub-rounded Sand, sub-angular, medium to coarse Gravel, pale brown mottled orange, firm, moist, near plastic limit, no odour, no staining.	ED	BH11_0.9-1.0	PID(1.0m)=4.3 PPM
		1.0			Terminated at 1.00 m. Refusal on Bedrock .			
		1.5						
		2.0						

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BOREHOLE LOG

BH12

PROJECT: S22013: Detailed Site Investigation
FINAL DEPTH: 0.30 m
LOCATION: 12 Mars Road, Lane Cove West, NSW 2066
CLIENT: Goodman Property Services (Aust) Pty Ltd
INCLINATION: Vertical
POSITION: E328686.000 N6257106.000 (GDA2020 / MGA zone 56)
SURFACE ELEVATION: Not measured
ORIENTATION: N/A
RIG TYPE: Geoprobe 7822DT
CONTRACTOR: Epoca Environmental
CASING: Not cased
DATE: 14 Nov 2024
DIAMETER: 200 mm
DIMENSIONS: N/A
GENERAL NOTES: N/A
LOGGED BY: LD
CHECKED BY: VR

METHOD	GROUND WATER LEVELS	DEPTH (m)	GRAPHIC LOG	MODIFIED GROUP SYMBOL	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE ID	FIELD TESTS
CC		0.0		FILL	FILL: CONCRETE, good condition.			
HA				FILL	FILL Clayey Gravelly SAND: poorly graded, medium to coarse, sub-rounded to sub-angular, SAND, low plasticity Clay, sub-angular, medium to coarse Gravel, brown orange, moist, no odour, no staining.	ED	BH12_0.15-0.2	
				SP	SP SAND: poorly graded, fine to medium, sub-rounded, SAND, pale brown to white, moist, no odour, no staining.	ED	BH12_0.2-0.3	
					Terminated at 0.30 m. Refusal on Bedrock.			
		0.5						
		1.0						
		1.5						
		2.0						

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BOREHOLE LOG

BH13

PROJECT: S22013: Detailed Site Investigation
LOCATION: 12 Mars Road, Lane Cove West, NSW 2066
POSITION: E328658.000 N6257110.000 (GDA2020 / MGA zone 56)
RIG TYPE: Hand Auger
DATE: 12 Nov 2024
GENERAL NOTES: N/A

CLIENT: Goodman Property Services (Aust) Pty Ltd
SURFACE ELEVATION: Not measured
CONTRACTOR: Epoca Environmental
DIAMETER: 125 mm

FINAL DEPTH: 0.50 m
INCLINATION: Vertical
ORIENTATION: N/A
CASING: Not cased
DIMENSIONS: N/A
LOGGED BY: LD
CHECKED BY: VR

METHOD	GROUND WATER LEVELS	DEPTH (m)	GRAPHIC LOG	MODIFIED GROUP SYMBOL	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE ID	FIELD TESTS
HA		0.0		FILL	FILL SAND: poorly graded, fine to medium, sub-rounded, SAND, with clay, brown, dry, anthropogenic material including wood (<5%), no odour, no staining.	ED	BH13_0.0-0.1	PID(0.1m)=0 PPM
				FILL	FILL Gravelly SAND: poorly graded, medium to coarse, sub-rounded to sub-angular, SAND, sub-angular, medium to coarse Gravel, brown, dry, no odour, no staining.	ED	BH13_0.4-0.5	
		0.5			Terminated at 0.50 m. Refusal on Bedrock .			PID(0.5m)=0 PPM
		1.0						
		1.5						
		2.0						

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For explanation and abbreviations and symbols, refer to Soil Description Notes & Abbreviations (SEN-TECH-051).

BOREHOLE LOG
BH14/MW02

PROJECT: S22013: Detailed Site Investigation
LOCATION: 12 Mars Road, Lane Cove West, NSW 2066
POSITION: E328635.286 N6257098.845 (GDA2020 / MGA zone 56)
RIG TYPE: Geoprobe 7822DT
DATE: 11 Nov 2024
GENERAL NOTES: N/A
WATER NOTE: Water observed at 5.20 m

CLIENT: Goodman Property Services (Aust) Pty Ltd
SURFACE ELEVATION: 38.00 m (AHD)
CONTRACTOR: Epoca Environmental
DIAMETER: 200 mm

FINAL DEPTH: 8.00 m
INCLINATION: Vertical
ORIENTATION: N/A
CASING: Not cased
DIMENSIONS: N/A
LOGGED BY: LD
CHECKED BY: VR

METHOD	GROUND WATER LEVELS	WELL INSTALLATION	RL (m AHD)	DEPTH (m)	GRAPHIC LOG	MODIFIED GROUP SYMBOL	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE ID	FIELD TESTS
HCC			38.0	0.0		FILL	FILL: CONCRETE, good condition.			
SFA						FILL	FILL Gravelly SAND: poorly graded, fine, sub-rounded, SAND, fine to coarse, sub-rounded to sub-angular Gravel, pale brown, moist, no odour, no staining.	ED	BH14_0.16-0.2	PID(0.2m)=0.6 PPM
				0.5			SANDSTONE: inferred low to medium strength, inferred moderately weathered, pale orange, dry (Hawkesbury Sandstone)	ED	BH14_0.5-0.6	PID(0.6m)=9.6 PPM
			37.0	1.0						
				1.5						
			36.0	2.0		MW		ED	BH14_2.0-2.2	PID(2.2m)=11.6 PPM
				2.5						
			35.0	3.0				ED	BH14_3.0-3.2	PID(3.2m)=11.4 PPM
				3.5						
AH			34.0	4.0			inferred medium strength, inferred moderately weathered, pale grey to white, moist	ED	BH14_4.0-4.2	PID(4.2m)=12.3 PPM
				4.5		MW				
	▶		33.0	5.0			pale orange to grey, wet	ED	BH14_5.0-5.2	PID(5.2m)=12.9 PPM
				5.5						
			32.0	6.0				ED	BH14_6.0-6.2	PID(6.2m)=9.0 PPM
				6.5		MW				
			31.0	7.0				ED	BH14_7.0-7.2	PID(7.2m)=5.2 PPM
				7.5						
			30.0	8.0			Terminated at 8.00 m. Target Depth Achieved.	ED	BH14_7.8-8.0	PID(8.0m)=10.1 PPM
			29.0	8.5						
				9.0						
				9.5						
				10.0						

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BOREHOLE LOG

BH15

PROJECT: S22013: Detailed Site Investigation
FINAL DEPTH: 1.00 m
LOCATION: 12 Mars Road, Lane Cove West, NSW 2066
CLIENT: Goodman Property Services (Aust) Pty Ltd
INCLINATION: Vertical
POSITION: E328654.000 N6257082.000 (GDA2020 / MGA zone 56)
SURFACE ELEVATION: Not measured
ORIENTATION: N/A
RIG TYPE: Geoprobe 7822DT
CONTRACTOR: Epoca Environmental
CASING: Not cased
DATE: 14 Nov 2024
DIAMETER: 200 mm
DIMENSIONS: N/A
GENERAL NOTES: N/A
LOGGED BY: LD
CHECKED BY: VR

METHOD	GROUND WATER LEVELS	DEPTH (m)	GRAPHIC LOG	MODIFIED GROUP SYMBOL	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE ID	FIELD TESTS
CC		0.0		FILL	FILL: CONCRETE, good condition.			
HA				FILL	FILL GRAVEL: poorly graded, coarse, sub-angular, GRAVEL, grey, moist, no odour, no staining.			
				FILL	FILL Sandy Gravelly CLAY: low to medium plasticity, CLAY, poorly graded, medium to coarse, sub-rounded to sub-angular Sand, sub-angular, medium to coarse Gravel, brown mottled orange, firm, moist, near plastic limit, no odour, no staining.	ED	BH15_0.2-0.3	PID(0.3m)=2.7 PPM
		0.5		FILL	FILL Clayey Gravelly SAND: poorly graded, coarse, sub-rounded to sub-angular, SAND, low plasticity Clay, sub-angular, medium to coarse Gravel, brown to grey, moist, no odour, no staining.	ED	BH15_0.4-0.5	PID(0.5m)=1 PPM
		1.0			Terminated at 1.00 m. Refusal on Bedrock.	ED	BH15_0.9-1.0	PID(1.0m)=0.8 PPM
		1.5						
		2.0						

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BOREHOLE LOG
BH16/MW03

PROJECT: S22013: Detailed Site Investigation
LOCATION: 12 Mars Road, Lane Cove West, NSW 2066
POSITION: E328697.695 N6257104.719 (GDA2020 / MGA zone 56)
RIG TYPE: Geoprobe 7822DT
DATE: 11 Nov 2024
GENERAL NOTES: N/A

CLIENT: Goodman Property Services (Aust) Pty Ltd
SURFACE ELEVATION: 38.10 m (AHD)
CONTRACTOR: Epoca Environmental
DIAMETER: 200 mm

FINAL DEPTH: 8.00 m
INCLINATION: Vertical
ORIENTATION: N/A
CASING: Not cased
DIMENSIONS: N/A
LOGGED BY: LD
CHECKED BY: VR

METHOD	GROUND WATER LEVELS	WELL INSTALLATION	RL (m AHD)	DEPTH (m)	GRAPHIC LOG	MODIFIED GROUP SYMBOL	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE ID	FIELD TESTS
CC			38.0	0.0		FILL	FILL: CONCRETE, good condition.			
HA				0.5		FILL	FILL Gravelly SAND: poorly graded, fine, sub-rounded to sub-angular, SAND, sub-angular, medium to coarse Gravel, pale brown, moist, anthropogenic material including concrete fragments (<5%), glass (<5%), no odour, no staining.	ED	BH16_0.16-0.2	PID(0.2m)=8.9 PPM
SFA			37.0	1.0				ED	BH16_0.5-0.6	PID(0.6m)=6.4 PPM
SPT				1.5				ED	BH16_1.0-1.2	PID(1.2m)=11.8 PPM
AH			36.0	2.0		MW	SANDSTONE: inferred low to medium strength, inferred moderately weathered, pale orange, dry (Hawkesbury Sandstone)	ED	BH16_2.0-2.1	PID(2.1m)=13.4 PPM
			35.0	3.0						
			34.0	4.0				ED	BH16_4.0-4.1	PID(4.1m)=13.4 PPM
			33.0	5.0						
			32.0	6.0				ED	BH16_6.0-6.1	PID(6.1m)=10.1 PPM
			31.0	7.0						
			30.0	8.0			Terminated at 8.00 m. Target Depth Achieved.	ED	BH16_7.9-8.0	PID(8.0m)=42.9 PPM
			29.0	9.0						
				10.0						

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BOREHOLE LOG
BH17

PROJECT: S22013: Detailed Site Investigation
LOCATION: 12 Mars Road, Lane Cove West, NSW 2066
POSITION: E328717.000 N6257129.000 (GDA2020 / MGA zone 56)
RIG TYPE: Geoprobe 7822DT
DATE: 14 Nov 2024
GENERAL NOTES: N/A

CLIENT: Goodman Property Services (Aust) Pty Ltd
SURFACE ELEVATION: Not measured
CONTRACTOR: Epoca Environmental
DIAMETER: 200 mm

FINAL DEPTH: 1.70 m
INCLINATION: Vertical
ORIENTATION: N/A
CASING: Not cased
DIMENSIONS: N/A
LOGGED BY: LD
CHECKED BY: VR

METHOD	GROUND WATER LEVELS	DEPTH (m)	GRAPHIC LOG	MODIFIED GROUP SYMBOL	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE ID	FIELD TESTS
CC		0.0		FILL	FILL: CONCRETE, good condition.			
HA				FILL	FILL GRAVEL: poorly graded, fine to coarse, sub-rounded to sub-angular, GRAVEL, grey, moist, no odour, no staining.			
				FILL	FILL Clayey Gravelly SAND: poorly graded, medium to coarse, sub-rounded to sub-angular, SAND, low plasticity Clay, sub-angular, medium to coarse Gravel, pale brown mottled red, moist, no odour, no staining.	ED	BH17_0.3-0.4	PID(0.4m)=11.2 PPM
		0.5		FILL	FILL Sandy Gravelly CLAY: low plasticity, CLAY, poorly graded, medium to coarse, sub-rounded to sub-angular Sand, sub-angular, medium to coarse Gravel, pale orange mottled grey, firm, moist, near plastic limit, anthropogenic material including wood (<5%), no odour, no staining.	ED	BH17_0.7-0.8	PID(0.8m)=25.7 PPM
		1.0		FILL	FILL Clayey SAND: poorly graded, fine to medium, sub-rounded to sub-angular, SAND, low plasticity Clay, dark brown, moist, anthropogenic material including wood (<5%), slight earthy odour, minor black staining.			
				SP	SP SAND: poorly graded, fine, sub-rounded to sub-angular, SAND, grey, moist, slight earthy odour, no staining, (Hawkesbury Sandstone).	ED	BH17_1.1-1.2	PID(1.2m)=16.8 PPM
		1.5		CH	CH CLAY: high plasticity, CLAY, pale grey mottled orange, firm, moist, near plastic limit, slight earthy odour, no staining.	ED	BH17_1.6-1.7	PID(1.7m)=26.1 PPM
		2.0			Terminated at 1.70 m. Refusal on Bedrock .			

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For explanation and abbreviations and symbols, refer to Soil Description Notes & Abbreviations (SEN-TECH-051).

BOREHOLE LOG
BH18/MW04

PROJECT: S22013: Detailed Site Investigation
LOCATION: 12 Mars Road, Lane Cove West, NSW 2066
POSITION: E328737.109 N6257161.521 (GDA2020 / MGA zone 56)
RIG TYPE: Geoprobe 7822DT
DATE: 12 Nov 2024
GENERAL NOTES: N/A

CLIENT: Goodman Property Services (Aust) Pty Ltd
SURFACE ELEVATION: 37.86 m (AHD)
CONTRACTOR: Epoca Environmental
DIAMETER: 200 mm

FINAL DEPTH: 8.00 m
INCLINATION: Vertical
ORIENTATION: N/A
CASING: Not cased
DIMENSIONS: N/A
LOGGED BY: LD
CHECKED BY: VR

METHOD	GROUND WATER LEVELS	WELL INSTALLATION	RL (m AHD)	DEPTH (m)	GRAPHIC LOG	MODIFIED GROUP SYMBOL	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE ID	FIELD TESTS
CC				0.0		FILL	FILL: CONCRETE, good condition.			
HA				0.2		FILL	FILL GRAVEL: poorly graded, medium to coarse, sub-angular, GRAVEL, grey , dry, no odour, no staining.	ED ED	BH18_0.2-0.25 BH18_0.25-0.3	PID(0.2m)=0 PPM PID(0.3m)=0 PPM
				0.5		CH	FILL Sandy Gravelly CLAY: low plasticity, CLAY, poorly graded, medium to coarse, rounded to sub-rounded Sand, sub-angular, medium to coarse Gravel, grey mottled brown, firm, moist, near plastic limit, no odour, no staining.	ED	BH18_0.5-0.6	PID(0.6m)=0 PPM
			37.0				CH CLAY: medium to high plasticity, CLAY, pale grey mottled red, firm to stiff, moist, near plastic limit, no odour, no staining.			
				1.0		CL	CL Sandy CLAY: low plasticity, CLAY, poorly graded, sub-rounded to sub-angular, medium to coarse Sand, pale grey, moist, near plastic limit, no odour, no staining.	ED	BH18_1.0-1.1	PID(1.1m)=0 PPM
SFA				1.5		CL	CL: pale red.			
			36.0	2.0			SANDSTONE: inferred low to medium strength, inferred moderately weathered, pale yellow, moist (Hawkesbury Sandstone)	ED	BH18_1.9-2.0	PID(2.0m)=0 PPM
			35.0	3.0		MW				
			34.0	4.0			MW: pale orange.	ED	BH18_3.9-4.0	PID(4.0m)=3.6 PPM
AH			33.0	5.0						
			32.0	6.0		MW		ED	BH18_5.9-6.0	PID(6.0m)=21.5 PPM
			31.0	7.0						
			30.0	8.0				ED	BH18_7.9-8.0	
							Terminated at 8.00 m. Target Depth Achieved .			
			29.0	9.0						
			28.0	10.0						

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For explanation and abbreviations and symbols, refer to Soil Description Notes & Abbreviations (SEN-TECH-051).

BOREHOLE LOG

BH19

PROJECT: S22013: Detailed Site Investigation
LOCATION: 12 Mars Road, Lane Cove West, NSW 2066
POSITION: E328749.000 N6257183.000 (GDA2020 / MGA zone 56)
RIG TYPE: Geoprobe 7822DT
DATE: 14 Nov 2024
GENERAL NOTES: N/A

CLIENT: Goodman Property Services (Aust) Pty Ltd
SURFACE ELEVATION: Not measured
CONTRACTOR: Epoca Environmental
DIAMETER: 200 mm

FINAL DEPTH: 0.50 m
INCLINATION: Vertical
ORIENTATION: N/A
CASING: Not cased
DIMENSIONS: N/A
LOGGED BY: LD
CHECKED BY: VR

METHOD	GROUND WATER LEVELS	DEPTH (m)	GRAPHIC LOG	MODIFIED GROUP SYMBOL	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE ID	FIELD TESTS
CC		0.0		FILL	FILL: CONCRETE, good condition.			
HA				FILL	FILL GRAVEL: poorly graded, medium to coarse, sub-rounded to sub-angular, GRAVEL, grey, dry, no odour, no staining.			
				CI	CI CLAY: low to medium plasticity, CLAY, pale grey mottled yellow, firm, moist, near plastic limit, slight sulphurous odour, no staining.	ED	BH19_0.22-0.25	PID(0.2m)=7.2 PPM
				XW	SANDSTONE: inferred very low strength, inferred extremely weathered, pale grey, moist (Hawkesbury Sandstone)	ED	BH19_0.4-0.5	PID(0.5m)=2.2 PPM
		0.5			Terminated at 0.50 m. Refusal on Bedrock.			
		1.0						
		1.5						
		2.0						

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For explanation and abbreviations and symbols, refer to Soil Description Notes & Abbreviations (SEN-TECH-051).

BOREHOLE LOG

BH20

PROJECT: S22013: Detailed Site Investigation
LOCATION: 12 Mars Road, Lane Cove West, NSW 2066
POSITION: E328753.000 N6257215.000 (GDA2020 / MGA zone 56)
RIG TYPE: Geoprobe 7822DT
DATE: 14 Nov 2024
GENERAL NOTES: N/A

CLIENT: Goodman Property Services (Aust) Pty Ltd
SURFACE ELEVATION: Not measured
CONTRACTOR: Epoca Environmental
DIAMETER: 200 mm

FINAL DEPTH: 0.60 m
INCLINATION: Vertical
ORIENTATION: N/A
CASING: Not cased
DIMENSIONS: N/A
LOGGED BY: LD
CHECKED BY: VR

METHOD	GROUND WATER LEVELS	DEPTH (m)	GRAPHIC LOG	MODIFIED GROUP SYMBOL	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE ID	FIELD TESTS
CC		0.0		FILL	FILL: CONCRETE, good condition.			
HA				FILL	FILL GRAVEL: poorly graded, medium to coarse, sub-rounded to sub-angular, GRAVEL, grey, moist, no odour, no staining.			
				FILL	FILL Clayey Gravelly SAND: poorly graded, coarse, sub-rounded to sub-angular, SAND, low plasticity Clay, sub-angular, medium to coarse Gravel, orange, moist, no odour, no staining.	ED	BH20_0.2-0.35	PID(0.4m)=7.1 PPM
				CH	CH CLAY: medium to high plasticity, CLAY, pale grey, firm, moist, near plastic limit, no odour, no staining.	ED	BH20_0.35-0.45	PID(0.4m)=8.2 PPM
		0.5		XW	SANDSTONE: inferred very low strength, inferred extremely weathered, orange with yellow, moist (Hawkesbury Sandstone)	ED	BH20_0.45-0.55	PID(0.6m)=6.4 PPM
					Terminated at 0.60 m. Refusal on Bedrock .			
		1.0						
		1.5						
		2.0						

These logs have been prepared for environmental purposes and should not be used for geotechnical design and interpretive purposes
For explanation and abbreviations and symbols, refer to Soil Description Notes & Abbreviations (SEN-TECH-051).

BOREHOLE LOG
BH21/MW05

PROJECT: S22013: Detailed Site Investigation
LOCATION: 12 Mars Road, Lane Cove West, NSW 2066
POSITION: E328756.358 N6257241.788 (GDA2020 / MGA zone 56)
RIG TYPE: Geoprobe 7822DT
DATE: 12 Nov 2024
GENERAL NOTES: N/A
WATER NOTE: Water observed at 5.20 m

CLIENT: Goodman Property Services (Aust) Pty Ltd
SURFACE ELEVATION: 41.70 m (AHD)
CONTRACTOR: Epoca Environmental
DIAMETER: 200 mm

FINAL DEPTH: 8.00 m
INCLINATION: Vertical
ORIENTATION: N/A
CASING: Not cased
DIMENSIONS: N/A
LOGGED BY: LD
CHECKED BY: VR

METHOD	RL (m AHD)	DEPTH (m)	MODIFIED GROUP SYMBOL	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE ID	FIELD TESTS
CC	41.70	0.0	FILL	FILL: CONCRETE, good condition.			
HA		0.5	FILL	FILL Clayey Gravelly SAND: poorly graded, medium to coarse, sub-rounded to sub-angular, SAND, low plasticity Clay, sub-angular, medium to coarse Gravel, pale orange to brown, dry, no odour, no staining.	ED	BH21_0.2-0.3	PID(0.3m)=34.1 PPM
	41.0		FILL	FILL: brown, anthropogenic material including glass (<5%), no odour, no staining.	ED	BH21_0.7-0.8	PID(0.8m)=21.6 PPM
		1.0	SC	SC Clayey SAND: poorly graded, fine, sub-rounded to sub-angular, SAND, low plasticity Clay, orange, dry, no odour, no staining, (Hawkesbury Sandstone).	ED	BH21_1.1-1.2	PID(1.2m)=13.8 PPM
SFA	40.0	1.5					
		2.0	HW	SANDSTONE: inferred low strength, inferred highly weathered, pale red, dry (Hawkesbury Sandstone)	ED	BH21_1.9-2.0	PID(2.0m)=20 PPM
	39.0	2.5					
		3.0			ED	BH21_2.9-3.0	PID(3.0m)=20.4 PPM
	38.0	3.5					
		4.0			ED	BH21_3.9-4.0	PID(4.0m)=19.7 PPM
AH	37.0	4.5	MW	inferred medium to high strength, inferred moderately weathered, pale yellow			
		5.0					
	36.0	5.5					
		6.0			ED	BH21_5.9-6.0	PID(6.0m)=10.2 PPM
	35.0	6.5					
		7.0	HW	inferred very low to low strength, wet			
	34.0	7.5	MW	inferred medium to high strength			
		8.0		Terminated at 8.00 m. Target Depth Achieved.	ED	BH21_7.9-8.0	PID(8.0m)=18.7 PPM
	33.0	8.5					
		9.0					
	32.0	9.5					
		10.0					

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BOREHOLE LOG

BH22

PROJECT: S22013: Detailed Site Investigation
FINAL DEPTH: 0.50 m
LOCATION: 12 Mars Road, Lane Cove West, NSW 2066
CLIENT: Goodman Property Services (Aust) Pty Ltd
INCLINATION: Vertical
POSITION: E328789.000 N6257237.000 (GDA2020 / MGA zone 56)
SURFACE ELEVATION: Not measured
ORIENTATION: N/A
RIG TYPE: Hand Auger
CONTRACTOR: Epoca Environmental
CASING: Not cased
DATE: 14 Nov 2024
DIAMETER: 125 mm
DIMENSIONS: N/A
GENERAL NOTES: N/A
LOGGED BY: LD
CHECKED BY: VR

METHOD	GROUND WATER LEVELS	DEPTH (m)	GRAPHIC LOG	MODIFIED GROUP SYMBOL	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE ID	FIELD TESTS
HA		0.0		FILL	FIll: Mulch layer	ED	BH22_0.1-0.2	PID(0.2m)=1.7 PPM
				FILL	FILL Clayey SAND: poorly graded, fine to coarse, sub-rounded to sub-angular, SAND, low plasticity Clay, brown, dry, no odour, no staining.	ED	BH22_0.4-0.5	
		0.5			Terminated at 0.50 m. Refusal on roots .			PID(0.5m)=3.4 PPM
		1.0						
		1.5						
		2.0						

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For explanation and abbreviations and symbols, refer to Soil Description Notes & Abbreviations (SEN-TECH-051).

BOREHOLE LOG

BH23

PROJECT: S22013: Detailed Site Investigation
FINAL DEPTH: 0.57 m
LOCATION: 12 Mars Road, Lane Cove West, NSW 2066
CLIENT: Goodman Property Services (Aust) Pty Ltd
INCLINATION: Vertical
POSITION: E328722.000 N6257234.000 (GDA2020 / MGA zone 56)
SURFACE ELEVATION: Not measured
ORIENTATION: N/A
RIG TYPE: Geoprobe 7822DT
CONTRACTOR: Epoca Environmental
CASING: Not cased
DATE: 14 Nov 2024
DIAMETER: 200 mm
DIMENSIONS: N/A
GENERAL NOTES: N/A
LOGGED BY: LD
CHECKED BY: VR

METHOD	GROUND WATER LEVELS	DEPTH (m)	GRAPHIC LOG	MODIFIED GROUP SYMBOL	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE ID	FIELD TESTS
CC		0.0		FILL	FILL: CONCRETE, good condition.			
				FILL	FILL SAND: poorly graded, medium to coarse, sub-rounded to sub-angular, SAND, brown to grey, moist, no odour, no staining.			
HA				XW	SANDSTONE: inferred very low strength, inferred extremely weathered, orange, moist (Hawkesbury Sandstone)	ED	BH23_0.2-0.3	PID(0.3m)=0.2 PPM
		0.5				ED	BH23_0.5-0.57	PID(0.6m)=0.1 PPM
					Terminated at 0.57 m. Refusal on Bedrock.			
		1.0						
		1.5						
		2.0						

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BOREHOLE LOG

BH24

PROJECT: S22013: Detailed Site Investigation
FINAL DEPTH: 0.50 m
LOCATION: 12 Mars Road, Lane Cove West, NSW 2066
CLIENT: Goodman Property Services (Aust) Pty Ltd
INCLINATION: Vertical
POSITION: E328716.000 N6257208.000 (GDA2020 / MGA zone 56)
SURFACE ELEVATION: Not measured
ORIENTATION: N/A
RIG TYPE: Geoprobe 7822DT
CONTRACTOR: Epoca Environmental
CASING: Not cased
DATE: 14 Nov 2024
DIAMETER: 200 mm
DIMENSIONS: N/A
GENERAL NOTES: N/A
LOGGED BY: LD
CHECKED BY: VR

METHOD	GROUND WATER LEVELS	DEPTH (m)	GRAPHIC LOG	MODIFIED GROUP SYMBOL	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE ID	FIELD TESTS
CC		0.0		FILL	FILL: CONCRETE, good condition.			
HA				FILL	FILL GRAVEL: poorly graded, coarse, sub-angular to angular, GRAVEL, grey, moist, no odour, no staining.			
		0.5			Terminated at 0.50 m. Possible services .			
		1.0						
		1.5						
		2.0						

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BOREHOLE LOG

BH25

PROJECT: S22013: Detailed Site Investigation
FINAL DEPTH: 0.50 m
LOCATION: 12 Mars Road, Lane Cove West, NSW 2066
CLIENT: Goodman Property Services (Aust) Pty Ltd
INCLINATION: Vertical
POSITION: E328727.000 N6257101.000 (GDA2020 / MGA zone 56)
SURFACE ELEVATION: Not measured
ORIENTATION: N/A
RIG TYPE: Hand Auger
CONTRACTOR: Epoca Environmental
CASING: Not cased
DATE: 15 Nov 2024
DIAMETER: 125 mm
DIMENSIONS: N/A
GENERAL NOTES: N/A
LOGGED BY: LD
CHECKED BY: VR

METHOD	GROUND WATER LEVELS	DEPTH (m)	GRAPHIC LOG	MODIFIED GROUP SYMBOL	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE ID	FIELD TESTS
HA		0.0		FILL	FILL Clayey Gravelly SAND: poorly graded, fine to coarse, sub-rounded to sub-angular, SAND, low plasticity Clay, sub-angular, medium to coarse Gravel, brown to pale brown, dry, no odour, no staining.	ED	BH25_0.0-0.2	PID(0.2m)=1.8 PPM
						ED	BH25_0.4-0.5	
		0.5			Terminated at 0.50 m. Refusal on Bedrock.			PID(0.5m)=0.7 PPM
		1.0						
		1.5						
		2.0						

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BOREHOLE LOG

BH26

PROJECT: S22013: Detailed Site Investigation
FINAL DEPTH: 0.35 m
LOCATION: 12 Mars Road, Lane Cove West, NSW 2066
CLIENT: Goodman Property Services (Aust) Pty Ltd
INCLINATION: Vertical
POSITION: E328742.000 N6257101.000 (GDA2020 / MGA zone 56)
SURFACE ELEVATION: Not measured
ORIENTATION: N/A
RIG TYPE: Hand Auger
CONTRACTOR: Epoca Environmental
CASING: Not cased
DATE: 15 Nov 2024
DIAMETER: 125 mm
DIMENSIONS: N/A
GENERAL NOTES: N/A
LOGGED BY: LD
CHECKED BY: VR

METHOD	GROUND WATER LEVELS	DEPTH (m)	GRAPHIC LOG	MODIFIED GROUP SYMBOL	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE ID	FIELD TESTS
HA		0.0		FILL	FILL Gravelly SAND: poorly graded, medium to coarse, sub-rounded to sub-angular, SAND, sub-angular, medium to coarse Gravel, pale brown, dry, no odour, no staining.	ED	BH26_0.1-0.35	
					Terminated at 0.35 m. Refusal on Bedrock.			PID(0.4m)=0.8 PPM
		0.5						
		1.0						
		1.5						
		2.0						

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BOREHOLE LOG

BH27

PROJECT: S22013: Detailed Site Investigation
FINAL DEPTH: 0.40 m
LOCATION: 12 Mars Road, Lane Cove West, NSW 2066
CLIENT: Goodman Property Services (Aust) Pty Ltd
INCLINATION: Vertical
POSITION: E328769.000 N6257097.000 (GDA2020 / MGA zone 56)
SURFACE ELEVATION: Not measured
ORIENTATION: N/A
RIG TYPE:
CONTRACTOR:
CASING: Not cased
DATE: 15 Nov 2024
DIAMETER: 125 mm
DIMENSIONS: N/A
GENERAL NOTES: N/A
LOGGED BY: LD
CHECKED BY: VR

METHOD	GROUND WATER LEVELS	DEPTH (m)	GRAPHIC LOG	MODIFIED GROUP SYMBOL	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE ID	FIELD TESTS
HA		0.0		FILL	FILL Gravelly SAND: poorly graded, medium to coarse, sub-rounded to sub-angular, SAND, sub-angular, medium to coarse Gravel, pale brown, dry, no odour, no staining.	ED	BH27_0.2-0.3	PID(0.3m)=0.9 PPM
					Terminated at 0.40 m. Refusal on Bedrock.			
		0.5						
		1.0						
		1.5						
		2.0						

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BOREHOLE LOG

BH28

PROJECT: S22013: Detailed Site Investigation
FINAL DEPTH: 1.00 m
LOCATION: 12 Mars Road, Lane Cove West, NSW 2066
CLIENT: Goodman Property Services (Aust) Pty Ltd
INCLINATION: Vertical
POSITION: E328686.000 N6257059.000 (GDA2020 / MGA zone 56)
SURFACE ELEVATION: Not measured
ORIENTATION: N/A
RIG TYPE: Hand Auger
CONTRACTOR: Epoca Environmental
CASING: Not cased
DATE: 11 Nov 2024
DIAMETER: 125 mm
DIMENSIONS: N/A
GENERAL NOTES: N/A
LOGGED BY: LD
CHECKED BY: VR

METHOD	GROUND WATER LEVELS	DEPTH (m)	GRAPHIC LOG	MODIFIED GROUP SYMBOL	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE ID	FIELD TESTS
HA		0.0		FILL	FILL Clayey Gravelly SAND: poorly graded, medium to coarse, sub-rounded to sub-angular, SAND, low plasticity Clay, sub-angular, medium to coarse Gravel, pale orange, dry, anthropogenic material including glass (<5%), no odour, no staining.	ED	BH28_0.0-0.2	PID(0.2m)=11 PPM
		0.5		FILL	FILL: fine, brown to grey.	ED	BH28_0.5-0.6	PID(0.6m)=10 PPM
		1.0			Terminated at 1.00 m. Target Depth Achieved.	ED	BH28_0.9-1.0	PID(1.0m)=8.6 PPM
		1.5						
		2.0						

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BOREHOLE LOG

BH29

PROJECT: S22013: Detailed Site Investigation
FINAL DEPTH: 0.10 m
LOCATION: 12 Mars Road, Lane Cove West, NSW 2066
CLIENT: Goodman Property Services (Aust) Pty Ltd
INCLINATION: Vertical
POSITION: E328646.000 N6257037.000 (GDA2020 / MGA zone 56)
SURFACE ELEVATION: Not measured
ORIENTATION: N/A
RIG TYPE: Hand Auger
CONTRACTOR: Epoca Environmental
CASING: Not cased
DATE: 11 Nov 2024
DIAMETER: 125 mm
DIMENSIONS: N/A
GENERAL NOTES: N/A
LOGGED BY: LD
CHECKED BY: VR

METHOD	GROUND WATER LEVELS	DEPTH (m)	GRAPHIC LOG	MODIFIED GROUP SYMBOL	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE ID	FIELD TESTS
HA		0.0		FILL	FILL SAND: poorly graded, medium to coarse, sub-rounded to sub-angular, SAND, pale yellow, dry, no odour, no staining.	ED	BH29_0.0-0.1	
					Terminated at 0.10 m. Refusal on Bedrock .			PID(0.1m)=4.1 PPM
		0.5						
		1.0						
		1.5						
		2.0						

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BOREHOLE LOG

BH30

PROJECT: S22013: Detailed Site Investigation
FINAL DEPTH: 0.50 m
LOCATION: 12 Mars Road, Lane Cove West, NSW 2066
CLIENT: Goodman Property Services (Aust) Pty Ltd
INCLINATION: Vertical
POSITION: E328619.000 N6257041.000 (GDA2020 / MGA zone 56)
SURFACE ELEVATION: Not measured
ORIENTATION: N/A
RIG TYPE: Hand Auger
CONTRACTOR: Epoca Environmental
CASING: Not cased
DATE: 12 Nov 2024
DIAMETER: 125 mm
DIMENSIONS: N/A
GENERAL NOTES: N/A
LOGGED BY: LD
CHECKED BY: VR

METHOD	GROUND WATER LEVELS	DEPTH (m)	GRAPHIC LOG	MODIFIED GROUP SYMBOL	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE ID	FIELD TESTS
HA		0.0		FILL	FILL Gravelly SAND: poorly graded, fine to medium, sub-rounded to sub-angular, SAND, sub-angular, medium to coarse Gravel, Trace sandstone fragments, brown to pale brown, dry, anthropogenic material including plastic (<5%), no odour, no staining.	ED	BH30_0.0-0.1	PID(0.1m)=0.4 PPM
						ED	BH30_0.4-0.5	
		0.5			Terminated at 0.50 m. Refusal on Bedrock.			PID(0.5m)=1.3 PPM
		1.0						
		1.5						
		2.0						

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Soil and Rock Explanatory Notes and Abbreviations

In accordance with AS1726 (2017) Geotechnical Site Investigations

General Terminology

ACM	Asbestos Containing Material	**m**	Metres
AHD	Australian Height Datum	**MGA**	Map Grid of Australia
AS	Australian Standard	**MW**	Monitoring Well
bgl	Below ground level	**QA**	Quality Assurance
BH	Borehole	**QC**	Quality Control
COC	Chain of Custody	**SB**	Soil Bore
GW	Groundwater	**TP**	Test Pit

Drilling or Excavation Methods

AH	Air Hammer	**NDD**	Non-Destructive Drilling
CC	Concrete Coring	**NMLC**	NMLC Core Barrel
E	Excavation (Hydraulic)	**P**	Piston Sampler
HA	Hand Auger	**PT**	Push Tube
HE	Hand Excavation	**SFA**	Solid Flight Auger
HFA	Hollow Flight Auger	**SONIC**	Sonic Drilling
HQ3	HQ3 Core Barrel	**W**	Wash Bore

Well Construction and Inflow/Outflow Details

	Asphalt		Standing Water Level
	Concrete		Water Inflow
	Bentonite		Partial Water Loss
	Sand Backfill		Complete Water Loss
	Gravel Backfill	GWNO	Groundwater not observed
	Grout	GWNE	Groundwater not encountered
	Cuttings	-	-
Pipework details			
	Screen (Slotted Pipe)		Casing (Plain Pipe)
Ⓦ	Water Monitoring Point	Ⓖ	Gas Monitoring Point

Sample Type

B	Bulk Disturbed Sample	**EU**	Environmental Undisturbed Sample (e.g. Push Tube)
Bag	Bag Sample (e.g. zip lock)	**Rock**	Rock Core Sample
C	Container (PFAS) Sample	**SPT**	Sample from SPT
D	Small Disturbed Sample – Geotech	**U50**	U50 tube sample
ED	Environmental Disturbed Sample (e.g. jar)	**U63**	U63 tube sample

Insitu Soil Tests

PID	Photoionization detector (ppm)	**PP**	Pocket Penetrometer Uncorrected reading (kPa)
DCP	Dynamic Cone Penetrometer Test	**SPT**	Standard Penetration Test (N blows per 300mm - uncorrected)
DMT	Dilatometer Test		
CPT	Cone Penetration Test	**SV**	Shear Vane (kPa)

Soil Classification

	Description	Particle Size	Modified Group Symbol	Typical Composition
	FILL		FILL	Fill
Coarse-grained Soils (>65% >0.075mm)	Boulders	>200mm	B	Boulders and Cobbles
	Cobbles	63 to 200mm		
	GRAVEL	Coarse 19 to 63mm Medium 6.7 to 19mm Fine 2.36 to 6.7mm	GP	Poorly graded gravel, and gravel-sand mixture, little or no fines
			GW	Well graded gravel and gravel-sand mixture, little or no fines
			GM	Gravel-silt mixture and gravel-sand-silt mixture
			GC	Gravel-clay mixture and gravel-sand-clay mixture
	SAND	Coarse 0.6 to 2.36mm Medium 0.21 to 0.6mm Fine 0.075 to 0.21mm	SP	Poorly graded sand and gravel-sand mixture, little to no fines
			SW	Well graded sand and gravel-sand mixture, little or no fines
			SM	Sand-silt mixture
			SC	Sand-clay mixture
Fine-grained Soils (>35% <0.075mm)	SILT	2µm to 75µm	ML	Inorganic silt with low plasticity, Liquid Limit ≤ 50%
			MH	Inorganic silt with high plasticity, Liquid Limit > 50%
	CLAY	≤2µm	CL	Inorganic clay low plasticity, Liquid Limit ≤ 35%
			CI	Inorganic clay medium plasticity, Liquid Limit > 35% and ≤ 50%
			CH	Inorganic clay of high plasticity, Liquid Limit > 50%
	ORGANIC		OL	Organic silt of low plasticity, 2 to 25% organic content by dry mass
			OH	Organic silt or clay of medium to high plasticity, 2 to 25% organic content of dry mass
			Pt	Peat, highly organic, >25% organic content of dry mass

Fine Grained Soils - Consistency

Consistency	Field Guide to Consistency	Indicative Undrained Shear Strength (kPa)
Very Soft	Exudes between the fingers when squeezed in hand	≤ 12
Soft	Can be moulded by light finger pressure	> 12 and ≤ 25
Firm	Can be moulded by strong finger pressure	> 25 and ≤ 50
Stiff	Cannot be moulded by fingers	> 50 and ≤ 100
Very Stiff	Can be indented by thumb nail	> 100 and ≤2 00
Hard	Can be indented with difficulty by thumb nail	> 200
Friable	Can be easily crumbled or broken into small pieces by hand	Not obtainable

Fine Grained Soils - Moisture Condition

Term		Field Guide
Moist, dry of plastic limit	w < PL	No moisture when handled, flaky, dusty, friable or powdery
Moist, near plastic limit	w ≈ PL	Soil feels cool, damp, darkened in colour, can be moulded and tends to stick together
Moist, wet of plastic limit	w > PL	Soil feels cool, wet, darkened in colour, soil usually weakened and free water forms on hands when handled
Wet, near liquid limit	w ≈ LL	Samples from below the water table, within a perched water table or from within the capillary fringe, soil behaves as a semi-liquid or viscous state
Wet, wet of liquid limit	w > LL	Samples from below the water table, within a perched water table or from within the capillary fringe, soil behaves as a liquid

Coarse Grained Soils - Soil Grading

Well Graded		Soil has good representation of all particle sizes from the largest to the smallest.
Poorly Graded		Soil has one or more intermediate sizes poorly represented.

Coarse Grained Soils - Soil Angularity – Particle Shape

 Rounded	 Angular
 Sub-rounded	 Sub-angular

Coarse Grained Soils – Density

Density	SPT (N) Blows/300mm	DCP Blows/100mm	Indicative Density Index
Very Loose	0 to 4	0 to 1	< 15%
Loose	4 to 10	1 to 3	15 to 35%
Medium Dense	10 to 30	3 to 8	35 to 65%
Dense	30 to 50	8 to 15	65 to 85%
Very Dense	≥ 50	> 15	85%

Coarse Grained Soils - Moisture Condition

Term		Field Guide
Dry	D	Non-cohesive and free-running.
Moist	M	Soil feels cool, darkened in colour. Soil tends to stick together.
Wet	W	Soil feels cool, darkened in colour. Soil tends to stick together, free water forms when handling.

Secondary and Minor Soil Component

Term	In Coarse Grained Soils	In Fine Grained Soils
Secondary	Fine > 12%, Coarse > 30%	Coarse > 30%
With	Fine > 5%, ≤ 12% Coarse > 15%, ≤ 30%	Coarse > 15%, ≤ 30%
Trace	Fine ≤ 5%, Coarse ≤ 15%	Coarse ≤ 15%

Note: Soil grading terms do not apply to minor soil components, soil grading applies to the over all material description.

Soil Structure

Type	Description
Zoning	Layer - zone is continuous across exposure or sample
	Lens - discontinuous layer of different material with lenticular shape
	Pocket - irregular inclusion of different material
Defects	Can include fissures, cracks, root-holes, partings, sheared surface, tubes.
Weakly Cemented	The soil may be easily disaggregated by hand in air or water.
Moderately Cemented	Effort is required to disaggregate the soil by hand in air or water.

Soil legend

Description	Image	Description	Image	Description	Image	Description	Image	Description	Image
FILL		CLAY (201)		SILT (301)		SAND (401)		GRAVEL (501)	
PEAT (601)		Silty CLAY (202)		Clayey SILT (302)		Clayey SAND (402)		Clayey GRAVEL (502)	
COBBLES (701)		Sandy CLAY (203)		Sandy SILT (303)		Silty SAND (403)		Silty GRAVEL (503)	
BOULDERS (730)		Gravelly CLAY (204)		Gravelly SILT (304)		Gravelly SAND (404)		Sandy GRAVEL (504)	

Rock Fabric and Texture

Rock Type	Fabric	Detail
Sedimentary	Bedding	Layering produced by changes in sedimentation, which may be defined by grain size, colour or other features.
	Lamination	Similar to bedding, but developed in layer thicknesses of less than 20mm.
Metamorphic	Foliation	The parallel arrangement of minerals due to metamorphic processes.
	Cleavage	A type of foliation developed in fine grained metamorphic rocks such as slates.
Igneous	Flow Banding	A layering produced during flow of a partially solidified igneous rock that causes crystals to become orientated.

Rock Strength

Strength	Field Assessment	UCS (MPa)	$I_{S(50)}$ (MPa)[1]
Very Low[2]	Material crumbles under firm blows with sharp end of pick; can be peeled with knife; too hard to cut a triaxial sample by hand. Pieces up to 30mm thick can be broken by finger pressure.	0.6 to 2.0	0.03 to 0.1
Low	Easily cored with a knife; indentations 1mm to 3mm show in the specimen with firm blows of the pick point; has dull sound under hammer. A piece of core 150mm long by 50mm diameter may be broken by hand. Sharp edges of core may be friable and break during handling.	2.0 to 6.0	0.1 to 0.3
Medium	Readily scored with a knife; a piece of core 150mm long by 50mm diameter can be broken by hand with difficulty.	6.0 to 20	0.3 to 1.0
High	A piece of core 150mm long by hand but can be broken by a pick with a single firm blow; rock rings under hammer.	20 to 60	1.0 to 3.0
Very High	Hand specimen breaks with pick after more than one blow; rock rings under hammer.	60 to 200	3.0 to 10
Extremely High	Specimen requires many blows with geological pick to break through intact material; rock rings under hammer.	>200	>10

Note - [1]The unconfined compressive strength is typically 20 x $I_{s(50)}$, as presented. However the rock strength correlation for $I_{s(50)}$ can vary due to rock type and moisture content. [2]Material weaker than 'Very Low' Strength is described as a soil.

Rock Material Weathering

Weathering			Description
Residual Soil	RS		Material is weathered to such an extent that it has soil properties. Mass structure and material texture and fabric of original rock are no longer visible, but the soil has not been significantly transported.
Extremely Weathered	XW		Material is weathered to such an extent that it has soil properties. Mass structure, texture and fabric of original rock are still visible. Material is described using soil terms.
Highly Weathered	HW	DW - Distinctly Weathered	The whole of the rock material is discoloured, usually by iron staining or bleaching to the extent that the colour of the original rock is not recognizable. Rock strength is significantly changed by weathering. Some primary minerals have weathered to clay minerals. Porosity may be increased by leaching or may be decreased due to deposition of weathering products in pores.
Moderately Weathered	MW		The whole of the rock material is discoloured, usually by iron staining or bleaching to the extent that the colour of the original rock is not recognizable but shows little or no change of strength from fresh rock.
Slightly Weathered	SW		Rock is partially discoloured with staining or bleaching along joints but shows little or no change of strength from fresh rock.
Fresh	FR		Rock shows no sign of decomposition of individual minerals or colour changes.

Rock Material Alteration

Alteration			Description
Extremely Altered	XA		Material is altered to such an extent that it has soil properties. Mass structure, texture and fabric of original rock are still visible.
Highly Altered	HA	DA - Distinctly Altered	The whole of the rock material is discoloured, usually by staining or bleaching to the extent that the colour of the original rock is not recognizable. Rock strength is changed by alteration. Some primary minerals are altered to clay minerals. Porosity may be increased by leaching or may be decreased due to precipitation of secondary minerals in pores.
Moderately Altered	MA		The whole of the rock material is discoloured, usually by staining or bleaching to the extent that the colour of the original rock is not recognizable but shows little or no change of strength from fresh rock.
Slightly Altered	SA		Rock is slightly discoloured but shows little or no change of strength from fresh rock.

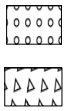
Rock Terminology

Term	Details
DB	Drilling Break
HB	Handling Break
MB	Mechanical Break
MRZ	Mechanical Rubble Zone
HQ3	Ø63mm core, triple tube wireline rotary coring
NMLC	Ø52mm core, triple tube conventional rotary coring
NQ3	Ø47mm core, triple tube wireline rotary coring
$I_{S(50)}$	Point Load Strength Index (MPa)
UCS	Uniaxial Compressive Strength (MPa)
TCR	Total Core Recovery (%): Length of Core Recovered x 100% Length of Core Run
RQD	Rock Quality Designation (%): Σ Length of Sound Core > 100mm in length x 100% Length of Core Run

Rock Defect Abbreviations

	Description		Description
C	Curved	PO	Polished
CA	Calcite	R	Rough
CN	Clean	S	Sheared Surface
CO	Coating	SL	Slickensided
CS	Crushed Seam	SM	Smooth
EWS	Extremely Weathered Seam	SN	Stained
Fe	Iron Stained	SS	Shear Seam
IR	Irregular	ST	Stepped
IS	Infilled Seam	SZ	Shear Zone
J	Joint	UN	Undulating
P	Parting	VN	Veneer
PL	Planar	VR	Very Rough

Rock Types – Sedimentary

Grain Size (mm)	Legend	Siliciclastic rock type		Legend	>90% of rock is carbonate		Legend	Ejected from volcano (Igneous)
> 2		CONGLOMERATE—rounded grains in a fine matrix BRECCIA—angular grains in a fine matrix			LIMESTONE or DOLOMITE	CALCIRUDITE		AGGLOMERATE– rounded grains in a fine matrix VOLCANIC BRECCIA—angular grains in a finer matrix
0.06-2		SANDSTONE[1]				CALCARENITE		TUFF
0.002-0.06		MUDSTONE	SILTSTONE			CALCISILTITE		TUFF (Fine grained)
< 0.002			CLAYSTONE			CALCILUTITE		

Notes: [1]Sandstone can be classified as Coarse > 2mm grain size, Medium 0.06-2mm grain size, Fine < 0.06mm grain size. Additionally: SHALE, COAL, EVAPORITES, FLINT/CHERT, LAMINITE

Rock Types – Igneous

Grain Size (mm)	Legend	Much quartz—pale (felsic)	Legend	Intermediate composition	Legend	Little quartz—dark (mafic)
Coarse > 2		GRANITE		DIORITE		GABBRO
Medium 0.06-2		MICROGRANITE		MICRODIORITE		DOLERITE
Fine < 0.06		RHYOLITE		ANDESITE		BASALT

Rock Types – Metamorphic

Grain Size (mm)	Legend	Foliated[1]	Legend	Non-foliated[2u]
Coarse > 2		GNEISS – well developed but widely spaced foliation		MARBLE – crystalline calcium carbonate
Medium 0.06-2		SCHIST – well developed foliation with much mica, some mica larger than 2 mm		QUARTZITE – fused quartz grains SERPENTINITE – usually a grey and green rock formed by the alteration of mafic igneous rocks
Fine < 0.06		PHYLLITE – slightly undulose foliation, sometimes spotted		HORNFELS – usually a fine-grained rock formed by thermal metamorphism

Note: [1]Foliated metamorphic rocks normally form by regional metamorphism. [2]Non-foliated metamorphic rocks form by contact or thermal metamorphism.

Appendix C: Calibration Certificates

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Certificate of Service and Calibration
Interface Meter
Heron H.Oil

Company Name	WAM Scientific
Office Address	26 Bungarra Crescent, Chipping Norton NSW 2170
Phone Number	+61 405 241 484
Contact Name	William Pak
Instrument	Heron H.Oil Interface Meter (30m)
Serial Number	01-8023
Client Name	Lucas Dzalakowski/Kieran Young/Zoe Smith (Senversa Pty Ltd)
Project Number	S20492/S18732/S22013
Comments	-

Instrument Check			
Item	Test	Test Passed	Comments
9V Battery	Klein Tools MM300 Multimeter	✓	Battery voltage reading above 7.9V
Battery Box	Check	✓	No damage
Face and Back Plates	Check	✓	No damage
Thumb Screws	Check	✓	Rubber ends intact
Tape Hangar/Protector	Check	✓	No damage
On/Off Button	Operation	✓	Button is functional
Buzzer	Operation	✓	Intermittent tone in H_2O, solid tone in product
LED Signal Light	Operation	✓	LED light functional – green and red
Probe	Operation/Check	✓	Decontaminated, cleaned and tested
Tape	Condition/Check	✓	Decontaminated and cleaned, no damage
Connection	Check	✓	Probe and link connected correctly and tightly
PCB	Operation	✓	Unit is fully functional
Electronics Panel	Orientation	✓	Correctly aligned

Instrument Readings		
Product	Buzzer	LED Light
H_2O	Intermittent	Blinking – Red
Petroleum	Solid	Steady – Red

Declaration
WAM Scientific certifies that the above instrument was successfully tested according to manufacturer's standards and all necessary checks were conducted to ensure the instrument was fully operational prior to dispatch. The interface meter was decontaminated, cleaned and tested with a mixture of tap water and petrol, shielded from ambient light.

Checked By	William Pak
Calibration Date	14/11/2024
Calibration Due	14/05/2025

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Certificate of Service and Calibration
Interface Meter
Heron H.Oil

Company Name	WAM Scientific
Office Address	26 Bungarra Crescent, Chipping Norton NSW 2170
Phone Number	+61 405 241 484
Contact Name	William Pak
Instrument	Heron H.Oil Interface Meter (30m)
Serial Number	01-8895
Client Name	Lucas Dzalakowski/Kieran Young/Zoe Smith (Senversa Pty Ltd)
Project Number	S20492/S18732/S22013
Comments	-

Instrument Check			
Item	Test	Test Passed	Comments
9V Battery	Klein Tools MM300 Multimeter	✓	Battery voltage reading above 7.9V
Battery Box	Check	✓	No damage
Face and Back Plates	Check	✓	No damage
Thumb Screws	Check	✓	Rubber ends intact
Tape Hangar/Protector	Check	✓	No damage
On/Off Button	Operation	✓	Button is functional
Buzzer	Operation	✓	Intermittent tone in H_2O, solid tone in product
LED Signal Light	Operation	✓	LED light functional – green and red
Probe	Operation/Check	✓	Decontaminated, cleaned and tested
Tape	Condition/Check	✓	Decontaminated and cleaned, no damage
Connection	Check	✓	Probe and link connected correctly and tightly
PCB	Operation	✓	Unit is fully functional
Electronics Panel	Orientation	✓	Correctly aligned

Instrument Readings		
Product	Buzzer	LED Light
H_2O	Intermittent	Blinking – Red
Petroleum	Solid	Steady – Red

Declaration
WAM Scientific certifies that the above instrument was successfully tested according to manufacturer's standards and all necessary checks were conducted to ensure the instrument was fully operational prior to dispatch. The interface meter was decontaminated, cleaned and tested with a mixture of tap water and petrol, shielded from ambient light.

Checked By	William Pak
Calibration Date	07/11/2024
Calibration Due	07/05/2025

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WAMSCIENTIFIC
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Certificate of Service and Calibration
Interface Meter
Heron H.Oil

Company Name	WAM Scientific
Office Address	26 Bungarra Crescent, Chipping Norton NSW 2170
Phone Number	+61 405 241 484
Contact Name	William Pak
Instrument	Heron H.Oil Interface Meter (30m)
Serial Number	01-8895
Client Name	Lucas Dzalakowski/Zoe Smith (Senversa Pty Ltd)
Project Number	S22013
Comments	-

Instrument Check			
Item	Test	Test Passed	Comments
9V Battery	Klein Tools MM300 Multimeter	✓	Battery voltage reading above 7.9V
Battery Box	Check	✓	No damage
Face and Back Plates	Check	✓	No damage
Thumb Screws	Check	✓	Rubber ends intact
Tape Hangar/Protector	Check	✓	No damage
On/Off Button	Operation	✓	Button is functional
Buzzer	Operation	✓	Intermittent tone in H_2O, solid tone in product
LED Signal Light	Operation	✓	LED light functional – green and red
Probe	Operation/Check	✓	Decontaminated, cleaned and tested
Tape	Condition/Check	✓	Decontaminated and cleaned, no damage
Connection	Check	✓	Probe and link connected correctly and tightly
PCB	Operation	✓	Unit is fully functional
Electronics Panel	Orientation	✓	Correctly aligned

Instrument Readings		
Product	Buzzer	LED Light
H_2O	Intermittent	Blinking – Red
Petroleum	Solid	Steady – Red

Declaration
WAM Scientific certifies that the above instrument was successfully tested according to manufacturer's standards and all necessary checks were conducted to ensure the instrument was fully operational prior to dispatch. The interface meter was decontaminated, cleaned and tested with a mixture of tap water and petrol, shielded from ambient light.

Checked By	William Pak
Calibration Date	07/11/2024
Calibration Due	07/05/2025

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Certificate of Service and Calibration
Water Quality Meter
YSI Professional Plus

Company Name	WAM Scientific
Office Address	26 Bungarra Crescent, Chipping Norton NSW 2170
Phone Number	+61 405 241 484
Contact Name	William Pak
Instrument	YSI Pro Quatro Water Quality Meter w/ 1m Quatro Cable
Serial Number	22H104713
Client Name	Zoe Smith/Lucas Dzalakowski/Kieran Young (Senversa Pty Ltd)
Project Number	S20492/S18732/S22013
Comments	-

Instrument Check

Item	Test	Test Passed	Comments
2 x Alkaline C-size Batteries	Klein Tools MM300 Multimeter	✓	Both batteries reading above 2.9V
Battery Saver Function	Operation	✓	Automatically turns off after 60 minutes if idle
Unit Display	Operation	✓	Screen visible, no damage
Keypad	Operation	✓	Responsive, no damage
Connection Port and Cable	Condition/Check	✓	Clean, no damage
Monitor Housing	Condition/Check	✓	No damage
Firmware	Version	✓	4.0.0
pH Probe	Condition/Calibration	✓	Calibrated and conforms to manufacturer's specs
pH millivolts for pH 7.00	Calibration	✓	pH 7.00 calibration range between 0 mV ± 50 mV
pH millivolts for pH 4.00	Calibration	✓	pH 4 mV range +165 to +180 from 7 buffer mV value
pH slope	Calibration	✓	Range between 55 to 60 mV/pH (ideal value 59 mV)
Response time < 90 seconds	Calibration	✓	Responds to correct value within 90 seconds
ORP Probe	Condition/Calibration	✓	Calibrated and conforms to manufacturer's specs
ORP Reading	Calibration	✓	Within ± 80 mV of reference Zobell Reading
Response time < 90 seconds	Calibration	✓	Responds to correct value within 90 seconds
Conductivity/Temp Probe	Condition/Calibration	✓	Calibrated and conforms to manufacturer's specs
Conductivity Cell	Calibration	✓	Conductivity cell constant 5.0 ± 1.0 in GLP file
Clean Sensor Readings	Calibration	✓	Clean sensor reads less than 3 uS/cm in dry air
Dissolved Oxygen Probe	Condition/Calibration	✓	Calibrated and conforms to manufacturer's specs
DO Cap	Condition/Calibration	✓	1.25 mil PE membrane (yellow membrane)
DO Sensor in Use	Condition	✓	Polarographic DO sensor
DO Sensor Value	Calibration	✓	(min 4.31 uA - max 8.00 uA) Avg 6.15 uA

Instrument Readings

Parameter	Standard Used	Reference No.	Calibration Value	Pre-Cal Value	Post-Cal Value	Units
Temperature	Centre 370 Therm.	Room Temp.	21.3	22.7	21.3	°C
pH	pH 4.00	417183	4.01	4.03	4.01	pH
pH	pH 7.00	419528	7.00	7.00	7.00	pH
Conductivity	2760 µs/cm at 25°C	399819	2760	2739	2760	µs/cm
ORP	Zobell A & B	420448/418958	237.1	227.4	237.1	mV
Zero Dissolved O_2	$NaSO_3$ in Distilled H_2O	426184	0.0	1.8	0.0	%
100% Dissolved O_2	100% Air Saturated H_2O	Fresh Air	100.0	107.4	100.0	%

Declaration

WAM Scientific certifies that the above instrument was successfully tested according to manufacturer's standards and all necessary checks were conducted to ensure the instrument was fully operational prior to dispatch. The calibration data supplied was obtained in accordance with manufacturer's specifications using solutions of known values.

Calibrated By	William Pak
Calibration Date	14/11/2024
Calibration Due	14/05/2025

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Certificate of Service and Calibration
Water Quality Meter
YSI Professional Plus

Company Name	WAM Scientific
Office Address	26 Bungarra Crescent, Chipping Norton NSW 2170
Phone Number	+61 405 241 484
Contact Name	William Pak
Instrument	YSI Pro Quatro Water Quality Meter w/ 1m Quatro Cable
Serial Number	23A107177
Client Name	Zoe Smith/Lucas Dzalakowski/Kieran Young (Senversa Pty Ltd)
Project Number	S20492/S18732/S22013
Comments	-

Instrument Check

Item	Test	Test Passed	Comments
2 x Alkaline C-size Batteries	Klein Tools MM300 Multimeter	✓	Both batteries reading above 2.9V
Battery Saver Function	Operation	✓	Automatically turns off after 60 minutes if idle
Unit Display	Operation	✓	Screen visible, no damage
Keypad	Operation	✓	Responsive, no damage
Connection Port and Cable	Condition/Check	✓	Clean, no damage
Monitor Housing	Condition/Check	✓	No damage
Firmware	Version	✓	4.0.0
pH Probe	Condition/Calibration	✓	Calibrated and conforms to manufacturer's specs
pH millivolts for pH 7.00	Calibration	✓	pH 7.00 calibration range between 0 mV ± 50 mV
pH millivolts for pH 4.00	Calibration	✓	pH 4 mV range +165 to +180 from 7 buffer mV value
pH slope	Calibration	✓	Range between 55 to 60 mV/pH (ideal value 59 mV)
Response time < 90 seconds	Calibration	✓	Responds to correct value within 90 seconds
ORP Probe	Condition/Calibration	✓	Calibrated and conforms to manufacturer's specs
ORP Reading	Calibration	✓	Within ± 80 mV of reference Zobell Reading
Response time < 90 seconds	Calibration	✓	Responds to correct value within 90 seconds
Conductivity/Temp Probe	Condition/Calibration	✓	Calibrated and conforms to manufacturer's specs
Conductivity Cell	Calibration	✓	Conductivity cell constant 5.0 ± 1.0 in GLP file
Clean Sensor Readings	Calibration	✓	Clean sensor reads less than 3 uS/cm in dry air
Dissolved Oxygen Probe	Condition/Calibration	✓	Calibrated and conforms to manufacturer's specs
DO Cap	Condition/Calibration	✓	1.25 mil PE membrane (yellow membrane)
DO Sensor in Use	Condition	✓	Polarographic DO sensor
DO Sensor Value	Calibration	✓	(min 4.31 uA - max 8.00 uA) Avg 6.15 uA

Instrument Readings

Parameter	Standard Used	Reference No.	Calibration Value	Pre-Cal Value	Post-Cal Value	Units
Temperature	Centre 370 Therm.	Room Temp.	21.3	22.0	21.3	°C
pH	pH 4.00	417183	4.01	3.99	4.01	pH
pH	pH 7.00	419528	7.00	6.99	7.00	pH
Conductivity	2760 µs/cm at 25°C	399819	2760	2766	2760	µs/cm
ORP	Zobell A & B	420448/418958	237.1	197.7	237.1	mV
Zero Dissolved O_2	$NaSO_3$ in Distilled H_2O	426184	0.0	0.6	0.0	%
100% Dissolved O_2	100% Air Saturated H_2O	Fresh Air	100.0	97.8	100.0	%

Declaration

WAM Scientific certifies that the above instrument was successfully tested according to manufacturer's standards and all necessary checks were conducted to ensure the instrument was fully operational prior to dispatch. The calibration data supplied was obtained in accordance with manufacturer's specifications using solutions of known values.

Calibrated By	William Pak
Calibration Date	14/11/2024
Calibration Due	14/05/2025

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Certificate of Service and Calibration

Gas Detector

MiniRAE 3000

Company Name	WAM Scientific
Office Address	26 Bungarra Crescent, Chipping Norton NSW 2170
Phone Number	+61 405 241 484
Contact Name	William Pak
Instrument	MiniRAE 3000 (PGM 7320)
Serial Number	592-932769
Client Name	Lucas Dzalakowski/Kieran Young/Zoe Smith (Senversa Pty Ltd)
Project Number	S20492/S18732/S22013
Comments	-

Instrument Check			
Item	Test	Test Passed	Comments
Li-Ion Rechargeable Battery	Battery Charge and Drain	✓	Unit runs for > 8 hours on a full charge
Charger and Power Supply	Operation/Check	✓	No damage
Unit Display	Operation	✓	Screen visible, no damage
Keypad	Operation	✓	Responsive, no damage
Pump	Flow Check	✓	Flow rate > 0.5 L/min
Monitor Housing	Condition/Check	✓	No damage
Rubber Boot	Check	✓	Clean, no damage
Flexi Probe	Condition/Check	✓	No leaks, no damage
Water Trap Filter	Visual Check	✓	Clean
Alarms	Audible, Visual, Vibration Check	✓	All modes of alarms are functional
Data Logger	Operation	✓	Unit records data, default set at 60 seconds
Lamp and Sensor	Clean and Calibration	✓	Lamp and PID sensor cleaned and calibrated
PCB	Operation	✓	Unit is fully functional
Firmware	Version	✓	v2.20A

Instrument Readings					
Parameter	Calibration Gas	Concentration	Reference No.	Zero Reading	Span Reading
PID (10.6eV)	Isobutylene	100 ppm	24-1835	0 ppm	100.6 ppm

Declaration
WAM Scientific certifies that the above instrument was successfully tested according to manufacturer's standards and all necessary checks were conducted to ensure the instrument was fully operational prior to dispatch. The calibration data supplied was obtained in accordance with manufacturer's specifications using gases of known concentrations.

Calibrated By	William Pak
Calibration Date	14/11/2024
Calibration Due	14/05/2025

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Certificate of Service and Calibration

Gas Detector

MiniRAE 3000

Company Name	WAM Scientific
Office Address	26 Bungarra Crescent, Chipping Norton NSW 2170
Phone Number	+61 405 241 484
Contact Name	William Pak
Instrument	MiniRAE 3000 (PGM 7320)
Serial Number	592-932890
Client Name	Lucas Dzalakowski/Kieran Young/Zoe Smith (Senversa Pty Ltd)
Project Number	S20492/S18732/S22013
Comments	-

Instrument Check			
Item	Test	Test Passed	Comments
Li-Ion Rechargeable Battery	Battery Charge and Drain	✓	Unit runs for > 8 hours on a full charge
Charger and Power Supply	Operation/Check	✓	No damage
Unit Display	Operation	✓	Screen visible, no damage
Keypad	Operation	✓	Responsive, no damage
Pump	Flow Check	✓	Flow rate > 0.5 L/min
Monitor Housing	Condition/Check	✓	No damage
Rubber Boot	Check	✓	Clean, no damage
Flexi Probe	Condition/Check	✓	No leaks, no damage
Water Trap Filter	Visual Check	✓	Clean
Alarms	Audible, Visual, Vibration Check	✓	All modes of alarms are functional
Data Logger	Operation	✓	Unit records data, default set at 60 seconds
Lamp and Sensor	Clean and Calibration	✓	Lamp and PID sensor cleaned and calibrated
PCB	Operation	✓	Unit is fully functional
Firmware	Version	✓	v2.20A

Instrument Readings					
Parameter	Calibration Gas	Concentration	Reference No.	Zero Reading	Span Reading
PID (10.6eV)	Isobutylene	100 ppm	24-1835	0 ppm	100.1 ppm

Declaration
WAM Scientific certifies that the above instrument was successfully tested according to manufacturer's standards and all necessary checks were conducted to ensure the instrument was fully operational prior to dispatch. The calibration data supplied was obtained in accordance with manufacturer's specifications using gases of known concentrations.

Calibrated By	William Pak
Calibration Date	07/11/2024
Calibration Due	07/05/2025

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Certificate of Service and Calibration

Gas Detector

MiniRAE 3000

Company Name	WAM Scientific
Office Address	26 Bungarra Crescent, Chipping Norton NSW 2170
Phone Number	+61 405 241 484
Contact Name	William Pak
Instrument	MiniRAE 3000 (PGM 7320)
Serial Number	592-932890
Client Name	Lucas Dzalakowski/Zoe Smith (Senversa Pty Ltd)
Project Number	S22013
Comments	-

Instrument Check			
Item	Test	Test Passed	Comments
Li-Ion Rechargeable Battery	Battery Charge and Drain	✓	Unit runs for > 8 hours on a full charge
Charger and Power Supply	Operation/Check	✓	No damage
Unit Display	Operation	✓	Screen visible, no damage
Keypad	Operation	✓	Responsive, no damage
Pump	Flow Check	✓	Flow rate > 0.5 L/min
Monitor Housing	Condition/Check	✓	No damage
Rubber Boot	Check	✓	Clean, no damage
Flexi Probe	Condition/Check	✓	No leaks, no damage
Water Trap Filter	Visual Check	✓	Clean
Alarms	Audible, Visual, Vibration Check	✓	All modes of alarms are functional
Data Logger	Operation	✓	Unit records data, default set at 60 seconds
Lamp and Sensor	Clean and Calibration	✓	Lamp and PID sensor cleaned and calibrated
PCB	Operation	✓	Unit is fully functional
Firmware	Version	✓	v2.20A

Instrument Readings					
Parameter	Calibration Gas	Concentration	Reference No.	Zero Reading	Span Reading
PID (10.6eV)	Isobutylene	100 ppm	24-1835	0 ppm	100.1 ppm

Declaration
WAM Scientific certifies that the above instrument was successfully tested according to manufacturer's standards and all necessary checks were conducted to ensure the instrument was fully operational prior to dispatch. The calibration data supplied was obtained in accordance with manufacturer's specifications using gases of known concentrations.

Calibrated By	William Pak
Calibration Date	07/11/2024
Calibration Due	07/05/2025

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Certificate of Service and Calibration
Peristaltic Pump
Geotech Geopump 2

Company Name	WAM Scientific
Office Address	26 Bungarra Crescent, Chipping Norton NSW 2170
Phone Number	+61 405 241 484
Contact Name	William Pak
Instrument	Geotech Geopump Peristaltic Pump
Cable Length	4.5m
Serial Number	Pump: 6496
Serial Number	Head: -
Client Name	Zoe Smith/Lucas Dzalakowski/Kieran Young (Senversa Pty Ltd)
Project Number	S20492/S18732/S22013
Comments	-

Instrument Check			
Item	Test	Test Passed	Comments
2 x 12V Batteries	Klein Tools MM300 Multimeter	✓	Both batteries reading above 12V
Battery Terminals	Check	✓	No damage
Charger	Condition/Check	✓	Functioning
Cabling	Check	✓	No damage
Alligator Clips	Check	✓	Protected, no damage
Casing	Check	✓	Clean, no damage
Handle	Check	✓	No damage
Pump Head	Check	✓	EZ2 Head, no damage
Pump Condition	Decontamination	✓	Decontaminated
Pump Operation	Operation	✓	Peristaltic pump functional
Pump Tubing	Replacement	✓	New 0.5m ¼" OD LDPE silicon tubing
Pump Speed	Operation	✓	Speed knob functional

Inclusions
2 x Sealed lead acid 12V batteries included 1x Carry case for 12V batteries included 1x Intrinsically safe charger (clips) included

Declaration
WAM Scientific certifies that the above instrument was successfully tested according to manufacturer's standards and all necessary checks were conducted to ensure the instrument was fully operational prior to dispatch. The pump has been decontaminated and cleaned upon return from the previous hire and is in good working order.

Checked By	William Pak
Calibration Date	14/11/2024
Calibration Due	14/05/2025

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Certificate of Service and Calibration
Peristaltic Pump
Geotech Geopump 2

Company Name	WAM Scientific
Office Address	26 Bungarra Crescent, Chipping Norton NSW 2170
Phone Number	+61 405 241 484
Contact Name	William Pak
Instrument	Geotech Geopump Peristaltic Pump
Cable Length	4.5m
Serial Number	Pump: 6574
Serial Number	Head: -
Client Name	Zoe Smith/Lucas Dzalakowski/Kieran Young (Senversa Pty Ltd)
Project Number	S20492/S18732/S22013
Comments	-

Instrument Check			
Item	Test	Test Passed	Comments
2 x 12V Batteries	Klein Tools MM300 Multimeter	✓	Both batteries reading above 12V
Battery Terminals	Check	✓	No damage
Charger	Condition/Check	✓	Functioning
Cabling	Check	✓	No damage
Alligator Clips	Check	✓	Protected, no damage
Casing	Check	✓	Clean, no damage
Handle	Check	✓	No damage
Pump Head	Check	✓	EZ2 Head, no damage
Pump Condition	Decontamination	✓	Decontaminated
Pump Operation	Operation	✓	Peristaltic pump functional
Pump Tubing	Replacement	✓	New 0.5m ¼" OD LDPE silicon tubing
Pump Speed	Operation	✓	Speed knob functional

Inclusions
2 x Sealed lead acid 12V batteries included 1x Carry case for 12V batteries included 1x Intrinsically safe charger (clips) included

Declaration
WAM Scientific certifies that the above instrument was successfully tested according to manufacturer's standards and all necessary checks were conducted to ensure the instrument was fully operational prior to dispatch. The pump has been decontaminated and cleaned upon return from the previous hire and is in good working order.

Checked By	William Pak
Calibration Date	14/11/2024
Calibration Due	14/05/2025

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Certificate of Service and Calibration

Gas Detector

BW Max XT II

Company Name	WAM Scientific
Office Address	26 Bungarra Crescent, Chipping Norton NSW 2170
Phone Number	+61 405 241 484
Contact Name	William Pak
Instrument	BW Max XT II
Serial Number	MA221-006567
Client Name	Zoe Smith/Lucas Dzalakowski/Kieran Young (Senversa Pty Ltd)
Project Number	S20492/S18732/S22013
Comments	-

Instrument Check			
Item	Test	Test Passed	Comments
Li-Ion Rechargeable Battery	Battery Charge and Drain	✓	Unit runs for > 8 hours on a full charge
Charger	Operation/Check	✓	No damage
Unit Display	Operation	✓	Screen visible, no damage
Keypad	Operation	✓	Responsive, no damage
Pump	Flow Check	✓	Flow rate > 0.5 L/min
Monitor Housing	Condition/Check	✓	No damage
Water Trap Filter	Visual Check	✓	Clean
Alarms	Audible, Visual, Vibration Check	✓	All modes of alarms are functional
Data Logger	Operation	✓	Unit records data, default set at 60 seconds
Sensors	Calibration	✓	Calibrated and conforms to manufacturer's specs
PCB	Operation	✓	Unit is fully functional
Firmware	Version	✓	v12.000

Instrument Readings					
Parameter	Calibration Gas	Concentration	Reference No.	Zero Reading	Span Reading
O_2	Fresh Air	20.9%	950-101225	20.9%	
	Oxygen	18.0%			18.0%
LEL	Methane	2.5% (50% LEL)	950-101225	0%	50%
CO	Carbon Monoxide	100 ppm	950-101225	0 ppm	100 ppm
H_2S	Hydrogen Sulfide	25 ppm	950-101225	0 ppm	25 ppm

Declaration
WAM Scientific certifies that the above instrument was successfully tested according to manufacturer's standards and all necessary checks were conducted to ensure the instrument was fully operational prior to dispatch. The calibration data supplied was obtained in accordance with manufacturer's specifications using gases of known concentrations.

Calibrated By	William Pak
Calibration Date	14/11/2024
Calibration Due	14/05/2025

WAM Scientific:
26 Bungarra Crescent
CHIPPING NORTON NSW 2170
T: +61 405 241 484 | +61 424 198 667
E: rentals@wamscientific.com.au
E: accounts@wamscientific.com.au

WAMSCIENTIFIC
Your water and air monitoring equipment specialists

Certificate of Service and Calibration

Gas Detector

BW Max XT II

Company Name	WAM Scientific
Office Address	26 Bungarra Crescent, Chipping Norton NSW 2170
Phone Number	+61 405 241 484
Contact Name	William Pak
Instrument	BW Max XT II
Serial Number	MA224-025871
Client Name	Zoe Smith/Lucas Dzalakowski/Kieran Young (Senversa Pty Ltd)
Project Number	S20492/S18732/S22013
Comments	-

Instrument Check			
Item	Test	Test Passed	Comments
Li-Ion Rechargeable Battery	Battery Charge and Drain	✓	Unit runs for > 8 hours on a full charge
Charger	Operation/Check	✓	No damage
Unit Display	Operation	✓	Screen visible, no damage
Keypad	Operation	✓	Responsive, no damage
Pump	Flow Check	✓	Flow rate > 0.5 L/min
Monitor Housing	Condition/Check	✓	No damage
Water Trap Filter	Visual Check	✓	Clean
Alarms	Audible, Visual, Vibration Check	✓	All modes of alarms are functional
Data Logger	Operation	✓	Unit records data, default set at 60 seconds
Sensors	Calibration	✓	Calibrated and conforms to manufacturer's specs
PCB	Operation	✓	Unit is fully functional
Firmware	Version	✓	v12.000

Instrument Readings					
Parameter	Calibration Gas	Concentration	Reference No.	Zero Reading	Span Reading
O_2	Fresh Air	20.9%	950-101225	20.9%	
	Oxygen	18.0%			18.0%
LEL	Methane	2.5% (50% LEL)	950-101225	0%	50%
CO	Carbon Monoxide	100 ppm	950-101225	0 ppm	100 ppm
H_2S	Hydrogen Sulfide	25 ppm	950-101225	0 ppm	25 ppm

Declaration
WAM Scientific certifies that the above instrument was successfully tested according to manufacturer's standards and all necessary checks were conducted to ensure the instrument was fully operational prior to dispatch. The calibration data supplied was obtained in accordance with manufacturer's specifications using gases of known concentrations.

Calibrated By	William Pak
Calibration Date	14/11/2024
Calibration Due	14/05/2025

WAM Scientific:
26 Bungarra Crescent
CHIPPING NORTON NSW 2170
T: +61 405 241 484 | +61 424 198 667
E: rentals@wamscientific.com.au
E: accounts@wamscientific.com.au

Senversa Pty Ltd
www.senversa.com.au
ABN 89 132 231 380

Senversa PID Calibration Log

Project No:	S22013	**Project:**	GPSA lane Cove
PID Unit Type:	MiniRAE3000+	**Regulator Model No:**	ODFR-1001
Model No:	PGM7320	**Serial No:**	592-932890

Unit power on	✓	**Date/time correct**	✓
Fully charged	✓	**Pump working**	✓
Alarm functioning	✓	**Backlight functioning**	✓
Filter clean	✓	**Inlet flow clear**	✓

Calibration start time:	9:00	**Calibration end time:**	9:07
PID	**Span gas**	**Value**	**Reading**
	Air	0.0 ppm	0
	Isobutylene	100 ppm	100.4

Comments

Calibration successful:	✓
Calibration date:	11/11/24
Calibrated by:	WD

Senversa Pty Ltd
www.senversa.com.au
ABN 89 132 231 380

Senversa PID Calibration Log

Project No:	S22013	**Project:**	GPSA lane Cove
PID Unit Type:	MiniRAE3000+	**Regulator Model No:**	ODFR-1001
Model No:	PGM7320	**Serial No:**	592-932890

Unit power on	✓	**Date/time correct**	✓
Fully charged	✓	**Pump working**	✓
Alarm functioning	✓	**Backlight functioning**	✓
Filter clean	✓	**Inlet flow clear**	✓

Calibration start time:	8:11	**Calibration end time:**	8:15
PID	**Span gas**	**Value**	**Reading**
	Air	0.0 ppm	0
	Isobutylene	100 ppm	100.7

Comments

Calibration successful:	✓
Calibration date:	12/11/24
Calibrated by:	WD

Senversa Pty Ltd
www.senversa.com.au
ABN 89 132 231 380

Senversa PID Calibration Log

Project No:	S22013	**Project:**	GPSA lane Cove
PID Unit Type:	MiniRAE3000+	**Regulator Model No:**	ODFR-1001
Model No:	PGM7320	**Serial No:**	592-932890

Unit power on	✓	**Date/time correct**	✓
Fully charged	✓	**Pump working**	✓
Alarm functioning	✓	**Backlight functioning**	✓
Filter clean	✓	**Inlet flow clear**	✓

Calibration start time:	7:26	**Calibration end time:**	8:30
PID	**Span gas**	**Value**	**Reading**
	Air	0.0 ppm	0
	Isobutylene	100 ppm	100.3

Comments

Calibration successful:	✓
Calibration date:	13 / 11 / 24
Calibrated by:	WD

Senversa Pty Ltd
www.senversa.com.au
ABN 89 132 231 380

Senversa PID Calibration Log

Project No:	S22013	**Project:**	GPSA lane Cove
PID Unit Type:	MiniRAE3000+	**Regulator Model No:**	ODFR-1001
Model No:	PGM7320	**Serial No:**	592-932890

Unit power on	✓	**Date/time correct**	✓
Fully charged	✓	**Pump working**	✓
Alarm functioning	✓	**Backlight functioning**	✓
Filter clean	✓	**Inlet flow clear**	✓

Calibration start time:	9:12	**Calibration end time:**	9:16
PID	**Span gas**	**Value**	**Reading**
	Air	0.0 ppm	0
	Isobutylene	100 ppm	100.1

Comments

Calibration successful:	✓
Calibration date:	14/11/24
Calibrated by:	WD

Senversa Pty Ltd
www.senversa.com.au
ABN 89 132 231 380

Senversa PID Calibration Log

Project No:	S22013	**Project:**	GPSA lane Cove
PID Unit Type:	MiniRAE3000+	**Regulator Model No:**	ODFR-1001
Model No:	PGM7320	**Serial No:**	592-932890

Unit power on	✓	**Date/time correct**	✓
Fully charged	✓	**Pump working**	✓
Alarm functioning	✓	**Backlight functioning**	✓
Filter clean	✓	**Inlet flow clear**	✓

Calibration start time:	7 43	**Calibration end time:**	7 45
PID	**Span gas**	**Value**	**Reading**
	Air	0.0 ppm	0
	Isobutylene	100 ppm	100 6

Comments

Calibration successful:	✓
Calibration date:	15 / 11 / 24
Calibrated by:	WD

Appendix D: Survey Data

V-Mark Survey Pty Ltd T/As
Australian Locating Services
ABN 12 109 067 950

Head Office: 18/75 Pacific Highway
Waitara NSW 2077

Central Coast : Bldg 3, 1-10 Amy Close
North Wyong NSW 2259

Senversa
Level 24
1 Market Street
Sydney NSW 2000

21st November 2024

Dear Zoe

RE: 12 Mars Rd, Lane Cove

	EASTING	NORTHING	GROUND LEVEL	TOP OF PIPE
MW01	328657.943	6257257.110	48.715	48.620
MW02	328635.286	6257098.845	38.004	37.935
MW03	328697.695	6257104.719	38.097	37.994
MW04	328737.109	6257161.521	37.856	37.779
MW05	328756.358	6257241.788	41.700	41.620
MW06	328690.126	6257248.856	48.387	48.365

GPS (CorsNET) HAS BEEN USED TO ESTABLISH VERTICAL AND HORIZONTAL DATUM/CONTROL AND HAS BEEN ADJUSTED TO SSM149650

Kind Regards

Dave Berry
DIRECTOR
Australian Locating Services

Appendix E: Field Forms

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Well Development Record

Site and Job Information				Well Information			
Job Number:	**S22013**			**Well ID:**	**MW02**	**Well Condition:**	new
Project Name:	**Lane Cove West DSI**			**Well Type (monitor, extraction, other):**	monitoring	**Well Diameter (m):**	0.05
Client:	**Goodman**			**Well Construction (flush, stickup):**	flush	**Drilling Diameter (m):**	0.10
Location:	**12 Mars Road, Lane Cove West**			**Top of casing compared to ground level (m):**	-0.01	**Top of filter pack (m btoc):**	4.50
				Top of screen (m btoc):	5.00	**Bottom of screen (m btoc)**	8.00
				Well Material (PVC, stainless steel, other):	pvc	**Bore Volumes required:**	3

Well Gauging Details				Well Development Details	
Date:	13/11/2024	**Product Confirmed?:**	No	**Development Method (e.g. surge block, pump, steel bailer, foot valve, bailer):**	steel bailer and twister pump
Time:	9:05	**Depth to Product (m btoc):**	N/A	**Water Collection Depth (e.g. pump intake setting, m btoc):**	7.94m
Depth to Water (m btoc):	1.89	**Product Thickness (m):**	N/A	**Well Volume Calculation (L):#**	53.9
Total Depth of Well (m btoc):	7.94	**Product Description:**	N/A	**Waste Disposal (e.g. drums, stormwater, sewer, surface, etc.):**	drums

Field Chemistry (if required)

Time	Pump Rate (L/min)	Volume (L)	SWL (m btoc)	DO (mg/L) ±10%	EC (µS/cm) ±3%	pH ±0.05	Redox (mV) ±10mV	Temp (°C) ±10%	Observations (odour, sheen, colour, turbidity)
9:13	steel bailer	1.0	2.77						brown, no sheen, no odour, highly turbid
9:24	steel bailer	6.0	3.56						light brown, no sheen, no odour, moderately turbid. Change to twister pump
9:31	twister pump	21.0	5.46						light brown, no sheen, no odour, slighty turbid.
9:43	twister pump	27.0	7.64						light brown, no sheen, no odour, slighty turbid.
15:23	-	-	4.98						light brown, no sheen, no odour
15:35	Steel bailer	37.0	7.75						colourless with light brown sediment, slightly turbid, no odour, no sheen
9:38	Twister	57.0	7.70						SWL 2.66 mBTOC before starting. Groundwater colourless, non-turbid, no odour, no sheen
Parameter stabilised?:				**Yes / No**	**Yes / No**	**Yes / No**	**Yes / No**	**Yes / No**	

Other Comments

Authorisation		Notes
Developed By: Hayley Yellowlees	**Signature:** H. Yellowlees	# Purge Volume = effective porosity assumed as 0.3 Well development is considered complete when the following conditions are met: The well is clean of particle and the water is relatively clear and free of fines. Parameters and water level are stable, i.e three consective readings (obtaied several minutes apart). Well development techniques and required volume must be discussed with PM /PD and consider drilling methods (introduced water, caking of annulas from augering, formation conditions (high/low yeild), etc.
Checked By: Lucas Dzalakowski	**Signature:**	

senversa

Well Development Record

Site and Job Information		Well Information			
Job Number:	**S22013**	**Well ID:**	**MW03**	**Well Condition:**	new
Project Name:	**Lane Cove West DSI**	**Well Type (monitor, extraction, other):**	monitoring	**Well Diameter (m):**	0.05
Client:	**Goodman**	**Well Construction (flush, stickup):**	flush	**Drilling Diameter (m):**	0.10
Location:	**12 Mars Road, Lane Cove West**	**Top of casing compared to ground level (m):**	0.10	**Top of filter pack (m btoc):**	4.50
		Top of screen (m btoc):	5.00	**Bottom of screen (m btoc)**	8.00
		Well Material (PVC, stainless steel, other):	pvc	**Bore Volumes required:**	3

Well Gauging Details				Well Development Details	
Date:	13/11/2024	**Product Confirmed?:**	No	**Development Method (e.g. surge block, pump, steel bailer, foot valve, bailer):**	steel bailer and twister pump
Time:	10:52	**Depth to Product (m btoc):**	N/A	**Water Collection Depth (e.g. pump intake setting, m btoc):**	7.94m
Depth to Water (m btoc):	3.09	**Product Thickness (m):**	N/A	**Well Volume Calculation (L):#**	46.8
Total Depth of Well (m btoc):	7.94	**Product Description:**	N/A	**Waste Disposal (e.g. drums, stormwater, sewer, surface, etc.):**	drums

Field Chemistry (if required)

Time	Pump Rate (L/min)	Volume (L)	SWL (m btoc)	DO (mg/L) ±10%	EC (µS/cm) ±3%	pH ±0.05	Redox (mV) ±10mV	Temp (°C) ±10%	Observations (odour, sheen, colour, turbidity)
10:53	steel bailer	4.5	4.82						light brown, no sheen, no odour, clippings of pvc pipe
11:11	steel bailer	7.5	5.18						light brown, no sheen, no odour, switching to twister pump
11:14	twister pump	9.5	5.58						light brown, no sheen, no odour
11:18	twister pump	-	5.44						
15:58		-	3.75						
16:15	Steel bailer	19.5	7.64						colourless water with light brown sediment, slightly turbid, no odour, no sheen
10:12	Twister	32.5	7.70						SWL at start - 2.66 mBTOC. Colourless, non-turbid, no odour, no sheen
Parameter stabilised?:				**Yes / No**	**Yes / No**	**Yes / No**	**Yes / No**	**Yes / No**	

Other Comments

Authorisation		Notes
Developed By: Hayley Yellowlees	**Signature:**	# Purge Volume = effective porosity assumed as 0.3 Well development is considered complete when the following conditions are met: The well is clean of particle and the water is relatively clear and free of fines. Parameters and water level are stable, i.e three consective readings (obtaied several minutes apart). Well development techniques and required volume must be discussed with PM /PD and consider drilling methods (introduced water, caking of annulas from augering, formation conditions (high/low yeild), etc.
Checked By: Lucas Dzalakowski	**Signature:**	

senversa

Well Development Record

Site and Job Information		Well Information			
Job Number:	**S22013**	**Well ID:**	**MW04**	**Well Condition:**	New
Project Name:	**Lane Cove West DSI**	**Well Type (monitor, extraction, other):**	Monitor	**Well Diameter (m):**	0.05
Client:	**Goodman**	**Well Construction (flush, stickup):**	Flush	**Drilling Diameter (m):**	0.15
Location:	**12 Mars Road, Lane Cove West**	**Top of casing compared to ground level (m):**	-0.01	**Top of filter pack (m btoc):**	4.50
		Top of screen (m btoc):	5.00	**Bottom of screen (m btoc)**	8.00
		Well Material (PVC, stainless steel, other):	PVC	**Bore Volumes required:**	3

Well Gauging Details				Well Development Details	
Date:	13/11/2024	**Product Confirmed?:**	No	**Development Method (e.g. surge block, pump, steel bailer, foot valve, bailer):**	Steel bailer / twister pump
Time:	15:14	**Depth to Product (m btoc):**	N/A	**Water Collection Depth (e.g. pump intake setting, m btoc):**	-
Depth to Water (m btoc):	2.17	**Product Thickness (m):**	N/A	**Well Volume Calculation (L):#**	82.6
Total Depth of Well (m btoc):	7.94	**Product Description:**	N/A	**Waste Disposal (e.g. drums, stormwater, sewer, surface, etc.):**	Drum

Field Chemistry (if required)

Time	Pump Rate (L/min)	Volume (L)	SWL (m btoc)	DO (mg/L) ±10%	EC (µS/cm) ±3%	pH ±0.05	Redox (mV) ±10mV	Temp (°C) ±10%	Observations (odour, sheen, colour, turbidity)
16:37	Steel bailer	13.0	5.96						light brown, highly turbid, no odour, no sheen
17:10	Twister	18.0	7.50						light brown, highly turbid, no odour, no sheen
7:37	Twister	43.0	7.50						SWL 1.85 mBTOC before starting. Groundwater light brown, slightly turbid, no odour, no sheen
10:38	Twister	48.0	7.60						Colourless, non-turbid, no odour, no sheen
Parameter stabilised?:				**Yes / No**	**Yes / No**	**Yes / No**	**Yes / No**	**Yes / No**	

Other Comments

Authorisation

Developed By: Hayley Yellowlees — **Signature:**

Checked By: Lucas Dzalakowski — **Signature:**

Notes

Purge Volume = effective porosity assumed as 0.3
Well development is considered complete when the following conditions are met:
The well is clean of particle and the water is relatively clear and free of fines.
Parameters and water level are stable, i.e three consective readings (obtaied several minutes apart).
Well development techniques and required volume must be discussed with PM /PD and consider drilling methods (introduced water, caking of annulas from augering, formation conditions (high/low yeild), etc.

senversa

Well Development Record

Site and Job Information				Well Information			
Job Number:	**S22013**			**Well ID:**	**MW05**	**Well Condition:**	New
Project Name:	**Lane Cove West DSI**			**Well Type (monitor, extraction, other):**	Monitor	**Well Diameter (m):**	0.05
Client:	**Goodman**			**Well Construction (flush, stickup):**	Flush	**Drilling Diameter (m):**	0.10
Location:	**12 Mars Road, Lane Cove West**			**Top of casing compared to ground level (m):**	-0.01	**Top of filter pack (m btoc):**	4.50
				Top of screen (m btoc):	5.00	**Bottom of screen (m btoc)**	8.00
				Well Material (PVC, stainless steel, other):	PVC	**Bore Volumes required:**	3

Well Gauging Details				Well Development Details	
Date:	13/11/2024	**Product Confirmed?:**	No	**Development Method (e.g. surge block, pump, steel bailer, foot valve, bailer):**	Steel bailer / Twister pump
Time:	13:17	**Depth to Product (m btoc):**	N/A	**Water Collection Depth (e.g. pump intake setting, m btoc):**	-
Depth to Water (m btoc):	4.13	**Product Thickness (m):**	N/A	**Well Volume Calculation (L):#**	40.5
Total Depth of Well (m btoc):	7.92	**Product Description:**	N/A	**Waste Disposal (e.g. drums, stormwater, sewer, surface, etc.):**	Drums

Field Chemistry (if required)

Time	Pump Rate (L/min)	Volume (L)	SWL (m btoc)	DO (mg/L) ±10%	EC (µS/cm) ±3%	pH ±0.05	Redox (mV) ±10mV	Temp (°C) ±10%	Observations (odour, sheen, colour, turbidity)
13:33	Steel bailer	5.0	5.77						light brown, highly turbid, no odour, no sheen
13:46	Twister	10.0	7.65						light brown, moderately turbid, no odour, no sheen
8:51	Twister	25.0	7.70						SWL 4.26 mBTOC before starting. Groundwater light brown, slightly turbid, no odour, no sheen
11:10	Steel bailer	30.0	7.68						Colourless with some light brown sediment, slightly turbid, no odour, no sheen
Parameter stabilised?:				**Yes / No**	**Yes / No**	**Yes / No**	**Yes / No**	**Yes / No**	

Other Comments

Authorisation		Notes
Developed By: Hayley Yellowlees	**Signature:**	# Purge Volume = effective porosity assumed as 0.3 Well development is considered complete when the following conditions are met: The well is clean of particle and the water is relatively clear and free of fines. Parameters and water level are stable, i.e three consective readings (obtaied several minutes apart). Well development techniques and required volume must be discussed with PM /PD and consider drilling methods (introduced water, caking of annulas from augering, formation conditions (high/low yeild), etc.
Checked By: Lucas Dzalakowski	**Signature:**	

Monitoring Round: S22013_GME

Location Visit

Site ID	GoodmanMars Road	**Monitoring Zone**	
Location Code	MW02		
Arrival Date/Time	21/11/2024 08:14AM	**Departure Date/Time**	21/11/2024 09:11AM
Executed By	Lucas Dzalakowski		
Weather			
Comments			

Well Information

Gatic Type	New
Key Type	8mm hex key
Well Condition	New

Authorisation

Checked By	Megan Ferguson
Date Checked	22 Nov 2024 03:23 PM

Groundwater Data

Well	MW02	**Date/Time**	21/11/2024 08:15AM
Measurement Method	Dip	**Dry**	No
Water Depth (mbTOC)	1.9	**Well Depth (mbTOC)**	7.97
Product Depth (mbTOC)			
Comments & Product Description			
Equipment ID			
Sediment Thickness (m)			
Depth to Water with Pump (m)			

gauging

Well Head PID (PPM)	
Product Confirmed by Bailer	No

Sample Data

Sampled Date/Time	21/11/2024 08:29AM
Well	MW02
Matrix Type	Water
Equipment ID	
Sample Comments	
Field ID (Primary)	MW02

Purge Method	Low flow (peri)
Sample Method	Low flow (peri)
Waste Disposal	Drums

Purge Observations (purge start)

Purge Colour (Description)	colourless
Purge Odour (Description)	earthy/wood odour
Purge Sheen (Description)	no sheen
Purge Turbidity (Description)	Non-turbid

Sample Observations (purge end)

Sample Colour (Description)	colourless
Sample Odour (Description)	no odour
Sample Sheen (Description)	no sheen
Sample Turbidity (Description)	Non-turbid

QA Samples

QA Sample ID (1)	QC206
QA Sample ID (2)	
QA Sample ID (3)	
QA Sample ID (4)	

Purge/Sampling Comments

Air Bubbles in Vials	No
Headspace PID Reading(s)	
Reaction with Preservatives	No
Recharge-ability	Poor <0.1L/min
Water Depth at end of Sampling (m)	4.37

Field Chemistry

	Pump Inlet Depth	Standing Water Level	Purge rate (Field)	EC (Field)	pH (Field)	Redox (Field)	Dissolved Oxygen (Field)	Temp (Field)	Purge Volume
Time	**m bTOC**	**m bTOC**	**L/min**	**uS/cm**	**pH Units**	**mV**	**mg/L**	**° C**	**L**
08:35AM	7.5	2.14	0.1	808	4.56	108.2	8.39	18.7	0.2
08:38AM	7.5	2.38	0.1	729	4.63	92.6	7.06	18.6	0.5
08:41AM	7.5	2.72	0.1	720	4.69	90.7	6.05	18.6	0.8
08:46AM	7.5	3.07	0.1	719	4.74	94.5	5.29	18.6	1.1
08:49AM	7.5	3.54	0.1	717	4.75	97	5.32	18.6	1.4
08:52AM	7.5	3.84	0.1	717	4.75	100.7	5.26	18.6	1.7
08:55AM	7.5	4.11	0.1	716	4.75	102.9	5.4	18.6	2
Stabilisation *				±3% (3)	±0.05pH (3)	±10mV (3)	±10% (3)	±10% (3)	

Green indicates readings have stabilised according to the criteria shown, red indicates they haven't. The number in brackets indicates the number of readings that need to meet the criteria for the readings to be considered stable.

Monitoring Round: S22013_GME

Location Visit

Site ID	GoodmanMars Road	**Monitoring Zone**	
Location Code	MW03		
Arrival Date/Time	21/11/2024 09:32AM	**Departure Date/Time**	21/11/2024 10:24AM
Executed By	Lucas Dzalakowski		
Weather			
Comments			

Well Information

Gatic Type	New
Key Type	8mm hex key
Well Condition	New

Authorisation

Checked By	Megan Ferguson
Date Checked	22 Nov 2024 03:24 PM

Groundwater Data

Well	MW03	**Date/Time**	21/11/2024 09:33AM
Measurement Method	Dip	**Dry**	No
Water Depth (mbTOC)	3.12	**Well Depth (mbTOC)**	7.93
Product Depth (mbTOC)			
Comments & Product Description			
Equipment ID			
Sediment Thickness (m)			
Depth to Water with Pump (m)			

gauging

Well Head PID (PPM)	
Product Confirmed by Bailer	No

Sample Data

Sampled Date/Time	21/11/2024 09:36AM
Well	MW03
Matrix Type	Water
Equipment ID	
Sample Comments	
Field ID (Primary)	MW03

Purge Method	Low flow (peri)
Sample Method	Low flow (peri)
Waste Disposal	Drums

Purge Observations (purge start)

Purge Colour (Description)	colourless
Purge Odour (Description)	earthy/wood odour
Purge Sheen (Description)	no sheen
Purge Turbidity (Description)	Non-turbid

Sample Observations (purge end)

Sample Colour (Description)	colourless
Sample Odour (Description)	no odour
Sample Sheen (Description)	no sheen
Sample Turbidity (Description)	Non-turbid

QA Samples

QA Sample ID (1)	
QA Sample ID (2)	
QA Sample ID (3)	
QA Sample ID (4)	

Purge/Sampling Comments

Air Bubbles in Vials	No
Headspace PID Reading(s)	
Reaction with Preservatives	No
Recharge-ability	Poor <0.1L/min
Water Depth at end of Sampling (m)	4.74

Field Chemistry

	Pump Inlet Depth	Standing Water Level	Purge rate (Field)	EC (Field)	pH (Field)	Redox (Field)	Dissolved Oxygen (Field)	Temp (Field)	Purge Volume
Time	**m bTOC**	**m bTOC**	**L/min**	**uS/cm**	**pH Units**	**mV**	**mg/L**	**° C**	**L**
09:41AM	7.5	3.33	0.1	517	4.39	153.1	2.05	19.5	0.2
09:44AM	7.5	3.51	0.1	504	4.32	143.9	1.75	19.4	0.5
09:47AM	7.5	3.86	0.1	503	4.32	137.5	2.36	19.4	0.8
09:50AM	7.5	4.11	0.1	503	4.33	133.1	1.9	19.4	1.1
09:53AM	7.5	4.35	0.1	504	4.34	129.6	1.86	19.4	1.4
09:57AM	7.5	4.54	0.1	505	4.35	126.4	1.94	19.5	1.7
10:00AM	7.5	4.77	0.1	506	4.35	124.6	1.96	19.5	2
Stabilisation *				±3% (3)	±0.05pH (3)	±10mV (3)	±10% (3)	±10% (3)	

Green indicates readings have stabilised according to the criteria shown, red indicates they haven't. The number in brackets indicates the number of readings that need to meet the criteria for the readings to be considered stable.

Monitoring Round: S22013_GME

Location Visit

Site ID	GoodmanMars Road	**Monitoring Zone**	
Location Code	MW04		
Arrival Date/Time	21/11/2024 10:50AM	**Departure Date/Time**	21/11/2024 11:30AM
Executed By	Lucas Dzalakowski		
Weather			
Comments			

Well Information

Gatic Type	New
Key Type	8mm hex key
Well Condition	New

Authorisation

Checked By	Megan Ferguson
Date Checked	22 Nov 2024 03:24 PM

Groundwater Data

Well	MW04	**Date/Time**	21/11/2024 10:50AM
Measurement Method	Dip	**Dry**	No
Water Depth (mbTOC)	1.43	**Well Depth (mbTOC)**	7.98
Product Depth (mbTOC)			
Comments & Product Description			
Equipment ID			
Sediment Thickness (m)			
Depth to Water with Pump (m)			

gauging

Well Head PID (PPM)	
Product Confirmed by Bailer	No

Sample Data

Sampled Date/Time	21/11/2024 10:54AM
Well	MW04
Matrix Type	Water
Equipment ID	
Sample Comments	
Field ID (Primary)	MW04

Purge Method	Low flow (peri)
Sample Method	Low flow (peri)
Waste Disposal	Drums

Purge Observations (purge start)

Purge Colour (Description)	colourless
Purge Odour (Description)	chemical odour
Purge Sheen (Description)	no sheen
Purge Turbidity (Description)	Non-turbid

Sample Observations (purge end)

Sample Colour (Description)	colourless
Sample Odour (Description)	chemical odour
Sample Sheen (Description)	no sheen
Sample Turbidity (Description)	Non-turbid

QA Samples

QA Sample ID (1)	
QA Sample ID (2)	
QA Sample ID (3)	
QA Sample ID (4)	

Purge/Sampling Comments

Air Bubbles in Vials	No
Headspace PID Reading(s)	
Reaction with Preservatives	No
Recharge-ability	Poor <0.1L/min
Water Depth at end of Sampling (m)	3.34

Field Chemistry

	Pump Inlet Depth	Standing Water Level	Purge rate (Field)	EC (Field)	pH (Field)	Redox (Field)	Dissolved Oxygen (Field)	Temp (Field)	Purge Volume
Time	**m bTOC**	**m bTOC**	**L/min**	**uS/cm**	**pH Units**	**mV**	**mg/L**	**° C**	**L**
10:58AM	7.5	1.62	0.1	504	5.19	164	4.83	21.8	0.2
11:01AM	7.5	1.75	0.1	493	5.19	153.4	4.46	21.6	0.5
11:03AM	7.5	1.96	0.1	489	5.21	147.5	4.53	21.7	0.8
11:06AM	7.5	2.23	0.1	490	5.21	142.2	4.62	21.3	1.1
11:09AM	7.5	2.34	0.1	489	5.2	138.4	4.67	21.3	1.4
11:12AM	7.5	2.74	0.1	486	5.2	135.7	4.64	21.7	1.7
Stabilisation *				±3% (3)	±0.05pH (3)	±10mV (3)	±10% (3)	±10% (3)	

Green indicates readings have stabilised according to the criteria shown, red indicates they haven't. The number in brackets indicates the number of readings that need to meet the criteria for the readings to be considered stable.

Monitoring Round: S22013_GME

Location Visit

Site ID	GoodmanMars Road	**Monitoring Zone**	
Location Code	MW05		
Arrival Date/Time	21/11/2024 11:39AM	**Departure Date/Time**	21/11/2024 12:15PM
Executed By	Lucas Dzalakowski		
Weather			
Comments			

Well Information

Gatic Type	New
Key Type	8mm hex key
Well Condition	New

Authorisation

Checked By	Megan Ferguson
Date Checked	22 Nov 2024 03:24 PM

Groundwater Data

Well	MW05	**Date/Time**	21/11/2024 11:40AM
Measurement Method	Dip	**Dry**	No
Water Depth (mbTOC)	3.94	**Well Depth (mbTOC)**	7.93
Product Depth (mbTOC)			
Comments & Product Description			
Equipment ID			
Sediment Thickness (m)			
Depth to Water with Pump (m)			

gauging

Well Head PID (PPM)	
Product Confirmed by Bailer	No

Sample Data

Sampled Date/Time	21/11/2024 11:41AM
Well	MW05
Matrix Type	Water
Equipment ID	
Sample Comments	
Field ID (Primary)	MW05

Purge Method	Low flow (peri)
Sample Method	Low flow (peri)
Waste Disposal	Drums

Purge Observations (purge start)

Purge Colour (Description)	light brown
Purge Odour (Description)	no odour
Purge Sheen (Description)	no sheen
Purge Turbidity (Description)	Slightly turbid

Sample Observations (purge end)

Sample Colour (Description)	colourless
Sample Odour (Description)	no odour
Sample Sheen (Description)	no sheen
Sample Turbidity (Description)	Non-turbid

QA Samples

QA Sample ID (1)	
QA Sample ID (2)	
QA Sample ID (3)	
QA Sample ID (4)	

Purge/Sampling Comments

Air Bubbles in Vials	No
Headspace PID Reading(s)	
Reaction with Preservatives	No
Recharge-ability	Poor <0.1L/min
Water Depth at end of Sampling (m)	5.11

Field Chemistry

Time	Pump Inlet Depth	Standing Water Level	Purge rate (Field)	EC (Field)	pH (Field)	Redox (Field)	Dissolved Oxygen (Field)	Temp (Field)	Purge Volume
	m bTOC	m bTOC	L/min	uS/cm	pH Units	mV	mg/L	° C	L
11:46AM	7.5	4.16	0.1	419.4	5.31	137.7	4.61	20.1	0.2
11:49AM	7.5	4.41	0.1	414.3	5.29	130.9	4.79	20.1	0.5
11:52AM	7.5	4.56	0.1	414.7	5.3	130.6	4.77	20.1	0.8
11:55AM	7.5	4.67	0.1	417.7	5.34	131.8	4.82	20.1	1.1
11:58AM	7.5	4.84	0.1	421.7	5.37	131.9	4.68	20.1	1.4
12:01PM	7.5	4.94	0.1	425.3	5.39	130.5	4.6	20.2	1.7
12:04PM	7.5	5.03	0.1	428.9	5.42	128.5	4.48	20.2	2
Stabilisation *				±3% (3)	±0.05pH (3)	±10mV (3)	±10% (3)	±10% (3)	

Green indicates readings have stabilised according to the criteria shown, red indicates they haven't. The number in brackets indicates the number of readings that need to meet the criteria for the readings to be considered stable.

Monitoring Round: S22013_GME

Location Visit

Site ID	GoodmanMars Road	**Monitoring Zone**	
Location Code	MW01		
Arrival Date/Time	21/11/2024 12:53PM	**Departure Date/Time**	
Executed By	Lucas Dzalakowski		
Weather			
Comments	Very little water in well, grab sample taken		

Well Information

Gatic Type	New
Key Type	8mm hex key
Well Condition	New

Authorisation

Checked By	Megan Ferguson
Date Checked	22 Nov 2024 03:25 PM

Groundwater Data

Well	MW01	**Date/Time**	21/11/2024 12:53PM
Measurement Method	Dip	**Dry**	No
Water Depth (mbTOC)	8.7	**Well Depth (mbTOC)**	9
Product Depth (mbTOC)			
Comments & Product Description			
Equipment ID			
Sediment Thickness (m)			
Depth to Water with Pump (m)			

gauging

Well Head PID (PPM)	
Product Confirmed by Bailer	No

Sample Data

Sampled Date/Time	21/11/2024 12:53PM
Well	MW01
Matrix Type	Water
Equipment ID	
Sample Comments	
Field ID (Primary)	MW01

Purge Method	Low flow (peri)
Sample Method	Low flow (peri)
Waste Disposal	Drums

Purge Observations (purge start)

Purge Colour (Description)	colourless
Purge Odour (Description)	no odour
Purge Sheen (Description)	no sheen
Purge Turbidity (Description)	Slightly turbid

Sample Observations (purge end)

Sample Colour (Description)	colourless
Sample Odour (Description)	no odour
Sample Sheen (Description)	no sheen
Sample Turbidity (Description)	Non-turbid

QA Samples

QA Sample ID (1)	
QA Sample ID (2)	
QA Sample ID (3)	
QA Sample ID (4)	

Purge/Sampling Comments

Air Bubbles in Vials	No
Headspace PID Reading(s)	
Reaction with Preservatives	No
Recharge-ability	
Water Depth at end of Sampling (m)	9

Field Chemistry

Time	Pump Inlet Depth	Standing Water Level	Purge rate (Field)	EC (Field)	pH (Field)	Redox (Field)	Dissolved Oxygen (Field)	Temp (Field)	Purge Volume
	m bTOC	m bTOC	L/min	uS/cm	pH Units	mV	mg/L	° C	L
12:53PM	9	8.8	0.1	876	6.37	116.7	4.58	22.1	0.2
Stabilisation *				±3% (3)	±0.05pH (3)	±10mV (3)	±10% (3)	±10% (3)	

Green indicates readings have stabilised according to the criteria shown, red indicates they haven't. The number in brackets indicates the number of readings that need to meet the criteria for the readings to be considered stable.

Appendix F: Laboratory Reports

CoC updated: 18/11/24, 1832

S22013, Mars Road DSI

	Sample Name	Lab Report	Comment	Date Time	Combo 1M	PFAS Shot Suite	BTEX	Combo 5AN	Combo 3	Combo 5	VOC	Asbestos ID	Asbestos NEPM	TCLP PFAS short suite	HOLD
1	BH14_0.16-0.2	366091	-	11/11/2024 9:41		X		X						X	
2	BH14_0.5-0.6	366091	-	11/11/2024 9:41											X
3	BH14_2.0-2.2	366091	-	11/11/2024 9:56											X
4	BH14_3.0-3.2	366091	-	11/11/2024 10:22											X
5	BH14_4.0-4.2	366091	-	11/11/2024 10:38					X		X				
6	BH14_5.0-5.2	366091	-	11/11/2024 10:49											X
7	BH14_6.0-6.2	366091	-	11/11/2024 11:08											X
8	BH14_7.0-7.2	366091	-	11/11/2024 11:24											X
9	BH14_7.8-8.0	366091	-	11/11/2024 12:28					X						
10	BH16_0.16-0.2	366091	-	11/11/2024 14:14											X
11	BH16_0.5-0.6	366091	-	11/11/2024 14:20											X
12	BH16_1.0-1.2	366091	-	11/11/2024 14:40		X		X			X			X	
13	BH16_2.0-2.1	366091	-	11/11/2024 15:41											X
14	BH16_4.0-4.1	366091	-	11/11/2024 16:18					X						
15	BH16_6.0-6.1	366091	-	11/11/2024 16:53											X
16	BH28_0.0-0.2	366091	-	11/11/2024 16:23				X							
17	BH28_0.5-0.6	366091	-	11/11/2024 16:23											X
18	BH28_0.9-1.0	366091	-	11/11/2024 16:23				X			X				
19	BH29_0.0-0.1	366091	-	12/11/2024 8:04				X							
20	PACM_01	366091	-	11/11/2024								X			
21	PACM_02	366091	-	11/11/2024								X			
22	QC300	366091	-	11/11/2024 0:00	X	X									
23	QC400	366091	-	11/11/2024 0:00			X								

ENVIROLAB GROUP
Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 366091

Date Received: 12/11/24
Time Received: 0900
Received By: KC
Temp: Cool/Ambient
Cooling: Ice/Icepack 5°C
Security: Intact/Broken/None

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 366091

Date Received: 12/11/24
Time Received: 0900
Received By: uc
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

5°C

Laboratory:
Address:
Contact: Sample Receipt
Phone:

Chain of Custody Documentation

senversa
Senversa Pty Ltd
www.senversa.com.au
ABN 89 132 231 380

Job Number:	522013	Purchase Order:	
Project Name:	Mavs Road DSI	Quote No:	245516v2
Sampled By:	LO HY	Turn Around Time:	
Project Manager:	Zoe Smith	Page:	1 of 2
Email Report To:	zoe.smith@senversa.com.au	Phone/Mobile:	

Lab ID	Sample ID	Matrix *	Date	Time	Container Info: Type / Code	Container Info: Total Bottles	Analysis Required: Heavy metals 8	BTEXN	TRH	PAH	OCP	PCB	VOC	PFAS	Asbestos Quantification	Asbestos absent / present for Trench	HOLD	Comments: e.g. Highly contaminated sample; hazardous materials present; trace LORs etc.
1	BH14_0.16-0.2	Soil	11/11/24	AM	ACMBag, Jar, PFAS	x3											X	
2	BH14_0.5-0.6				JAR, PFAS	x2											X	
3	BH14_2.0-2.2				JAR, PFAS	x2											X	
4	BH14_3.0-3.2				JAR, PFAS	x2											X	
5	BH14_4.0-4.2				JAR, PFAS	x2											X	
6	BH14_5.0-5.2				JAR, PFAS	x2											X	
7	BH14_6.0-6.2				JAR, PFAS	x2											X	
8	BH14_7.0_7.2				JAR, PFAS	x2											X	
9	BH14_7.9-8.0				JAR, PFAS	x2											X	
10	BH16_0.16-0.2					x3											X	
11	BH16_0.5-0.6					x2											X	
12	BH16_1.0-1.1					x3											X	
13	BH16_2.0-2.1					x2											X	
14	BH16_4.0-4.1					x2											X	
15	BH16_6.0-6.1					x2											X	
Total																		

Sampler: I attest that proper field sampling procedures in accordance with Senversa standard procedures and/or project specifications were used during the collection of these samples:

Sampler Name: Lucas Dzwiekowski | Signature: | Date: 11/11/24

Relinquished By:		Method of Shipment (if applicable):	Received by:	
Name/Signature: Lucas Dzwiekowski	Date: 11/11/24	Carrier / Reference #:	Name/Signature: Katherine Chevez	Date: 12/11/24
Of:	Time:	Date/Time:	Of: ELS SYD	Time: 0900
Name/Signature:	Date:	Carrier / Reference #:	Name/Signature:	Date:
Of:	Time:	Date/Time:	Of:	Time:
Name/Signature:	Date:	Carrier / Reference #:	Name/Signature:	Date:
Of:	Time:	Date/Time:	Of:	Time:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Acid (HNO_3) Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide (NaOH)/Cadmium (Cd) Preserved; S = Sodium Hydroxide Preserved Plastic; STH = Sodium thiosulfate preserved plastic; V = VOA Vial Hydochloric Acid (HCl) Preserved; VS = VOA Vial Sulphuric Preserved; VSA = Sulphuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation Bottle; SP = Sulphuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; UA = Unpreserved Amber Glass; L=Lugol's Iodine preserved white plastic bottle; SW= sulfuric acid preserved wide mouth glass jar

#366091
KC/CH 12/11/24.

senversa

Chain of Custody Documentation

Senversa Pty Ltd
www.senversa.com.au
ABN 89 132 231 380

Laboratory:
Address:
Contact: Sample Receipt
Phone:

Job Number: S22013	Purchase Order:
Project Name: Mars Road DSI	Quote No: 24SYS1602
Sampled By: LO HX	Turn Around Time:
Project Manager: Zoe Smith	Page: 2 of 2
Email Report To: zoe.smith@senversa.com.au	Phone/Mobile:

Sample Information					Container Information		Analysis Required												Comments: e.g. Highly contaminated sample; hazardous materials present; trace LORs etc.
Lab ID	Sample ID	Matrix *	Date	Time	Type / Code	Total Bottles	Heavy metals 8	BTEXN	TRH	PAH	OCP	PCB	VOC	PFAS	Asbestos quantification		HOLD	
16	BH28_0-0.2	Soil	11/11/24	PM	JAR, Bag, PFAS	x3											X	
17	BH28_0.5-0.6	Soil				x3											X	
18	BH28_0.9-1.0	Soil				x3											X	
19	BH29_0-0.1	Soil				x3											X	
20	PACM-01	Soil			Bag	x1											X	
21	PACM-02	Soil			Bag	x1											X	—
22	QC300	Water			vials, bottles	x7											X	
23	QC400				vial	x1												TS
Total																		

Sampler: I attest that proper field sampling procedures in accordance with Senversa standard procedures and/or project specifications were used during the collection of these samples:

Sampler Name: Lucas Dealaleonski | Signature: | Date: 11 / 11 / 24

Relinquished By:		Method of Shipment (if applicable):	Received by:	
Name/Signature: Lucas Dealaleonski	Date: 11/11/24	Carrier / Reference #:	Name/Signature:	Date:
Of:	Time:	Date/Time:	Of:	Time:
Name/Signature:	Date:	Carrier / Reference #:	Name/Signature:	Date:
Of:	Time:	Date/Time:	Of:	Time:
Name/Signature:	Date:	Carrier / Reference #:	Name/Signature:	Date:
Of:	Time:	Date/Time:	Of:	Time:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Acid (HNO_3) Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide (NaOH)/Cadmium (Cd) Preserved; S = Sodium Hydroxide Preserved Plastic; STH = Sodium thiosulfate preserved plastic; V = VOA Vial Hydochloric Acid (HCl) Preserved; VS = VOA Vial Sulphuric Preserved; VSA = Sulphuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation Bottle; SP = Sulphuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; UA = Unpreserved Amber Glass; L=Lugol's Iodine preserved white plastic bottle; SW= sulfuric acid preserved wide mouth glass jar

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	Senversa Pty Ltd
Attention	Zoe Smith

Sample Login Details

Your reference	S22013, Mars Road DSI
Envirolab Reference	366091
Date Sample Received	12/11/2024
Date Instructions Received	12/11/2024
Date Results Expected to be Reported	On Hold

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	20 Soil, 2 Material, 1 Water
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	5
Cooling Method	Ice
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 Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides in Soil	PCBs in Soil	Misc Soil - Inorg	Acid Extractable metalsin soil	Misc Inorg - Soil	Asbestos ID - soils	On Hold
BH14_0.16-0.2											✓
BH14_0.5-0.6											✓
BH14_2.0-2.2											✓
BH14_3.0-3.2											✓
BH14_4.0-4.2											✓
BH14_5.0-5.2											✓
BH14_6.0-6.2											✓
BH14_7.0-7.2											✓
BH14_7.8-8.0											✓
BH16_0.16-0.2											✓
BH16_0.5-0.6											✓
BH16_1.0-2.1											✓
BH16_2.0-2.1											✓
BH16_4.0-4.1											✓
BH16_6.0-6.1											✓
BH28_0-0.2											✓
BH28_0.5-0.6											✓
BH28_0.9-1.0											✓
BH29_0-0.1											✓
PACM_01											✓
PACM_02											✓
QC300											✓
QC400											✓

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.

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 366091

Client Details

Client	Senversa Pty Ltd
Attention	Zoe Smith
Address	6/15 William St, Melbourne, VIC, 3000

Sample Details

Your Reference	**S22013, Mars Road DSI**
Number of Samples	20 Soil, 2 Material, 1 Water
Date samples received	12/11/2024
Date completed instructions received	18/11/2024

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.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	25/11/2024
Date of Issue	25/11/2024

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

Asbestos Approved By
Analysed by Asbestos Approved Analyst: Amanda Lee, Lucy Zhu
Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By
Dragana Tomas, Senior Chemist
Giovanni Agosti, Group Technical Manager
Lucy Zhu, Asbestos Supervisor
Sean McAlary, Senior Chemist
Tabitha Roberts, Senior Chemist
Timothy Toll, Senior Chemist

Authorised By
Nancy Zhang, Laboratory Manager

VOCs in soil				
Our Reference		366091-5	366091-12	366091-18
Your Reference	UNITS	BH14_4.0-4.2	BH16_1.0-2.1	BH28_0.9-1.0
Date Sampled		11/11/2024	11/11/2024	11/11/2024
Type of sample		Soil	Soil	Soil
Date Extracted	-	20/11/2024	20/11/2024	20/11/2024
Date Analysed	-	21/11/2024	21/11/2024	21/11/2024
Dichlorodifluoromethane	mg/kg	<1	<1	<1
Chloromethane	mg/kg	<1	<1	<1
Vinyl Chloride	mg/kg	<1	<1	<1
Bromomethane	mg/kg	<1	<1	<1
Chloroethane	mg/kg	<1	<1	<1
Trichlorofluoromethane	mg/kg	<1	<1	<1
1,1-Dichloroethene	mg/kg	<1	<1	<1
trans-1,2-Dichloroethene	mg/kg	<1	<1	<1
1,1-Dichloroethane	mg/kg	<1	<1	<1
cis-1,2-Dichloroethene	mg/kg	<1	<1	<1
Bromochloromethane	mg/kg	<1	<1	<1
Chloroform	mg/kg	<1	<1	<1
2,2-Dichloropropane	mg/kg	<1	<1	<1
1,2-Dichloroethane	mg/kg	<1	<1	<1
1,1,1-Trichloroethane	mg/kg	<1	<1	<1
1,1-Dichloropropene	mg/kg	<1	<1	<1
Cyclohexane	mg/kg	<1	<1	<1
Carbon Tetrachloride	mg/kg	<1	<1	<1
Benzene	mg/kg	<0.2	<0.2	<0.2
Dibromomethane	mg/kg	<1	<1	<1
1,2-Dichloropropane	mg/kg	<1	<1	<1
Trichloroethene	mg/kg	<1	<1	<1
Bromodichloromethane	mg/kg	<1	<1	<1
trans-1,3-Dichloropropene	mg/kg	<1	<1	<1
cis-1,3-Dichloropropene	mg/kg	<1	<1	<1
1,1,2-Trichloroethane	mg/kg	<1	<1	<1
Toluene	mg/kg	<0.5	<0.5	<0.5
1,3-Dichloropropane	mg/kg	<1	<1	<1
Dibromochloromethane	mg/kg	<1	<1	<1
1,2-Dibromoethane	mg/kg	<1	<1	<1
Tetrachloroethene	mg/kg	<1	<1	<1
1,1,1,2-Tetrachloroethane	mg/kg	<1	<1	<1
Chlorobenzene	mg/kg	<1	<1	<1
Ethylbenzene	mg/kg	<1	<1	<1

VOCs in soil				
Our Reference	UNITS	366091-5	366091-12	366091-18
Your Reference		BH14_4.0-4.2	BH16_1.0-2.1	BH28_0.9-1.0
Date Sampled		11/11/2024	11/11/2024	11/11/2024
Type of sample		Soil	Soil	Soil
Bromoform	mg/kg	<1	<1	<1
m+p-Xylene	mg/kg	<2	<2	<2
Styrene	mg/kg	<1	<1	<1
1,1,2,2-Tetrachloroethane	mg/kg	<1	<1	<1
o-Xylene	mg/kg	<1	<1	<1
1,2,3-Trichloropropane	mg/kg	<1	<1	<1
Isopropylbenzene	mg/kg	<1	<1	<1
Bromobenzene	mg/kg	<1	<1	<1
n-Propylbenzene	mg/kg	<1	<1	<1
2-Chlorotoluene	mg/kg	<1	<1	<1
4-Chlorotoluene	mg/kg	<1	<1	<1
1,3,5-Trimethylbenzene	mg/kg	<1	<1	<1
tert-Butylbenzene	mg/kg	<1	<1	<1
1,2,4-Trimethylbenzene	mg/kg	<1	<1	<1
1,3-Dichlorobenzene	mg/kg	<1	<1	<1
sec-Butylbenzene	mg/kg	<1	<1	<1
1,4-Dichlorobenzene	mg/kg	<1	<1	<1
4-Isopropyltoluene	mg/kg	<1	<1	<1
1,2-Dichlorobenzene	mg/kg	<1	<1	<1
n-Butylbenzene	mg/kg	<1	<1	<1
1,2-Dibromo-3-chloropropane	mg/kg	<1	<1	<1
1,2,4-Trichlorobenzene	mg/kg	<1	<1	<1
Hexachlorobutadiene	mg/kg	<1	<1	<1
1,2,3-Trichlorobenzene	mg/kg	<1	<1	<1
Surrogate Dibromofluoromethane	%	100	101	102
Surrogate aaa-Trifluorotoluene	%	109	117	105
Surrogate Toluene-d_8	%	97	101	101
Surrogate 4-Bromofluorobenzene	%	102	95	95

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		366091-1	366091-5	366091-9	366091-12	366091-14
Your Reference	UNITS	BH14_0.16-0.2	BH14_4.0-4.2	BH14_7.8-8.0	BH16_1.0-2.1	BH16_4.0-4.1
Date Sampled		11/11/2024	11/11/2024	11/11/2024	11/11/2024	11/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024	21/11/2024	21/11/2024
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	100	109	106	117	108

vTRH(C6-C10)/BTEXN in Soil					
Our Reference		366091-16	366091-18	366091-19	366091-23
Your Reference	UNITS	BH28_0-0.2	BH28_0.9-1.0	BH29_0-0.1	QC400
Date Sampled		11/11/2024	11/11/2024	11/11/2024	11/11/2024
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024	21/11/2024
TRH C_6 - C_9	mg/kg	<25	<25	<25	[NA]
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	[NA]
vTRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	[NA]
Benzene	mg/kg	<0.2	<0.2	<0.2	102%
Toluene	mg/kg	<0.5	<0.5	<0.5	101%
Ethylbenzene	mg/kg	<1	<1	<1	102%
m+p-xylene	mg/kg	<2	<2	<2	102%
o-Xylene	mg/kg	<1	<1	<1	102%
Naphthalene	mg/kg	<1	<1	<1	[NA]
Total +ve Xylenes	mg/kg	<1	<1	<1	[NA]
Surrogate aaa-Trifluorotoluene	%	104	105	107	97

svTRH (C10-C40) in Soil						
Our Reference		366091-1	366091-5	366091-9	366091-12	366091-14
Your Reference	UNITS	BH14_0.16-0.2	BH14_4.0-4.2	BH14_7.8-8.0	BH16_1.0-2.1	BH16_4.0-4.1
Date Sampled		11/11/2024	11/11/2024	11/11/2024	11/11/2024	11/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024	21/11/2024	21/11/2024
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	90	91	88	87	90

svTRH (C10-C40) in Soil				
Our Reference		366091-16	366091-18	366091-19
Your Reference	UNITS	BH28_0-0.2	BH28_0.9-1.0	BH29_0-0.1
Date Sampled		11/11/2024	11/11/2024	11/11/2024
Type of sample		Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50
TRH >C_{10} -C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50
Surrogate o-Terphenyl	%	86	87	90

PAHs in Soil						
Our Reference		366091-1	366091-5	366091-9	366091-12	366091-14
Your Reference	UNITS	BH14_0.16-0.2	BH14_4.0-4.2	BH14_7.8-8.0	BH16_1.0-2.1	BH16_4.0-4.1
Date Sampled		11/11/2024	11/11/2024	11/11/2024	11/11/2024	11/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	22/11/2024	21/11/2024	21/11/2024	22/11/2024	21/11/2024
Naphthalene	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	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<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
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	86	94	91	82	91

PAHs in Soil				
Our Reference		366091-16	366091-18	366091-19
Your Reference	UNITS	BH28_0-0.2	BH28_0.9-1.0	BH29_0-0.1
Date Sampled		11/11/2024	11/11/2024	11/11/2024
Type of sample		Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	22/11/2024	22/11/2024	22/11/2024
Naphthalene	mg/kg	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	0.1
Pyrene	mg/kg	<0.1	<0.1	0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	0.2
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	74	82	82

Organochlorine Pesticides in soil						
Our Reference		366091-1	366091-12	366091-16	366091-18	366091-19
Your Reference	UNITS	BH14_0.16-0.2	BH16_1.0-2.1	BH28_0-0.2	BH28_0.9-1.0	BH29_0-0.1
Date Sampled		11/11/2024	11/11/2024	11/11/2024	11/11/2024	11/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total Positive Aldrin+Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	78	78	77	69	81

PCBs in Soil						
Our Reference		366091-1	366091-12	366091-16	366091-18	366091-19
Your Reference	UNITS	BH14_0.16-0.2	BH16_1.0-2.1	BH28_0-0.2	BH28_0.9-1.0	BH29_0-0.1
Date Sampled		11/11/2024	11/11/2024	11/11/2024	11/11/2024	11/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 2-Fluorobiphenyl	%	87	86	84	81	85

Acid Extractable metals in soil						
Our Reference		366091-1	366091-5	366091-9	366091-12	366091-14
Your Reference	UNITS	BH14_0.16-0.2	BH14_4.0-4.2	BH14_7.8-8.0	BH16_1.0-2.1	BH16_4.0-4.1
Date Sampled		11/11/2024	11/11/2024	11/11/2024	11/11/2024	11/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024	21/11/2024	21/11/2024
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	9	4	10	15	7
Copper	mg/kg	12	<1	5	4	2
Lead	mg/kg	12	5	11	11	3
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	14	2	2	3	2
Zinc	mg/kg	20	9	17	14	8

Acid Extractable metals in soil				
Our Reference		366091-16	366091-18	366091-19
Your Reference	UNITS	BH28_0-0.2	BH28_0.9-1.0	BH29_0-0.1
Date Sampled		11/11/2024	11/11/2024	11/11/2024
Type of sample		Soil	Soil	Soil
Date prepared	-	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024
Arsenic	mg/kg	<4	6	4
Cadmium	mg/kg	<0.4	<0.4	<0.4
Chromium	mg/kg	12	5	15
Copper	mg/kg	5	19	10
Lead	mg/kg	12	13	69
Mercury	mg/kg	<0.1	<0.1	0.1
Nickel	mg/kg	5	1	6
Zinc	mg/kg	16	6	40

Moisture						
Our Reference		366091-1	366091-5	366091-9	366091-12	366091-14
Your Reference	UNITS	BH14_0.16-0.2	BH14_4.0-4.2	BH14_7.8-8.0	BH16_1.0-2.1	BH16_4.0-4.1
Date Sampled		11/11/2024	11/11/2024	11/11/2024	11/11/2024	11/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024	21/11/2024	21/11/2024
Moisture	%	5.2	3.1	7.6	7.0	2.9

Moisture				
Our Reference		366091-16	366091-18	366091-19
Your Reference	UNITS	BH28_0-0.2	BH28_0.9-1.0	BH29_0-0.1
Date Sampled		11/11/2024	11/11/2024	11/11/2024
Type of sample		Soil	Soil	Soil
Date prepared	-	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024
Moisture	%	3.6	2.4	13

Asbestos ID - soils NEPM - ASB-001						
Our Reference		366091-1	366091-12	366091-16	366091-18	366091-19
Your Reference	UNITS	BH14_0.16-0.2	BH16_1.0-2.1	BH28_0-0.2	BH28_0.9-1.0	BH29_0-0.1
Date Sampled		11/11/2024	11/11/2024	11/11/2024	11/11/2024	11/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024
Sample mass tested	g	958.69	609.77	704.39	694.74	796.68
Sample Description	-	Brown sandy soil & rocks	Brown sandy soil & rocks	Brown sandy soil & rocks	Brown sandy soil & rocks	Brown sandy soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos[#1]	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	–	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001
Asbestos comments	-	Nil	Nil	Nil	Nil	Nil

Asbestos ID - materials			
Our Reference	UNITS	366091-20	366091-21
Your Reference		PACM_01	PACM_02
Date Sampled		11/11/2024	11/11/2024
Type of sample		Material	Material
Date analysed	-	19/11/2024	19/11/2024
Mass / Dimension of Sample	-	84x66x5mm	106x68x7mm
Sample Description	-	Grey fibre cement material	Grey cement-like material
Asbestos ID in materials	-	Chrysotile asbestos detected	No asbestos detected
Trace Analysis	-	[NT]	No asbestos detected

PFAS in Soils Short			
Our Reference		366091-1	366091-12
Your Reference	UNITS	BH14_0.16-0.2	BH16_1.0-2.1
Date Sampled		11/11/2024	11/11/2024
Type of sample		Soil	Soil
Date prepared	-	20/11/2024	20/11/2024
Date analysed	-	20/11/2024	20/11/2024
Perfluorobutanesulfonic acid	µg/kg	<0.1	<0.1
Perfluorohexanesulfonic acid - PFHxS	µg/kg	<0.1	<0.1
Perfluorooctanesulfonic acid PFOS	µg/kg	0.2	<0.1
Perfluorooctanoic acid PFOA	µg/kg	0.1	<0.1
6:2 FTS	µg/kg	<0.1	<0.1
8:2 FTS	µg/kg	<0.2	<0.2
Surrogate $^{13}C_8$ *PFOS*	%	98	98
Surrogate $^{13}C_2$ *PFOA*	%	100	104
Extracted ISTD $^{13}C_3$ *PFBS*	%	103	102
Extracted ISTD $^{18}O_2$ *PFHxS*	%	102	101
Extracted ISTD $^{13}C_4$ *PFOS*	%	107	102
Extracted ISTD $^{13}C_4$ *PFOA*	%	105	99
Extracted ISTD $^{13}C_2$ *6:2FTS*	%	110	106
Extracted ISTD $^{13}C_2$ *8:2FTS*	%	113	118
Total Positive PFHxS & PFOS	µg/kg	0.2	<0.1
Total Positive PFOS & PFOA	µg/kg	0.3	<0.1
Total Positive PFAS	µg/kg	0.3	<0.1

PFAS in TCLP Short			
Our Reference		366091-1	366091-12
Your Reference	UNITS	BH14_0.16-0.2	BH16_1.0-2.1
Date Sampled		11/11/2024	11/11/2024
Type of sample		Soil	Soil
Date prepared	-	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024
pH of soil for fluid# determ.	pH units	8.7	8.5
pH of soil TCLP (after HCl)	pH units	1.6	1.6
Extraction fluid used		1	1
pH of final Leachate	pH units	4.9	4.9
Perfluorobutanesulfonic acid	µg/L	<0.01	<0.01
Perfluorohexanesulfonic acid - PFHxS	µg/L	<0.01	<0.01
Perfluorooctanesulfonic acid PFOS	µg/L	<0.01	<0.01
Perfluorooctanoic acid PFOA	µg/L	<0.01	<0.01
6:2 FTS	µg/L	<0.01	<0.01
8:2 FTS	µg/L	<0.02	<0.02
Surrogate $^{13}C_8$ *PFOS*	%	102	100
Surrogate $^{13}C_2$ *PFOA*	%	105	99
Extracted ISTD $^{13}C_3$ *PFBS*	%	98	99
Extracted ISTD $^{18}O_2$ *PFHxS*	%	95	99
Extracted ISTD $^{13}C_4$ *PFOS*	%	97	95
Extracted ISTD $^{13}C_4$ *PFOA*	%	95	99
Extracted ISTD $^{13}C_2$ *6:2FTS*	%	68	65
Extracted ISTD $^{13}C_2$ *8:2FTS*	%	75	72
Total Positive PFHxS & PFOS	µg/L	<0.01	<0.01
Total Positive PFOS & PFOA	µg/L	<0.01	<0.01
Total Positive PFAS	µg/L	<0.01	<0.01

vTRH(C6-C10)/BTEXN in Water		
Our Reference	UNITS	366091-22
Your Reference		QC300
Date Sampled		11/11/2024
Type of sample		Water
Date extracted	-	21/11/2024
Date analysed	-	22/11/2024
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	%	101
Surrogate Toluene-d8	%	99
Surrogate 4-Bromofluorobenzene	%	95

svTRH (C10-C40) in Water		
Our Reference	UNITS	366091-22
Your Reference		QC300
Date Sampled		11/11/2024
Type of sample		Water
Date extracted	-	20/11/2024
Date analysed	-	21/11/2024
TRH C_{10} - C_{14}	µg/L	<50
TRH C_{15} - C_{28}	µg/L	<100
TRH C_{29} - C_{36}	µg/L	<100
Total +ve TRH (C10-C36)	µg/L	<50
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
Total +ve TRH (>C10-C40)	µg/L	<50
Surrogate o-Terphenyl	%	80

Metals in Waters - Acid extractable		
Our Reference		366091-22
Your Reference	UNITS	QC300
Date Sampled		11/11/2024
Type of sample		Water
Date prepared	-	20/11/2024
Date analysed	-	20/11/2024
Arsenic - Total	mg/L	<0.05
Cadmium - Total	mg/L	<0.01
Chromium - Total	mg/L	<0.01
Copper - Total	mg/L	<0.01
Lead - Total	mg/L	<0.03
Mercury - Total	mg/L	<0.0005
Nickel - Total	mg/L	<0.02
Zinc - Total	mg/L	<0.02

PFAS in Waters Short		
Our Reference	UNITS	366091-22
Your Reference		QC300
Date Sampled		11/11/2024
Type of sample		Water
Date prepared	-	22/11/2024
Date analysed	-	22/11/2024
Perfluorobutanesulfonic acid	µg/L	<0.01
Perfluorohexanesulfonic acid - PFHxS	µg/L	<0.01
Perfluorooctanesulfonic acid PFOS	µg/L	<0.01
Perfluorooctanoic acid PFOA	µg/L	<0.01
6:2 FTS	µg/L	<0.01
8:2 FTS	µg/L	<0.02
Surrogate $^{13}C_8$ *PFOS*	%	98
Surrogate $^{13}C_2$ *PFOA*	%	99
Extracted ISTD $^{13}C_3$ *PFBS*	%	102
Extracted ISTD $^{18}O_2$ *PFHxS*	%	92
Extracted ISTD $^{13}C_4$ *PFOS*	%	93
Extracted ISTD $^{13}C_4$ *PFOA*	%	94
Extracted ISTD $^{13}C_2$ *6:2FTS*	%	78
Extracted ISTD $^{13}C_2$ *8:2FTS*	%	80
Total Positive PFHxS & PFOS	µg/L	<0.01
Total Positive PFOA & PFOS	µg/L	<0.01
Total Positive PFAS	µg/L	<0.01

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
ASB-001	Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit of 0.1g/kg (0.01% w/w) as per Australian Standard AS4964-2004. Results reported denoted with * are outside our scope of NATA accreditation. NOTE#1 Total Asbestos g/kg was analysed and reported as per Australian Standard AS4964 (This is the sum of ACM >7mm, <7mm and FA/AF relative to the sample mass tested) NOTE#2 The screening level of 0.001% w/w asbestos in soil for FA and AF only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres. Estimation = Estimated asbestos weight Results reported with "--" is equivalent to no visible asbestos identified using Polarised Light microscopy and Dispersion Staining Techniques.
Inorg-004	Toxicity Characteristic Leaching Procedure (TCLP) using AS 4439. Please note that the mass used may be scaled down from default based on sample mass available. Samples are stored at 2-6oC before and after leachate preparation.
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.

Method ID	Methodology Summary
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-021/022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD and/or GC-MS/GC-MSMS. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.
Org-022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS/GC-MSMS. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
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	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.
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.
Org-029	Soil samples are extracted with basified Methanol. Waters and soil extracts are directly injected and/or concentrated/extracted using SPE. TCLPs/ASLP leachates are centrifuged, the supernatant is then analysed (including amendment with solvent) - as per the option in AS4439.3. Analysis is undertaken with LC-MS/MS. PFAS results include the sum of branched and linear isomers where applicable. Please note that PFAS results are corrected for Extracted Internal Standards (QSM 5.4 Table B-15 terminology), which are mass labelled analytes added prior to sample preparation to assess matrix effects and verify processing of the sample. PFAS analytes without a commercially available mass labelled analogue are corrected vs a closely eluting mass labelled PFAS compound. Surrogates are also reported, in this context they are mass labelled PFAS compounds added prior to extraction but are used as monitoring compounds only (not used for result correction). Envicarb (or similar) is used discretionally to remove interfering matrix components. Please contact the laboratory if estimates of Measurement Uncertainty are required as per WA DER.

QUALITY CONTROL: VOCs in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	[NT]
Date Extracted	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Date Analysed	-			21/11/2024	[NT]	[NT]	[NT]	[NT]	21/11/2024	[NT]
Dichlorodifluoromethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chloromethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Vinyl Chloride	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromomethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chloroethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Trichlorofluoromethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1-Dichloroethene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
trans-1,2-Dichloroethene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1-Dichloroethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	116	[NT]
cis-1,2-Dichloroethene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromochloromethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chloroform	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	121	[NT]
2,2-Dichloropropane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-Dichloroethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	113	[NT]
1,1,1-Trichloroethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	113	[NT]
1,1-Dichloropropene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Cyclohexane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Carbon Tetrachloride	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzene	mg/kg	0.2	Org-023	<0.2	[NT]	[NT]	[NT]	[NT]	114	[NT]
Dibromomethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-Dichloropropane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Trichloroethene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	110	[NT]
Bromodichloromethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	113	[NT]
trans-1,3-Dichloropropene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
cis-1,3-Dichloropropene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1,2-Trichloroethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Toluene	mg/kg	0.5	Org-023	<0.5	[NT]	[NT]	[NT]	[NT]	116	[NT]
1,3-Dichloropropane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibromochloromethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	107	[NT]
1,2-Dibromoethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Tetrachloroethene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	109	[NT]
1,1,1,2-Tetrachloroethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chlorobenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	117	[NT]
Bromoform	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
m+p-Xylene	mg/kg	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	118	[NT]
Styrene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1,2,2-Tetrachloroethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]

QUALITY CONTROL: VOCs in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	[NT]
o-Xylene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	118	[NT]
1,2,3-Trichloropropane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Isopropylbenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromobenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
n-Propylbenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2-Chlorotoluene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
4-Chlorotoluene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3,5-Trimethylbenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
tert-Butylbenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,4-Trimethylbenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3-Dichlorobenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
sec-Butylbenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,4-Dichlorobenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
4-Isopropyltoluene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-Dichlorobenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
n-Butylbenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-Dibromo-3-chloropropane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,4-Trichlorobenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Hexachlorobutadiene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,3-Trichlorobenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	101	[NT]	[NT]	[NT]	[NT]	97	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	115	[NT]	[NT]	[NT]	[NT]	110	[NT]
Surrogate Toluene-d_8	%		Org-023	101	[NT]	[NT]	[NT]	[NT]	97	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-023	95	[NT]	[NT]	[NT]	[NT]	99	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	[NT]
Date extracted	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Date analysed	-			21/11/2024	[NT]	[NT]	[NT]	[NT]	21/11/2024	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	117	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	117	[NT]
Benzene	mg/kg	0.2	Org-023	<0.2	[NT]	[NT]	[NT]	[NT]	114	[NT]
Toluene	mg/kg	0.5	Org-023	<0.5	[NT]	[NT]	[NT]	[NT]	116	[NT]
Ethylbenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	117	[NT]
m+p-xylene	mg/kg	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	118	[NT]
o-Xylene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	118	[NT]
Naphthalene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	115	[NT]	[NT]	[NT]	[NT]	110	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	[NT]
Date extracted	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Date analysed	-			21/11/2024	[NT]	[NT]	[NT]	[NT]	21/11/2024	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	109	[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]	100	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	109	[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]	100	[NT]
Surrogate o-Terphenyl	%		Org-020	91	[NT]	[NT]	[NT]	[NT]	92	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	[NT]
Date extracted	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Date analysed	-			22/11/2024	[NT]	[NT]	[NT]	[NT]	22/11/2024	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	74	[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]	76	[NT]
Fluorene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	72	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	76	[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]	68	[NT]
Pyrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	70	[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]	80	[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]	73	[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	73	[NT]	[NT]	[NT]	[NT]	86	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	[NT]
Date extracted	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Date analysed	-			22/11/2024	[NT]	[NT]	[NT]	[NT]	22/11/2024	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	86	[NT]
HCB	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	80	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	70	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	72	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	86	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	70	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	80	[NT]
Endrin	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	74	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	78	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	70	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Mirex	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	67	[NT]	[NT]	[NT]	[NT]	85	[NT]

QUALITY CONTROL: PCBs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	[NT]
Date extracted	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Date analysed	-			22/11/2024	[NT]	[NT]	[NT]	[NT]	22/11/2024	[NT]
Aroclor 1016	mg/kg	0.1	Org-021/022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021/022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021/022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021/022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021/022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021/022/025	<0.1	[NT]	[NT]	[NT]	[NT]	75	[NT]
Aroclor 1260	mg/kg	0.1	Org-021/022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate 2-Fluorobiphenyl	%		Org-021/022/025	85	[NT]	[NT]	[NT]	[NT]	86	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	[NT]
Date prepared	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Date analysed	-			21/11/2024	[NT]	[NT]	[NT]	[NT]	21/11/2024	[NT]
Arsenic	mg/kg	4	Metals-020	<4	[NT]	[NT]	[NT]	[NT]	102	[NT]
Cadmium	mg/kg	0.4	Metals-020	<0.4	[NT]	[NT]	[NT]	[NT]	92	[NT]
Chromium	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	96	[NT]
Copper	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Lead	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	96	[NT]
Mercury	mg/kg	0.1	Metals-021	<0.1	[NT]	[NT]	[NT]	[NT]	108	[NT]
Nickel	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	99	[NT]
Zinc	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	96	[NT]

QUALITY CONTROL: PFAS in Soils Short						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	[NT]
Date prepared	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Date analysed	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Perfluorobutanesulfonic acid	µg/kg	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	88	[NT]
Perfluorohexanesulfonic acid - PFHxS	µg/kg	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	96	[NT]
Perfluorooctanesulfonic acid PFOS	µg/kg	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	93	[NT]
Perfluorooctanoic acid PFOA	µg/kg	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	90	[NT]
6:2 FTS	µg/kg	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	91	[NT]
8:2 FTS	µg/kg	0.2	Org-029	<0.2	[NT]	[NT]	[NT]	[NT]	89	[NT]
Surrogate $^{13}C_8$ *PFOS*	%		Org-029	98	[NT]	[NT]	[NT]	[NT]	96	[NT]
Surrogate $^{13}C_2$ *PFOA*	%		Org-029	106	[NT]	[NT]	[NT]	[NT]	100	[NT]
Extracted ISTD $^{13}C_3$ *PFBS*	%		Org-029	108	[NT]	[NT]	[NT]	[NT]	109	[NT]
Extracted ISTD $^{18}O_2$ *PFHxS*	%		Org-029	105	[NT]	[NT]	[NT]	[NT]	105	[NT]
Extracted ISTD $^{13}C_4$ *PFOS*	%		Org-029	108	[NT]	[NT]	[NT]	[NT]	107	[NT]
Extracted ISTD $^{13}C_4$ *PFOA*	%		Org-029	101	[NT]	[NT]	[NT]	[NT]	106	[NT]
Extracted ISTD $^{13}C_2$ *6:2FTS*	%		Org-029	109	[NT]	[NT]	[NT]	[NT]	113	[NT]
Extracted ISTD $^{13}C_2$ *8:2FTS*	%		Org-029	120	[NT]	[NT]	[NT]	[NT]	128	[NT]

QUALITY CONTROL: PFAS in TCLP Short					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Date analysed	-			21/11/2024	[NT]	[NT]	[NT]	[NT]	21/11/2024	[NT]
Perfluorobutanesulfonic acid	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	103	[NT]
Perfluorohexanesulfonic acid - PFHxS	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	102	[NT]
Perfluorooctanesulfonic acid PFOS	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	104	[NT]
Perfluorooctanoic acid PFOA	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	104	[NT]
6:2 FTS	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	101	[NT]
8:2 FTS	µg/L	0.02	Org-029	<0.02	[NT]	[NT]	[NT]	[NT]	91	[NT]
Surrogate $^{13}C_8$ *PFOS*	%		Org-029	102	[NT]	[NT]	[NT]	[NT]	102	[NT]
Surrogate $^{13}C_2$ *PFOA*	%		Org-029	103	[NT]	[NT]	[NT]	[NT]	102	[NT]
Extracted ISTD $^{13}C_3$ *PFBS*	%		Org-029	102	[NT]	[NT]	[NT]	[NT]	94	[NT]
Extracted ISTD $^{18}O_2$ *PFHxS*	%		Org-029	105	[NT]	[NT]	[NT]	[NT]	101	[NT]
Extracted ISTD $^{13}C_4$ *PFOS*	%		Org-029	100	[NT]	[NT]	[NT]	[NT]	97	[NT]
Extracted ISTD $^{13}C_4$ *PFOA*	%		Org-029	95	[NT]	[NT]	[NT]	[NT]	95	[NT]
Extracted ISTD $^{13}C_2$ *6:2FTS*	%		Org-029	68	[NT]	[NT]	[NT]	[NT]	62	[NT]
Extracted ISTD $^{13}C_2$ *8:2FTS*	%		Org-029	75	[NT]	[NT]	[NT]	[NT]	72	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			21/11/2024	[NT]	[NT]	[NT]	[NT]	21/11/2024	[NT]
Date analysed	-			22/11/2024	[NT]	[NT]	[NT]	[NT]	22/11/2024	[NT]
TRH C_6 - C_9	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	98	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	98	[NT]
Benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Toluene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	98	[NT]
m+p-xylene	µg/L	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	97	[NT]
o-xylene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	97	[NT]
Naphthalene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	101	[NT]	[NT]	[NT]	[NT]	100	[NT]
Surrogate Toluene-d8	%		Org-023	99	[NT]	[NT]	[NT]	[NT]	101	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-023	98	[NT]	[NT]	[NT]	[NT]	99	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Date analysed	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
TRH C_{10} - C_{14}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	109	[NT]
TRH C_{15} - C_{28}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	115	[NT]
TRH C_{29} - C_{36}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	100	[NT]
TRH >C_{10} - C_{16}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	109	[NT]
TRH >C_{16} - C_{34}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	115	[NT]
TRH >C_{34} - C_{40}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	100	[NT]
Surrogate o-Terphenyl	%		Org-020	64	[NT]	[NT]	[NT]	[NT]	120	[NT]

QUALITY CONTROL: Metals in Waters - Acid extractable						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Date analysed	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Arsenic - Total	mg/L	0.05	Metals-020	<0.05	[NT]	[NT]	[NT]	[NT]	111	[NT]
Cadmium - Total	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	103	[NT]
Chromium - Total	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	103	[NT]
Copper - Total	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	110	[NT]
Lead - Total	mg/L	0.03	Metals-020	<0.03	[NT]	[NT]	[NT]	[NT]	105	[NT]
Mercury - Total	mg/L	0.0005	Metals-021	<0.0005	[NT]	[NT]	[NT]	[NT]	112	[NT]
Nickel - Total	mg/L	0.02	Metals-020	<0.02	[NT]	[NT]	[NT]	[NT]	104	[NT]
Zinc - Total	mg/L	0.02	Metals-020	<0.02	[NT]	[NT]	[NT]	[NT]	105	[NT]

QUALITY CONTROL: PFAS in Waters Short						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	366091-22
Date prepared	-			22/11/2024	[NT]	[NT]	[NT]	[NT]	22/11/2024	22/11/2024
Date analysed	-			22/11/2024	[NT]	[NT]	[NT]	[NT]	22/11/2024	22/11/2024
Perfluorobutanesulfonic acid	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	102	104
Perfluorohexanesulfonic acid - PFHxS	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	102	100
Perfluorooctanesulfonic acid PFOS	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	97	93
Perfluorooctanoic acid PFOA	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	102	97
6:2 FTS	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	112	103
8:2 FTS	µg/L	0.02	Org-029	<0.02	[NT]	[NT]	[NT]	[NT]	109	104
Surrogate $^{13}C_8$ *PFOS*	%		Org-029	93	[NT]	[NT]	[NT]	[NT]	94	91
Surrogate $^{13}C_2$ *PFOA*	%		Org-029	100	[NT]	[NT]	[NT]	[NT]	98	101
Extracted ISTD $^{13}C_3$ *PFBS*	%		Org-029	100	[NT]	[NT]	[NT]	[NT]	98	94
Extracted ISTD $^{18}O_2$ *PFHxS*	%		Org-029	97	[NT]	[NT]	[NT]	[NT]	94	93
Extracted ISTD $^{13}C_4$ *PFOS*	%		Org-029	98	[NT]	[NT]	[NT]	[NT]	100	97
Extracted ISTD $^{13}C_4$ *PFOA*	%		Org-029	93	[NT]	[NT]	[NT]	[NT]	95	93
Extracted ISTD $^{13}C_2$ *6:2FTS*	%		Org-029	80	[NT]	[NT]	[NT]	[NT]	88	86
Extracted ISTD $^{13}C_2$ *8:2FTS*	%		Org-029	83	[NT]	[NT]	[NT]	[NT]	92	89

Result Definitions

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

Quality Control Definitions

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

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

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

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

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

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

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

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

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

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

Report Comments

Asbestos-ID in soil: NEPM
This report is consistent with the reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013. This is reported outside our scope of NATA accreditation.

Envirolab Services Pty Ltd
ABN 37 112 535 645
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DATA QUALITY ASSESSMENT SUMMARY

Report Details

Envirolab Report Reference	**366091**
Client ID	Senversa Pty Ltd
Project Reference	S22013, Mars Road DSI
Date Issued	25/11/2024

QC DATA

All laboratory QC data was within the Envirolab Group's specifications.

HOLDING TIME COMPLIANCE EVALUATION

All preservation / holding times (based on AS/ASPHA/ISO/NEPM/USEPA reference documents and standards) are compliant except:

Holding Time Exceedances

Analysis	Sample No	Date Sampled	Date Extracted	Date Analysed	Accepted
svTRH (C10-C40) in Water					
	366091-22	11/11/2024	20/11/2024	21/11/2024	✗

Certain analyses have had their recommended technical holding times elongated by filtering and/or freezing on receipt at the laboratory (e.g. BOD, chlorophyll/Pheophytin, nutrients and acid sulphate soil tests).

COMPLIANCE TO QC FREQUENCY (NEPM)

Internal laboratory QC rate complies with NEPM requirements (LCS/MB/MS 1 in 20, Duplicates 1 in 10 samples). Note, samples are batched together with other sample consignments in order to assign QC sample frequency.

QC Evaluation

Duplicate(s) was performed as per NEPM frequency	✓
Laboratory Control Sample(s) were analysed with the samples received	✓
A Method Blank was performed with the samples received	✓
Matrix spike(s) was performed as per NEPM frequency (Not Applicable for Air samples)	✓

Refer to Certificate of Analysis for all Quality Control data.

senversa

Chain of Custody Documentation

Senversa Pty Ltd
www.senversa.com.au
ABN 89 132 231 380

Laboratory:
Address:
Contact: Sample Receipt
Phone:

ENVIROLAB GROUP
Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No 366197

Date Received: 13/11/24
Time Received: 8:00
Received By:
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Job Number:	S22013
Project Name:	Mars Road 051
Sampled By:	LD MY
Project Manager:	Zoe Smith
Email Report To:	zoe.smith@senversa.com.au
Purchase Order:	
Quote No:	245Y516v2
Turn Around Time:	Standard
Page:	1 of 2
Phone/Mobile:	0431 659 835

Sample Information					Container Information		Analysis Required											
Lab ID	Sample ID	Matrix *	Date	Time	Type / Code	Total Bottles										HOLD	Comments: e.g. Highly contaminated sample; hazardous materials present; trace LORs etc.
1	BH16 - 7.9-8.0	Soil	12/11/24	AM	JAR, ORAJ	x2										X	
2	BH21 - 0.2-0.3					x3										X	
3	BH21 - 0.7-0.9					x3										X	
4	BH21 - 1.1-1.2					x3										X	
5	BH21 - 1.9-2.0					x2										X	
6	BH21 - 2.9-3.0					x2										X	
7	BH21 - 3.9-4.0					x2										X	
8	BH21 - 5.9-6.0					x2										X	
9	BH21 - 7.9-8.0					x2										X	
10	BH18 - 0.2-0.25					x3										X	
11	BH18 - 0.25-0.7					x3										X	
12	BH18 - 0.5-0.6					x2										X	
13	BH18 - 1.0-1.1					x2										X	
14	BH18 - 1.9-2.0					x2										X	
15	BH13 - 0-0.1					x3										X	
16	BH13 - 0.4-0.5					x3										X	
Total																X	

Sampler: I attest that proper field sampling procedures in accordance with Senversa standard procedures and/or project specifications were used during the collection of these samples: | **Sampler Name:** Lucas Dzalakowski | **Signature:** | **Date:** 12 / 11 / 24

Relinquished By:		**Method of Shipment (if applicable):**	**Received by:**	
Name/Signature: Lucas Dzalakowski	Date: 12/11/24	Carrier / Reference #:	Name/Signature:	Date:
Of:	Time:	Date/Time:	Of:	Time:
Name/Signature:	Date:	Carrier / Reference #:	Name/Signature:	Date:
Of:	Time:	Date/Time:	Of:	Time:
Name/Signature:	Date:	Carrier / Reference #:	Name/Signature:	Date:
Of:	Time:	Date/Time:	Of:	Time:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Acid (HNO_3) Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide (NaOH)/Cadmium (Cd) Preserved; S = Sodium Hydroxide Preserved Plastic; STH = Sodium thiosulfate preserved plastic; V = VOA Vial Hydochloric Acid (HCl) Preserved; VS = VOA Vial Sulphuric Preserved; VSA = Sulphuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation Bottle; SP = Sulphuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; UA = Unpreserved Amber Glass; L=Lugol's Iodine preserved white plastic bottle; SW= sulfuric acid preserved wide mouth glass jar

senversa

Chain of Custody Documentation

366197

Senversa Pty Ltd
www.senversa.com.au
ABN 89 132 231 380

Laboratory:
Address:
Contact: Sample Receipt
Phone:

Job Number:	S22013	Purchase Order:	
Project Name:	Mons Road DSI	Quote No:	24SY51602
Sampled By:	LW HY	Turn Around Time:	Standard
Project Manager:	Zoe Smith	Page:	2 of 2
Email Report To:	zoe.smith@senversa.com.au	Phone/Mobile:	0431 859 835

Sample Information					Container Information		Analysis Required											Comments: e.g. Highly contaminated sample; hazardous materials present; trace LORs etc.
Lab ID	Sample ID	Matrix *	Date	Time	Type / Code	Total Bottles											HOLD	
17	BH30-0.0-0.1	Soil			Jar, Vial, Bag, Tub	x3											Y	
18	BH30-0.4-0.5	Soil			↓	x3											X	
19	QC100	Soil			Jar	x1											X	
20	QC101	Soil			Jar	x1											X	
21	QC301	Water			Bottles	x7											X	
22	QC401					x1												TS
23	QC500					x1												TB
24	MATRIX-03				Bag	x1												
-	QC501					x1												FB PFAS
25.	QC200	extra																
Total																		

Sampler: I attest that proper field sampling procedures in accordance with Senversa standard procedures and/or project specifications were used during the collection of these samples:	Sampler Name: Lucas Dzialakiewicz	Signature:	Date: 12/11/24

Relinquished By:			Method of Shipment (if applicable):	Received by:	
Name/Signature: Lucas Dzialakiewicz		Date: 12/11/24	Carrier / Reference #:	Name/Signature:	Date:
Of:		Time:	Date/Time:	Of:	Time:
Name/Signature:		Date:	Carrier / Reference #:	Name/Signature:	Date:
Of:		Time:	Date/Time:	Of:	Time:
Name/Signature:		Date:	Carrier / Reference #:	Name/Signature:	Date:
Of:		Time:	Date/Time:	Of:	Time:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Acid (HNO_3) Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide (NaOH)/Cadmium (Cd) Preserved; S = Sodium Hydroxide Preserved Plastic; STH = Sodium thiosulfate preserved plastic; V = VOA Vial Hydochloric Acid (HCl) Preserved; VS = VOA Vial Sulphuric Preserved; VSA = Sulphuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation Bottle; SP = Sulphuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; UA = Unpreserved Amber Glass; L=Lugol's Iodine preserved white plastic bottle; SW= sulfuric acid preserved wide mouth glass jar

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www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	Senversa Pty Ltd
Attention	Zoe Smith

Sample Login Details

Your reference	S22013 Mars Road DSI
Envirolab Reference	366197
Date Sample Received	13/11/2024
Date Instructions Received	13/11/2024
Date Results Expected to be Reported	On Hold

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	23 Soil, 1 Water, 1 Material
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	4
Cooling Method	Ice
Sampling Date Provided	YES

Comments

Not received QC501

Received extra QC200

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:

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Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides in Soil	PCBs in Soil	Misc Soil - Inorg	Acid Extractable metalsin soil	Misc Inorg - Soil	Asbestos ID - soils	On Hold
BH16_7.9-8.0											✓
BH21_0.2-0.5											✓
BH21_0.7-0.8											✓
BH21_1.1-1.2											✓
BH21_1.9-2.0											✓
BH21_2.9-3.0											✓
BH21_3.9-4.0											✓
BH21_5.9-6.0											✓
BH21_7.9-8.0											✓
BH18_0.2-0.25											✓
BH18_0.25-0.3											✓
BH18_0.5-0.6											✓
BH18_1.0-1.1											✓
BH18_1.9-2.0											✓
BH13_0-0.1											✓
BH13_0.4-0.5											✓
BH30_0.0-0.1											✓
BH30_0.4-0.5											✓
QC100											✓
QC101											✓
QC301											✓
QC401											✓
QC500											✓
PACM-03											✓
QC200											✓

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.

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CERTIFICATE OF ANALYSIS 366197

Client Details

Client	Senversa Pty Ltd
Attention	Zoe Smith
Address	6/15 William St, Melbourne, VIC, 3000

Sample Details

Your Reference	**S22013, Mars Road DSI**
Number of Samples	23 Soil, 1 Water, 1 Material
Date samples received	13/11/2024
Date completed instructions received	18/11/2024

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.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	25/11/2024
Date of Issue	25/11/2024

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

Asbestos Approved By
Analysed by Asbestos Approved Analyst: Nyovan Moonean
Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By
Dragana Tomas, Senior Chemist
Giovanni Agosti, Group Technical Manager
Liam Timmins, Organics Supervisor
Lucy Zhu, Asbestos Supervisor
Sean McAlary, Senior Chemist
Tabitha Roberts, Senior Chemist
Timothy Toll, Senior Chemist

Authorised By
Nancy Zhang, Laboratory Manager

VOCs in soil			
Our Reference		366197-1	366197-2
Your Reference	UNITS	BH16_7.9-8.0	BH21_0.2-0.5
Date Sampled		12/11/2024	12/11/2024
Type of sample		Soil	Soil
Date Extracted	-	20/11/2024	20/11/2024
Date Analysed	-	21/11/2024	21/11/2024
Dichlorodifluoromethane	mg/kg	<1	<1
Chloromethane	mg/kg	<1	<1
Vinyl Chloride	mg/kg	<1	<1
Bromomethane	mg/kg	<1	<1
Chloroethane	mg/kg	<1	<1
Trichlorofluoromethane	mg/kg	<1	<1
1,1-Dichloroethene	mg/kg	<1	<1
trans-1,2-Dichloroethene	mg/kg	<1	<1
1,1-Dichloroethane	mg/kg	<1	<1
cis-1,2-Dichloroethene	mg/kg	<1	<1
Bromochloromethane	mg/kg	<1	<1
Chloroform	mg/kg	<1	<1
2,2-Dichloropropane	mg/kg	<1	<1
1,2-Dichloroethane	mg/kg	<1	<1
1,1,1-Trichloroethane	mg/kg	<1	<1
1,1-Dichloropropene	mg/kg	<1	<1
Cyclohexane	mg/kg	<1	<1
Carbon Tetrachloride	mg/kg	<1	<1
Benzene	mg/kg	<0.2	<0.2
Dibromomethane	mg/kg	<1	<1
1,2-Dichloropropane	mg/kg	<1	<1
Trichloroethene	mg/kg	<1	<1
Bromodichloromethane	mg/kg	<1	<1
trans-1,3-Dichloropropene	mg/kg	<1	<1
cis-1,3-Dichloropropene	mg/kg	<1	<1
1,1,2-Trichloroethane	mg/kg	<1	<1
Toluene	mg/kg	<0.5	<0.5
1,3-Dichloropropane	mg/kg	<1	<1
Dibromochloromethane	mg/kg	<1	<1
1,2-Dibromoethane	mg/kg	<1	<1
Tetrachloroethene	mg/kg	<1	<1
1,1,1,2-Tetrachloroethane	mg/kg	<1	<1
Chlorobenzene	mg/kg	<1	<1
Ethylbenzene	mg/kg	<1	<1

VOCs in soil			
Our Reference		366197-1	366197-2
Your Reference	UNITS	BH16_7.9-8.0	BH21_0.2-0.5
Date Sampled		12/11/2024	12/11/2024
Type of sample		Soil	Soil
Bromoform	mg/kg	<1	<1
m+p-Xylene	mg/kg	<2	<2
Styrene	mg/kg	<1	<1
1,1,2,2-Tetrachloroethane	mg/kg	<1	<1
o-Xylene	mg/kg	<1	<1
1,2,3-Trichloropropane	mg/kg	<1	<1
Isopropylbenzene	mg/kg	<1	<1
Bromobenzene	mg/kg	<1	<1
n-Propylbenzene	mg/kg	<1	<1
2-Chlorotoluene	mg/kg	<1	<1
4-Chlorotoluene	mg/kg	<1	<1
1,3,5-Trimethylbenzene	mg/kg	<1	<1
tert-Butylbenzene	mg/kg	<1	<1
1,2,4-Trimethylbenzene	mg/kg	<1	<1
1,3-Dichlorobenzene	mg/kg	<1	<1
sec-Butylbenzene	mg/kg	<1	<1
1,4-Dichlorobenzene	mg/kg	<1	<1
4-Isopropyltoluene	mg/kg	<1	<1
1,2-Dichlorobenzene	mg/kg	<1	<1
n-Butylbenzene	mg/kg	<1	<1
1,2-Dibromo-3-chloropropane	mg/kg	<1	<1
1,2,4-Trichlorobenzene	mg/kg	<1	<1
Hexachlorobutadiene	mg/kg	<1	<1
1,2,3-Trichlorobenzene	mg/kg	<1	<1
Surrogate Dibromofluoromethane	%	99	99
Surrogate aaa-Trifluorotoluene	%	103	103
Surrogate Toluene-d_8	%	98	97
Surrogate 4-Bromofluorobenzene	%	102	102

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		366197-1	366197-2	366197-3	366197-4	366197-9
Your Reference	UNITS	BH16_7.9-8.0	BH21_0.2-0.5	BH21_0.7-0.8	BH21_1.1-1.2	BH21_7.9-8.0
Date Sampled		12/11/2024	12/11/2024	12/11/2024	12/11/2024	12/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024	21/11/2024	21/11/2024
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	103	103	93	114	105

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		366197-11	366197-13	366197-16	366197-17	366197-19
Your Reference	UNITS	BH18_0.25-0.3	BH18_1.0-1.1	BH13_0.4-0.5	BH30_0.0-0.1	QC100
Date Sampled		12/11/2024	12/11/2024	12/11/2024	12/11/2024	12/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024	21/11/2024	21/11/2024
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	64	<25	<25
vTRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	64	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	105	112	109	98	105

vTRH(C6-C10)/BTEXN in Soil		
Our Reference		366197-22
Your Reference	UNITS	QC401
Date Sampled		12/11/2024
Type of sample		Soil
Date extracted	-	20/11/2024
Date analysed	-	21/11/2024
Benzene	mg/kg	90%
Toluene	mg/kg	92%
Ethylbenzene	mg/kg	93%
m+p-xylene	mg/kg	92%
o-Xylene	mg/kg	92%
Surrogate aaa-Trifluorotoluene	%	93

svTRH (C10-C40) in Soil						
Our Reference		366197-1	366197-2	366197-3	366197-4	366197-9
Your Reference	UNITS	BH16_7.9-8.0	BH21_0.2-0.5	BH21_0.7-0.8	BH21_1.1-1.2	BH21_7.9-8.0
Date Sampled		12/11/2024	12/11/2024	12/11/2024	12/11/2024	12/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024	21/11/2024	21/11/2024
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	90	88	89	89	91

svTRH (C10-C40) in Soil						
Our Reference		366197-11	366197-13	366197-16	366197-17	366197-19
Your Reference	UNITS	BH18_0.25-0.3	BH18_1.0-1.1	BH13_0.4-0.5	BH30_0.0-0.1	QC100
Date Sampled		12/11/2024	12/11/2024	12/11/2024	12/11/2024	12/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024	21/11/2024	21/11/2024
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	130	<100	110
TRH C_{29} - C_{36}	mg/kg	<100	<100	120	380	130
Total +ve TRH (C10-C36)	mg/kg	<50	<50	250	380	240
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	210	280	190
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	230	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	210	500	190
Surrogate o-Terphenyl	%	89	88	92	91	90

PAHs in Soil						
Our Reference		366197-1	366197-2	366197-3	366197-4	366197-9
Your Reference	UNITS	BH16_7.9-8.0	BH21_0.2-0.5	BH21_0.7-0.8	BH21_1.1-1.2	BH21_7.9-8.0
Date Sampled		12/11/2024	12/11/2024	12/11/2024	12/11/2024	12/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	22/11/2024	22/11/2024	21/11/2024	21/11/2024
Naphthalene	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	0.6	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	1.4	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	1.3	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	0.4	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	0.6	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	0.8	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	0.53	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	0.3	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	0.4	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	6.2	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	0.7	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	0.7	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	0.8	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	94	88	84	90	91

PAHs in Soil						
Our Reference		366197-11	366197-13	366197-16	366197-17	366197-19
Your Reference	UNITS	BH18_0.25-0.3	BH18_1.0-1.1	BH13_0.4-0.5	BH30_0.0-0.1	QC100
Date Sampled		12/11/2024	12/11/2024	12/11/2024	12/11/2024	12/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	22/11/2024	21/11/2024	22/11/2024	25/11/2024	21/11/2024
Naphthalene	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	<0.1	0.2	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	0.3	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	0.3	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	0.2	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	1.6	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	85	87	84	91	86

Organochlorine Pesticides in soil						
Our Reference		366197-2	366197-3	366197-11	366197-16	366197-17
Your Reference	UNITS	BH21_0.2-0.5	BH21_0.7-0.8	BH18_0.25-0.3	BH13_0.4-0.5	BH30_0.0-0.1
Date Sampled		12/11/2024	12/11/2024	12/11/2024	12/11/2024	12/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total Positive Aldrin+Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	70	69	65	84	75

PCBs in Soil						
Our Reference		366197-2	366197-3	366197-11	366197-16	366197-17
Your Reference	UNITS	BH21_0.2-0.5	BH21_0.7-0.8	BH18_0.25-0.3	BH13_0.4-0.5	BH30_0.0-0.1
Date Sampled		12/11/2024	12/11/2024	12/11/2024	12/11/2024	12/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 2-Fluorobiphenyl	%	81	78	80	86	87

Acid Extractable metals in soil						
Our Reference		366197-1	366197-2	366197-3	366197-4	366197-9
Your Reference	UNITS	BH16_7.9-8.0	BH21_0.2-0.5	BH21_0.7-0.8	BH21_1.1-1.2	BH21_7.9-8.0
Date Sampled		12/11/2024	12/11/2024	12/11/2024	12/11/2024	12/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024	21/11/2024	21/11/2024
Arsenic	mg/kg	<4	5	18	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	4	14	14	18	11
Copper	mg/kg	4	7	15	4	12
Lead	mg/kg	2	12	40	6	6
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	<1	3	3	2	1
Zinc	mg/kg	4	10	78	8	10

Acid Extractable metals in soil						
Our Reference		366197-11	366197-13	366197-16	366197-17	366197-19
Your Reference	UNITS	BH18_0.25-0.3	BH18_1.0-1.1	BH13_0.4-0.5	BH30_0.0-0.1	QC100
Date Sampled		12/11/2024	12/11/2024	12/11/2024	12/11/2024	12/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024	21/11/2024	21/11/2024
Arsenic	mg/kg	<4	<4	4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	0.9	<0.4
Chromium	mg/kg	18	2	24	8	31
Copper	mg/kg	3	<1	17	13	22
Lead	mg/kg	8	6	19	24	29
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	0.1
Nickel	mg/kg	6	<1	3	2	3
Zinc	mg/kg	8	<1	35	170	39

Moisture						
Our Reference		366197-1	366197-2	366197-3	366197-4	366197-9
Your Reference	UNITS	BH16_7.9-8.0	BH21_0.2-0.5	BH21_0.7-0.8	BH21_1.1-1.2	BH21_7.9-8.0
Date Sampled		12/11/2024	12/11/2024	12/11/2024	12/11/2024	12/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024	21/11/2024	21/11/2024
Moisture	%	7.6	9.1	11	6.5	5.2

Moisture						
Our Reference		366197-11	366197-13	366197-16	366197-17	366197-19
Your Reference	UNITS	BH18_0.25-0.3	BH18_1.0-1.1	BH13_0.4-0.5	BH30_0.0-0.1	QC100
Date Sampled		12/11/2024	12/11/2024	12/11/2024	12/11/2024	12/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024	21/11/2024	21/11/2024
Moisture	%	14	11	8.6	9.4	8.0

Moisture		
Our Reference		366197-23
Your Reference	UNITS	QC500
Date Sampled		12/11/2024
Type of sample		Soil
Date prepared	-	20/11/2024
Date analysed	-	21/11/2024
Moisture	%	<0.1

PFAS in Soils Short						
Our Reference		366197-2	366197-11	366197-17	366197-19	366197-23
Your Reference	UNITS	BH21_0.2-0.5	BH18_0.25-0.3	BH30_0.0-0.1	QC100	QC500
Date Sampled		12/11/2024	12/11/2024	12/11/2024	12/11/2024	12/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Perfluorobutanesulfonic acid	µg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluorohexanesulfonic acid - PFHxS	µg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluorooctanesulfonic acid PFOS	µg/kg	0.1	<0.1	0.7	<0.1	<0.1
Perfluorooctanoic acid PFOA	µg/kg	<0.1	<0.1	0.2	<0.1	<0.1
6:2 FTS	µg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
8:2 FTS	µg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Surrogate $^{13}C_8$ *PFOS*	%	100	102	99	100	100
Surrogate $^{13}C_2$ *PFOA*	%	97	98	106	102	103
Extracted ISTD $^{13}C_3$ *PFBS*	%	103	98	101	99	105
Extracted ISTD $^{18}O_2$ *PFHxS*	%	102	99	104	100	105
Extracted ISTD $^{13}C_4$ *PFOS*	%	100	99	99	97	102
Extracted ISTD $^{13}C_4$ *PFOA*	%	101	98	98	98	102
Extracted ISTD $^{13}C_2$ *6:2FTS*	%	103	103	141	101	111
Extracted ISTD $^{13}C_2$ *8:2FTS*	%	114	108	128	111	115
Total Positive PFHxS & PFOS	µg/kg	0.1	<0.1	0.7	<0.1	<0.1
Total Positive PFOS & PFOA	µg/kg	0.1	<0.1	0.8	<0.1	<0.1
Total Positive PFAS	µg/kg	0.1	<0.1	0.8	<0.1	<0.1

PFAS in TCLP Short			
Our Reference		366197-2	366197-11
Your Reference	UNITS	BH21_0.2-0.5	BH18_0.25-0.3
Date Sampled		12/11/2024	12/11/2024
Type of sample		Soil	Soil
Date prepared	-	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024
pH of soil for fluid# determ.	pH units	8.7	8.6
pH of soil TCLP (after HCl)	pH units	1.6	1.6
Extraction fluid used		1	1
pH of final Leachate	pH units	4.9	4.9
Perfluorobutanesulfonic acid	µg/L	<0.01	<0.01
Perfluorohexanesulfonic acid - PFHxS	µg/L	<0.01	<0.01
Perfluorooctanesulfonic acid PFOS	µg/L	<0.01	<0.01
Perfluorooctanoic acid PFOA	µg/L	<0.01	<0.01
6:2 FTS	µg/L	<0.01	<0.01
8:2 FTS	µg/L	<0.02	<0.02
Surrogate $^{13}C_8$ *PFOS*	%	99	104
Surrogate $^{13}C_2$ *PFOA*	%	106	100
Extracted ISTD $^{13}C_3$ *PFBS*	%	99	101
Extracted ISTD $^{18}O_2$ *PFHxS*	%	94	97
Extracted ISTD $^{13}C_4$ *PFOS*	%	97	96
Extracted ISTD $^{13}C_4$ *PFOA*	%	96	96
Extracted ISTD $^{13}C_2$ *6:2FTS*	%	66	64
Extracted ISTD $^{13}C_2$ *8:2FTS*	%	77	74
Total Positive PFHxS & PFOS	µg/L	<0.01	<0.01
Total Positive PFOS & PFOA	µg/L	<0.01	<0.01
Total Positive PFAS	µg/L	<0.01	<0.01

Asbestos ID - soils NEPM - ASB-001						
Our Reference		366197-2	366197-3	366197-11	366197-15	366197-16
Your Reference	UNITS	BH21_0.2-0.5	BH21_0.7-0.8	BH18_0.25-0.3	BH13_0-0.1	BH13_0.4-0.5
Date Sampled		12/11/2024	12/11/2024	12/11/2024	12/11/2024	12/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	25/11/2024	25/11/2024	25/11/2024	25/11/2024	25/11/2024
Sample mass tested	g	641.08	737.12	629.34	241.35	561.6
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown mulch	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos[#1]	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	–	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001
Asbestos comments	-	Nil	Nil	Nil	Nil	Nil

Asbestos ID - soils NEPM - ASB-001		
Our Reference		366197-17
Your Reference	UNITS	BH30_0.0-0.1
Date Sampled		12/11/2024
Type of sample		Soil
Date analysed	-	25/11/2024
Sample mass tested	g	674.37
Sample Description	-	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected
Total Asbestos[#1]	g/kg	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected
ACM >7mm Estimation*	g	–
FA and AF Estimation*	g	–
ACM >7mm Estimation*	%(w/w)	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001
Asbestos comments	-	Nil

Asbestos ID - materials		
Our Reference		366197-24
Your Reference	UNITS	PACM-03
Date Sampled		12/11/2024
Type of sample		Material
Date analysed	-	25/11/2024
Mass / Dimension of Sample	-	59x49x8mm
Sample Description	-	White ceramic tile
Asbestos ID in materials	-	No asbestos detected
Trace Analysis	-	No asbestos detected

vTRH(C6-C10)/BTEXN in Water		
Our Reference		366197-21
Your Reference	UNITS	QC301
Date Sampled		12/11/2024
Type of sample		Water
Date extracted	-	21/11/2024
Date analysed	-	22/11/2024
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	%	101
Surrogate Toluene-d8	%	98
Surrogate 4-Bromofluorobenzene	%	95

svTRH (C10-C40) in Water		
Our Reference	UNITS	366197-21
Your Reference		QC301
Date Sampled		12/11/2024
Type of sample		Water
Date extracted	-	20/11/2024
Date analysed	-	21/11/2024
TRH C_{10} - C_{14}	µg/L	<50
TRH C_{15} - C_{28}	µg/L	<100
TRH C_{29} - C_{36}	µg/L	<100
Total +ve TRH (C10-C36)	µg/L	<50
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
Total +ve TRH (>C10-C40)	µg/L	<50
Surrogate o-Terphenyl	%	84

PFAS in Waters Short		
Our Reference		366197-21
Your Reference	UNITS	QC301
Date Sampled		12/11/2024
Type of sample		Water
Date prepared	-	22/11/2024
Date analysed	-	22/11/2024
Perfluorobutanesulfonic acid	µg/L	<0.01
Perfluorohexanesulfonic acid - PFHxS	µg/L	<0.01
Perfluorooctanesulfonic acid PFOS	µg/L	<0.01
Perfluorooctanoic acid PFOA	µg/L	<0.01
6:2 FTS	µg/L	<0.01
8:2 FTS	µg/L	<0.02
Surrogate $^{13}C_8$ *PFOS*	%	94
Surrogate $^{13}C_2$ *PFOA*	%	100
Extracted ISTD $^{13}C_3$ *PFBS*	%	101
Extracted ISTD $^{18}O_2$ *PFHxS*	%	94
Extracted ISTD $^{13}C_4$ *PFOS*	%	96
Extracted ISTD $^{13}C_4$ *PFOA*	%	92
Extracted ISTD $^{13}C_2$ *6:2FTS*	%	75
Extracted ISTD $^{13}C_2$ *8:2FTS*	%	88
Total Positive PFHxS & PFOS	µg/L	<0.01
Total Positive PFOA & PFOS	µg/L	<0.01
Total Positive PFAS	µg/L	<0.01

Metals in Waters - Acid extractable		
Our Reference		366197-21
Your Reference	UNITS	QC301
Date Sampled		12/11/2024
Type of sample		Water
Date prepared	-	20/11/2024
Date analysed	-	20/11/2024
Arsenic - Total	mg/L	<0.05
Cadmium - Total	mg/L	<0.01
Chromium - Total	mg/L	<0.01
Copper - Total	mg/L	<0.01
Lead - Total	mg/L	<0.03
Mercury - Total	mg/L	<0.0005
Nickel - Total	mg/L	<0.02
Zinc - Total	mg/L	<0.02

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
ASB-001	Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit of 0.1g/kg (0.01% w/w) as per Australian Standard AS4964-2004. Results reported denoted with * are outside our scope of NATA accreditation. NOTE#1 Total Asbestos g/kg was analysed and reported as per Australian Standard AS4964 (This is the sum of ACM >7mm, <7mm and FA/AF relative to the sample mass tested) NOTE#2 The screening level of 0.001% w/w asbestos in soil for FA and AF only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres. Estimation = Estimated asbestos weight Results reported with "--" is equivalent to no visible asbestos identified using Polarised Light microscopy and Dispersion Staining Techniques.
Inorg-004	Toxicity Characteristic Leaching Procedure (TCLP) using AS 4439. Please note that the mass used may be scaled down from default based on sample mass available. Samples are stored at 2-6oC before and after leachate preparation.
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.

Method ID	Methodology Summary
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-021/022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD and/or GC-MS/GC-MSMS. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.
Org-022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS/GC-MSMS. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
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	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.
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.
Org-029	Soil samples are extracted with basified Methanol. Waters and soil extracts are directly injected and/or concentrated/extracted using SPE. TCLPs/ASLP leachates are centrifuged, the supernatant is then analysed (including amendment with solvent) - as per the option in AS4439.3. Analysis is undertaken with LC-MS/MS. PFAS results include the sum of branched and linear isomers where applicable. Please note that PFAS results are corrected for Extracted Internal Standards (QSM 5.4 Table B-15 terminology), which are mass labelled analytes added prior to sample preparation to assess matrix effects and verify processing of the sample. PFAS analytes without a commercially available mass labelled analogue are corrected vs a closely eluting mass labelled PFAS compound. Surrogates are also reported, in this context they are mass labelled PFAS compounds added prior to extraction but are used as monitoring compounds only (not used for result correction). Envicarb (or similar) is used discretionally to remove interfering matrix components. Please contact the laboratory if estimates of Measurement Uncertainty are required as per WA DER.

QUALITY CONTROL: VOCs in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	366197-2
Date Extracted	-			20/11/2024	1	20/11/2024	20/11/2024		20/11/2024	20/11/2024
Date Analysed	-			21/11/2024	1	21/11/2024	21/11/2024		21/11/2024	21/11/2024
Dichlorodifluoromethane	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Chloromethane	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Vinyl Chloride	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Bromomethane	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Chloroethane	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Trichlorofluoromethane	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,1-Dichloroethene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
trans-1,2-Dichloroethene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,1-Dichloroethane	mg/kg	1	Org-023	<1	1	<1	<1	0	122	126
cis-1,2-Dichloroethene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Bromochloromethane	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Chloroform	mg/kg	1	Org-023	<1	1	<1	<1	0	127	119
2,2-Dichloropropane	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,2-Dichloroethane	mg/kg	1	Org-023	<1	1	<1	<1	0	93	90
1,1,1-Trichloroethane	mg/kg	1	Org-023	<1	1	<1	<1	0	111	107
1,1-Dichloropropene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Cyclohexane	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Carbon Tetrachloride	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-023	<0.2	1	<0.2	<0.2	0	110	106
Dibromomethane	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,2-Dichloropropane	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Trichloroethene	mg/kg	1	Org-023	<1	1	<1	<1	0	102	98
Bromodichloromethane	mg/kg	1	Org-023	<1	1	<1	<1	0	104	98
trans-1,3-Dichloropropene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
cis-1,3-Dichloropropene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,1,2-Trichloroethane	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-023	<0.5	1	<0.5	<0.5	0	118	112
1,3-Dichloropropane	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Dibromochloromethane	mg/kg	1	Org-023	<1	1	<1	<1	0	90	84
1,2-Dibromoethane	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Tetrachloroethene	mg/kg	1	Org-023	<1	1	<1	<1	0	102	98
1,1,1,2-Tetrachloroethane	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Chlorobenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	125	122
Bromoform	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
m+p-Xylene	mg/kg	2	Org-023	<2	1	<2	<2	0	118	114
Styrene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,1,2,2-Tetrachloroethane	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]

QUALITY CONTROL: VOCs in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	366197-2
o-Xylene	mg/kg	1	Org-023	<1	1	<1	<1	0	111	108
1,2,3-Trichloropropane	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Isopropylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Bromobenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
n-Propylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
2-Chlorotoluene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
4-Chlorotoluene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,3,5-Trimethylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
tert-Butylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,2,4-Trimethylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,3-Dichlorobenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
sec-Butylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,4-Dichlorobenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
4-Isopropyltoluene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,2-Dichlorobenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
n-Butylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,2-Dibromo-3-chloropropane	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,2,4-Trichlorobenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Hexachlorobutadiene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,2,3-Trichlorobenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	97	1	99	99	0	98	100
Surrogate aaa-Trifluorotoluene	%		Org-023	105	1	103	106	3	118	113
Surrogate Toluene-d_8	%		Org-023	100	1	98	97	1	106	105
Surrogate 4-Bromofluorobenzene	%		Org-023	102	1	102	102	0	99	100

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	366197-2
Date extracted	-			20/11/2024	1	20/11/2024	20/11/2024		20/11/2024	20/11/2024
Date analysed	-			21/11/2024	1	21/11/2024	21/11/2024		21/11/2024	21/11/2024
TRH C_6 - C_9	mg/kg	25	Org-023	<25	1	<25	<25	0	118	114
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	1	<25	<25	0	118	114
Benzene	mg/kg	0.2	Org-023	<0.2	1	<0.2	<0.2	0	110	106
Toluene	mg/kg	0.5	Org-023	<0.5	1	<0.5	<0.5	0	118	112
Ethylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	125	122
m+p-xylene	mg/kg	2	Org-023	<2	1	<2	<2	0	118	114
o-Xylene	mg/kg	1	Org-023	<1	1	<1	<1	0	111	108
Naphthalene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	105	1	103	106	3	118	113

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	17	20/11/2024	20/11/2024		[NT]	[NT]
Date analysed	-			[NT]	17	21/11/2024	21/11/2024		[NT]	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	17	<25	<25	0	[NT]	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	17	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-023	[NT]	17	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-023	[NT]	17	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-023	[NT]	17	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-023	[NT]	17	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-023	[NT]	17	<1	<1	0	[NT]	[NT]
Naphthalene	mg/kg	1	Org-023	[NT]	17	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	17	98	109	11	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	366197-2
Date extracted	-			20/11/2024	1	20/11/2024	20/11/2024		20/11/2024	20/11/2024
Date analysed	-			21/11/2024	1	21/11/2024	21/11/2024		21/11/2024	21/11/2024
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	1	<50	<50	0	109	100
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	1	<100	<100	0	107	98
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	1	<100	<100	0	100	89
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	1	<50	<50	0	109	100
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	1	<100	<100	0	107	98
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	1	<100	<100	0	100	89
Surrogate o-Terphenyl	%		Org-020	91	1	90	88	2	132	131

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	17	20/11/2024	20/11/2024		[NT]	[NT]
Date analysed	-			[NT]	17	21/11/2024	21/11/2024		[NT]	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	17	<50	<50	0	[NT]	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	17	<100	430	125	[NT]	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	17	380	510	29	[NT]	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	17	<50	<50	0	[NT]	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	17	280	730	89	[NT]	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	17	230	280	20	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-020	[NT]	17	91	102	11	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	366197-2
Date extracted	-			20/11/2024	1	20/11/2024	20/11/2024		20/11/2024	20/11/2024
Date analysed	-			22/11/2024	1	21/11/2024	21/11/2024		22/11/2024	22/11/2024
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	74	72
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	76	74
Fluorene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	72	68
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	76	78
Anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	68	66
Pyrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	70	68
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	80	88
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	1	<0.05	<0.05	0	73	64
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	73	1	94	88	7	86	85

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	17	20/11/2024	20/11/2024		[NT]	[NT]
Date analysed	-			[NT]	17	25/11/2024	25/11/2024		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	17	0.2	0.2	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	17	0.3	0.3	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	17	0.3	0.3	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	17	0.1	0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	17	0.1	0.1	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	17	0.2	0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	17	0.2	0.1	67	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	17	0.1	0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	17	91	97	6	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	366197-2
Date extracted	-			20/11/2024	17	20/11/2024	20/11/2024		20/11/2024	20/11/2024
Date analysed	-			22/11/2024	17	22/11/2024	22/11/2024		22/11/2024	22/11/2024
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	17	<0.1	<0.1	0	86	78
HCB	mg/kg	0.1	Org-022/025	<0.1	17	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	<0.1	17	<0.1	<0.1	0	80	74
gamma-BHC	mg/kg	0.1	Org-022/025	<0.1	17	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	<0.1	17	<0.1	<0.1	0	70	70
delta-BHC	mg/kg	0.1	Org-022/025	<0.1	17	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	<0.1	17	<0.1	<0.1	0	72	72
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	17	<0.1	<0.1	0	86	80
gamma-Chlordane	mg/kg	0.1	Org-022/025	<0.1	17	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	<0.1	17	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	<0.1	17	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	<0.1	17	<0.1	<0.1	0	70	66
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	17	<0.1	<0.1	0	80	72
Endrin	mg/kg	0.1	Org-022/025	<0.1	17	<0.1	<0.1	0	74	70
Endosulfan II	mg/kg	0.1	Org-022/025	<0.1	17	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	<0.1	17	<0.1	<0.1	0	78	80
Endrin Aldehyde	mg/kg	0.1	Org-022/025	<0.1	17	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	<0.1	17	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	<0.1	17	<0.1	<0.1	0	70	62
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	17	<0.1	<0.1	0	[NT]	[NT]
Mirex	mg/kg	0.1	Org-022/025	<0.1	17	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	67	17	75	78	4	85	72

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	366197-2
Date extracted	-			20/11/2024	17	20/11/2024	20/11/2024		20/11/2024	20/11/2024
Date analysed	-			22/11/2024	17	22/11/2024	22/11/2024		22/11/2024	22/11/2024
Aroclor 1016	mg/kg	0.1	Org-021/022/025	<0.1	17	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021/022/025	<0.1	17	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021/022/025	<0.1	17	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021/022/025	<0.1	17	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021/022/025	<0.1	17	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021/022/025	<0.1	17	<0.1	<0.1	0	75	76
Aroclor 1260	mg/kg	0.1	Org-021/022/025	<0.1	17	<0.1	<0.1	0	[NT]	[NT]
Surrogate 2-Fluorobiphenyl	%		Org-021/022/025	81	17	87	88	1	86	86

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	366197-2
Date prepared	-			20/11/2024	1	20/11/2024	20/11/2024		20/11/2024	20/11/2024
Date analysed	-			21/11/2024	1	21/11/2024	21/11/2024		21/11/2024	21/11/2024
Arsenic	mg/kg	4	Metals-020	<4	1	<4	<4	0	102	97
Cadmium	mg/kg	0.4	Metals-020	<0.4	1	<0.4	<0.4	0	92	82
Chromium	mg/kg	1	Metals-020	<1	1	4	4	0	96	94
Copper	mg/kg	1	Metals-020	<1	1	4	3	29	98	97
Lead	mg/kg	1	Metals-020	<1	1	2	2	0	96	86
Mercury	mg/kg	0.1	Metals-021	<0.1	1	<0.1	<0.1	0	108	112
Nickel	mg/kg	1	Metals-020	<1	1	<1	<1	0	99	90
Zinc	mg/kg	1	Metals-020	<1	1	4	3	29	96	84

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	17	20/11/2024	20/11/2024		[NT]	[NT]
Date analysed	-			[NT]	17	21/11/2024	21/11/2024		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	17	<4	<4	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	17	0.9	0.9	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	17	8	10	22	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	17	13	11	17	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	17	24	23	4	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	17	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	17	2	2	0	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	17	170	160	6	[NT]	[NT]

QUALITY CONTROL: PFAS in Soils Short					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	[NT]
Date prepared	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Date analysed	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Perfluorobutanesulfonic acid	µg/kg	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	88	[NT]
Perfluorohexanesulfonic acid - PFHxS	µg/kg	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	96	[NT]
Perfluorooctanesulfonic acid PFOS	µg/kg	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	93	[NT]
Perfluorooctanoic acid PFOA	µg/kg	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	90	[NT]
6:2 FTS	µg/kg	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	91	[NT]
8:2 FTS	µg/kg	0.2	Org-029	<0.2	[NT]	[NT]	[NT]	[NT]	89	[NT]
Surrogate $^{13}C_8$ *PFOS*	%		Org-029	98	[NT]	[NT]	[NT]	[NT]	96	[NT]
Surrogate $^{13}C_2$ *PFOA*	%		Org-029	106	[NT]	[NT]	[NT]	[NT]	100	[NT]
Extracted ISTD $^{13}C_3$ *PFBS*	%		Org-029	108	[NT]	[NT]	[NT]	[NT]	109	[NT]
Extracted ISTD $^{18}O_2$ *PFHxS*	%		Org-029	105	[NT]	[NT]	[NT]	[NT]	105	[NT]
Extracted ISTD $^{13}C_4$ *PFOS*	%		Org-029	108	[NT]	[NT]	[NT]	[NT]	107	[NT]
Extracted ISTD $^{13}C_4$ *PFOA*	%		Org-029	101	[NT]	[NT]	[NT]	[NT]	106	[NT]
Extracted ISTD $^{13}C_2$ *6:2FTS*	%		Org-029	109	[NT]	[NT]	[NT]	[NT]	113	[NT]
Extracted ISTD $^{13}C_2$ *8:2FTS*	%		Org-029	120	[NT]	[NT]	[NT]	[NT]	128	[NT]

QUALITY CONTROL: PFAS in TCLP Short					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	366197-11
Date prepared	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	20/11/2024
Date analysed	-			21/11/2024	[NT]	[NT]	[NT]	[NT]	21/11/2024	21/11/2024
Perfluorobutanesulfonic acid	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	97	97
Perfluorohexanesulfonic acid - PFHxS	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	104	100
Perfluorooctanesulfonic acid PFOS	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	101	100
Perfluorooctanoic acid PFOA	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	95	94
6:2 FTS	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	94	94
8:2 FTS	µg/L	0.02	Org-029	<0.02	[NT]	[NT]	[NT]	[NT]	95	90
Surrogate $^{13}C_8$ *PFOS*	%		Org-029	97	[NT]	[NT]	[NT]	[NT]	99	104
Surrogate $^{13}C_2$ *PFOA*	%		Org-029	105	[NT]	[NT]	[NT]	[NT]	101	97
Extracted ISTD $^{13}C_3$ *PFBS*	%		Org-029	95	[NT]	[NT]	[NT]	[NT]	99	98
Extracted ISTD $^{18}O_2$ *PFHxS*	%		Org-029	103	[NT]	[NT]	[NT]	[NT]	98	99
Extracted ISTD $^{13}C_4$ *PFOS*	%		Org-029	103	[NT]	[NT]	[NT]	[NT]	98	97
Extracted ISTD $^{13}C_4$ *PFOA*	%		Org-029	95	[NT]	[NT]	[NT]	[NT]	96	96
Extracted ISTD $^{13}C_2$ *6:2FTS*	%		Org-029	65	[NT]	[NT]	[NT]	[NT]	65	66
Extracted ISTD $^{13}C_2$ *8:2FTS*	%		Org-029	72	[NT]	[NT]	[NT]	[NT]	70	74

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			21/11/2024	[NT]	[NT]	[NT]	[NT]	21/11/2024	[NT]
Date analysed	-			22/11/2024	[NT]	[NT]	[NT]	[NT]	22/11/2024	[NT]
TRH C_6 - C_9	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	98	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	98	[NT]
Benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Toluene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	98	[NT]
m+p-xylene	µg/L	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	97	[NT]
o-xylene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	97	[NT]
Naphthalene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	101	[NT]	[NT]	[NT]	[NT]	100	[NT]
Surrogate Toluene-d8	%		Org-023	99	[NT]	[NT]	[NT]	[NT]	101	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-023	98	[NT]	[NT]	[NT]	[NT]	99	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Date analysed	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
TRH C_{10} - C_{14}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	109	[NT]
TRH C_{15} - C_{28}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	115	[NT]
TRH C_{29} - C_{36}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	100	[NT]
TRH >C_{10} - C_{16}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	109	[NT]
TRH >C_{16} - C_{34}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	115	[NT]
TRH >C_{34} - C_{40}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	100	[NT]
Surrogate o-Terphenyl	%		Org-020	64	[NT]	[NT]	[NT]	[NT]	120	[NT]

QUALITY CONTROL: PFAS in Waters Short					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			22/11/2024	21	22/11/2024	22/11/2024		22/11/2024	[NT]
Date analysed	-			22/11/2024	21	22/11/2024	22/11/2024		22/11/2024	[NT]
Perfluorobutanesulfonic acid	µg/L	0.01	Org-029	<0.01	21	<0.01	<0.01	0	102	[NT]
Perfluorohexanesulfonic acid - PFHxS	µg/L	0.01	Org-029	<0.01	21	<0.01	<0.01	0	102	[NT]
Perfluorooctanesulfonic acid PFOS	µg/L	0.01	Org-029	<0.01	21	<0.01	<0.01	0	97	[NT]
Perfluorooctanoic acid PFOA	µg/L	0.01	Org-029	<0.01	21	<0.01	<0.01	0	102	[NT]
6:2 FTS	µg/L	0.01	Org-029	<0.01	21	<0.01	<0.01	0	112	[NT]
8:2 FTS	µg/L	0.02	Org-029	<0.02	21	<0.02	<0.02	0	109	[NT]
Surrogate $^{13}C_8$ *PFOS*	%		Org-029	93	21	94	97	3	94	[NT]
Surrogate $^{13}C_2$ *PFOA*	%		Org-029	100	21	100	103	3	98	[NT]
Extracted ISTD $^{13}C_3$ *PFBS*	%		Org-029	100	21	101	101	0	98	[NT]
Extracted ISTD $^{18}O_2$ *PFHxS*	%		Org-029	97	21	94	98	4	94	[NT]
Extracted ISTD $^{13}C_4$ *PFOS*	%		Org-029	98	21	96	97	1	100	[NT]
Extracted ISTD $^{13}C_4$ *PFOA*	%		Org-029	93	21	92	91	1	95	[NT]
Extracted ISTD $^{13}C_2$ *6:2FTS*	%		Org-029	80	21	75	80	6	88	[NT]
Extracted ISTD $^{13}C_2$ *8:2FTS*	%		Org-029	83	21	88	78	12	92	[NT]

QUALITY CONTROL: Metals in Waters - Acid extractable						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Date analysed	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Arsenic - Total	mg/L	0.05	Metals-020	<0.05	[NT]	[NT]	[NT]	[NT]	111	[NT]
Cadmium - Total	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	103	[NT]
Chromium - Total	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	103	[NT]
Copper - Total	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	110	[NT]
Lead - Total	mg/L	0.03	Metals-020	<0.03	[NT]	[NT]	[NT]	[NT]	105	[NT]
Mercury - Total	mg/L	0.0005	Metals-021	<0.0005	[NT]	[NT]	[NT]	[NT]	112	[NT]
Nickel - Total	mg/L	0.02	Metals-020	<0.02	[NT]	[NT]	[NT]	[NT]	104	[NT]
Zinc - Total	mg/L	0.02	Metals-020	<0.02	[NT]	[NT]	[NT]	[NT]	105	[NT]

Result Definitions

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

Quality Control Definitions

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

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

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

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

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

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

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

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

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

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

Report Comments

TRH Soil C10-C40 NEPM - The RPD for duplicate results is accepted due to the non homogenous nature of samples 366197-17,17d.

Asbestos-ID in soil: NEPM
This report is consistent with the reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013. This is reported outside our scope of NATA accreditation.

Envirolab Services Pty Ltd
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DATA QUALITY ASSESSMENT SUMMARY

Report Details

Envirolab Report Reference	**366197**
Client ID	Senversa Pty Ltd
Project Reference	S22013, Mars Road DSI
Date Issued	25/11/2024

QC DATA

All laboratory QC data was within the Envirolab Group's specifications except:

QC Specification Exceptions

QC Type	Reference	Analysis	Comments
Precision (as %RPD)	366197-17	TRH >C_{16} -C_{34}	89% RPD fails internal acceptance criteria

See Report 366197-[R00] for QA/QC details

HOLDING TIME COMPLIANCE EVALUATION

All preservation / holding times (based on AS/ASPHA/ISO/NEPM/USEPA reference documents and standards) are compliant except:

Holding Time Exceedances

Analysis	Sample No	Date Sampled	Date Extracted	Date Analysed	Accepted
svTRH (C10-C40) in Water					
	366197-21	12/11/2024	20/11/2024	21/11/2024	✗

Certain analyses have had their recommended technical holding times elongated by filtering and/or freezing on receipt at the laboratory (e.g. BOD, chlorophyll/Pheophytin, nutrients and acid sulphate soil tests).

COMPLIANCE TO QC FREQUENCY (NEPM)

Internal laboratory QC rate complies with NEPM requirements (LCS/MB/MS 1 in 20, Duplicates 1 in 10 samples). Note, samples are batched together with other sample consignments in order to assign QC sample frequency.

QC Evaluation

Duplicate(s) was performed as per NEPM frequency	✓
Laboratory Control Sample(s) were analysed with the samples received	✓
A Method Blank was performed with the samples received	✓
Matrix spike(s) was performed as per NEPM frequency (Not Applicable for Air samples)	✓

Refer to Certificate of Analysis for all Quality Control data.

CoC Updated: 18/11/24, 1852

S22013, Mars Road DSI

	Sample Name	Lab Report	Comment	Date Time	Combo 1M	PFAS Shot Suite	BTEX	Combo 5AN	Combo 3	Combo 5	VOC	Asbestos ID	Asbestos NEPM	TCLP PFAS short suite	HOLD
4	BH02_0.2-0.3	366346	-	13/11/2024 13:41		X		X			X			X	
5	BH02_0.4-0.5	366346	-	13/11/2024 13:41											X
6	BH02_0.9-1.0	366346	-	13/11/2024 13:42											X
7	BH02_1.9-2.0	366346	-	13/11/2024 13:52											X
8	BH02_3.9-4.0	366346	-	13/11/2024 14:10											X
9	BH02_5.9-6.0	366346	-	13/11/2024 15:14											X
10	BH02_7.9-8.0	366346	-	13/11/2024 17:01					X						
1	BH18_3.9-4.0	366346	-	13/11/2024 9:29											X
2	BH18_5.9-6.0	366346	-	13/11/2024 10:36					X						
3	BH18_7.9-8.0	366346	-	13/11/2024 11:32											X
11	QC302	366346	-	13/11/2024 0:00	X	X									
12	QC402	366346	-	13/11/2024 0:00			X								
13	QC502	366346	-	13/11/2024 0:00											X
14	QC503	366346	-	13/11/2024 0:00		X									

ENVIROLAB GROUP
Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 366346

Date Received: 14/11/24
Time Received: 1020
Received By: EW
Temp: Cool/Ambient 3°C
Cooling: Ice/Icepack
Security: Intact/Broken/None

senversa

Chain of Custody Documentation

Senversa Pty Ltd
www.senversa.com.au
ABN 89 132 231 380

Laboratory:
Address:
Contact: Sample Receipt
Phone:

Job Number:	SZ2013	Purchase Order:	
Project Name:	Mars Road DSI	Quote No:	24575162
Sampled By:	LO HY	Turn Around Time:	Standard
Project Manager:	Zoe Smith	Page:	1 of 1
Email Report To:	Zoe.Smith@senversa.com.au	Phone/Mobile:	0431 659 835

Sample Information					Container Information		Analysis Required											
Lab ID	Sample ID	Matrix *	Date	Time	Type / Code	Total Bottles											HOLD	Comments: e.g. Highly contaminated sample; hazardous materials present; trace LORs etc.
1	BH03_3.0-4.0	Soil	13/11/24	AM	JAR PFAS	x2											X	Security: Intact/Broken/None
2	BH03_5.0-6.0					x2											X	
3	BH03_7.0-8.0					x2											X	
4	BH02_0.2-0.3					x3											X	
5	BH02_0.4-0.5					x2											X	
6	BH02_0.9-1.0					x2											X	
7	BH02_1.9-2.0					x2											X	
8	BH02_3.9-4.0					x2											X	
9	BH02_5.9-6.0					x2											X	
10	BH02_7.9-8.0					x2											X	
11	QC302	Water	13/11/24	PM	Vials, Bottles	x7											X	
12	QC402				Vial	x1											X	BS
13	QC502				Vial	x1												TB
14	QC503				PFAS	x1												TB PFAS
Total																		

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 366246
Date Received: 14/11/24
Time Received: 1020
Received By: EW
Temp: Cool/Ambient
Cooling: Ice/icepack 3°C

Sampler: I attest that proper field sampling procedures in accordance with Senversa standard procedures and/or project specifications were used during the collection of these samples:	Sampler Name: Lucas Kowalkowski	Signature:	Date: 13/11/24

Relinquished By:			Method of Shipment (if applicable):	Received by:	
Name/Signature:	Lucas Kowalkowski	Date: 15/11/24	Carrier / Reference #:	Name/Signature:	Date:
Of:		Time:	Date/Time:	Of:	Time:
Name/Signature:		Date:	Carrier / Reference #:	Name/Signature:	Date:
Of:		Time:	Date/Time:	Of:	Time:
Name/Signature:		Date:	Carrier / Reference #:	Name/Signature:	Date:
Of:		Time:	Date/Time:	Of:	Time:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Acid (HNO_3) Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide (NaOH)/Cadmium (Cd) Preserved; S = Sodium Hydroxide Preserved Plastic; STH = Sodium thiosulfate preserved plastic; V = VOA Vial Hydochloric Acid (HCl) Preserved; VS = VOA Vial Sulphuric Preserved; VSA = Sulphuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation Bottle; SP = Sulphuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; UA = Unpreserved Amber Glass; L=Lugol's Iodine preserved white plastic bottle; SW= sulfuric acid preserved wide mouth glass jar

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SAMPLE RECEIPT ADVICE

Client Details

Client	Senversa Pty Ltd
Attention	Zoe Smith

Sample Login Details

Your reference	S22013, Mars Road DSI
Envirolab Reference	366346
Date Sample Received	14/11/2024
Date Instructions Received	18/11/2024
Date Results Expected to be Reported	25/11/2024

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	13 Soil, 1 Water
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	3
Cooling Method	Ice
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:

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Sample ID	VOCs in soil	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	PCBs in Soil	Acid Extractable metalsin soil	Asbestos ID - soils NEPM - ASB-001	PFAS in Soils Short	PFAS in TCLP Short	vTRH(C6-C10)/BTEXN in Water	svTRH (C10-C40) in Water	Metals in Waters -Acid extractable	PFAS in Waters Short	On Hold
BH18_3.9-4.0															✓
BH18_5.9-6.0		✓	✓	✓			✓								
BH18_7.9-8.0															✓
BH02_0.2-0.3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
BH02_0.4-0.5															✓
BH02_0.9-1.0															✓
BH02_1.9-2.0															✓
BH02_3.9-4.0															✓
BH02_5.9-6.0															✓
BH02_7.9-8.0		✓	✓	✓			✓								
QC302											✓	✓	✓	✓	
QC402		✓													
QC502															✓
QC503									✓						

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.

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CERTIFICATE OF ANALYSIS 366346

Client Details

Client	Senversa Pty Ltd
Attention	Zoe Smith
Address	6/15 William St, Melbourne, VIC, 3000

Sample Details

Your Reference	**S22013, Mars Road DSI**
Number of Samples	13 Soil, 1 Water
Date samples received	14/11/2024
Date completed instructions received	18/11/2024

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.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	25/11/2024
Date of Issue	28/11/2024
Reissue Details	This report replaces R00 created on 25/11/2024 due to: Sample ID Amended (Client Request)

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

Asbestos Approved By
Analysed by Asbestos Approved Analyst: Nyovan Moonean
Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By
Dragana Tomas, Senior Chemist
Giovanni Agosti, Group Technical Manager
Liam Timmins, Organics Supervisor
Lucy Zhu, Asbestos Supervisor
Sean McAlary, Senior Chemist
Tabitha Roberts, Senior Chemist
Timothy Toll, Senior Chemist

Authorised By
Nancy Zhang, Laboratory Manager

VOCs in soil		
Our Reference		366346-4
Your Reference	UNITS	BH02_0.2-0.3
Date Sampled		13/11/2024
Type of sample		Soil
Date Extracted	-	20/11/2024
Date Analysed	-	20/11/2024
Dichlorodifluoromethane	mg/kg	<1
Chloromethane	mg/kg	<1
Vinyl Chloride	mg/kg	<1
Bromomethane	mg/kg	<1
Chloroethane	mg/kg	<1
Trichlorofluoromethane	mg/kg	<1
1,1-Dichloroethene	mg/kg	<1
trans-1,2-Dichloroethene	mg/kg	<1
1,1-Dichloroethane	mg/kg	<1
cis-1,2-Dichloroethene	mg/kg	<1
Bromochloromethane	mg/kg	<1
Chloroform	mg/kg	<1
2,2-Dichloropropane	mg/kg	<1
1,2-Dichloroethane	mg/kg	<1
1,1,1-Trichloroethane	mg/kg	<1
1,1-Dichloropropene	mg/kg	<1
Cyclohexane	mg/kg	<1
Carbon Tetrachloride	mg/kg	<1
Benzene	mg/kg	<0.2
Dibromomethane	mg/kg	<1
1,2-Dichloropropane	mg/kg	<1
Trichloroethene	mg/kg	<1
Bromodichloromethane	mg/kg	<1
trans-1,3-Dichloropropene	mg/kg	<1
cis-1,3-Dichloropropene	mg/kg	<1
1,1,2-Trichloroethane	mg/kg	<1
Toluene	mg/kg	<0.5
1,3-Dichloropropane	mg/kg	<1
Dibromochloromethane	mg/kg	<1
1,2-Dibromoethane	mg/kg	<1
Tetrachloroethene	mg/kg	<1
1,1,1,2-Tetrachloroethane	mg/kg	<1
Chlorobenzene	mg/kg	<1
Ethylbenzene	mg/kg	<1

VOCs in soil		
Our Reference		366346-4
Your Reference	UNITS	BH02_0.2-0.3
Date Sampled		13/11/2024
Type of sample		Soil
Bromoform	mg/kg	<1
m+p-Xylene	mg/kg	<2
Styrene	mg/kg	<1
1,1,2,2-Tetrachloroethane	mg/kg	<1
o-Xylene	mg/kg	<1
1,2,3-Trichloropropane	mg/kg	<1
Isopropylbenzene	mg/kg	<1
Bromobenzene	mg/kg	<1
n-Propylbenzene	mg/kg	<1
2-Chlorotoluene	mg/kg	<1
4-Chlorotoluene	mg/kg	<1
1,3,5-Trimethylbenzene	mg/kg	<1
tert-Butylbenzene	mg/kg	<1
1,2,4-Trimethylbenzene	mg/kg	<1
1,3-Dichlorobenzene	mg/kg	<1
sec-Butylbenzene	mg/kg	<1
1,4-Dichlorobenzene	mg/kg	<1
4-Isopropyltoluene	mg/kg	<1
1,2-Dichlorobenzene	mg/kg	<1
n-Butylbenzene	mg/kg	<1
1,2-Dibromo-3-chloropropane	mg/kg	<1
1,2,4-Trichlorobenzene	mg/kg	<1
Hexachlorobutadiene	mg/kg	<1
1,2,3-Trichlorobenzene	mg/kg	<1
Surrogate Dibromofluoromethane	%	105
Surrogate aaa-Trifluorotoluene	%	82
Surrogate Toluene-d_8	%	102
Surrogate 4-Bromofluorobenzene	%	100

vTRH(C6-C10)/BTEXN in Soil					
Our Reference		366346-2	366346-4	366346-10	366346-12
Your Reference	UNITS	BH18_5.9-6.0	BH02_0.2-0.3	BH02_7.9-8.0	QC402
Date Sampled		13/11/2024	13/11/2024	13/11/2024	13/11/2024
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024
TRH C_6 - C_9	mg/kg	<25	<25	<25	[NA]
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	[NA]
vTRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	[NA]
Benzene	mg/kg	<0.2	<0.2	<0.2	100%
Toluene	mg/kg	<0.5	<0.5	<0.5	99%
Ethylbenzene	mg/kg	<1	<1	<1	94%
m+p-xylene	mg/kg	<2	<2	<2	95%
o-Xylene	mg/kg	<1	<1	<1	94%
Naphthalene	mg/kg	<1	<1	<1	[NA]
Total +ve Xylenes	mg/kg	<1	<1	<1	[NA]
Surrogate aaa-Trifluorotoluene	%	93	82	94	90

svTRH (C10-C40) in Soil				
Our Reference	UNITS	366346-2	366346-4	366346-10
Your Reference		BH18_5.9-6.0	BH02_0.2-0.3	BH02_7.9-8.0
Date Sampled		13/11/2024	13/11/2024	13/11/2024
Type of sample		Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	23/11/2024	23/11/2024	23/11/2024
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50
TRH >C_{10} -C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50
Surrogate o-Terphenyl	%	77	76	75

PAHs in Soil				
Our Reference	UNITS	366346-2	366346-4	366346-10
Your Reference		BH18_5.9-6.0	BH02_0.2-0.3	BH02_7.9-8.0
Date Sampled		13/11/2024	13/11/2024	13/11/2024
Type of sample		Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	22/11/2024	22/11/2024
Naphthalene	mg/kg	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	88	81	95

Organochlorine Pesticides in soil		
Our Reference		366346-4
Your Reference	UNITS	BH02_0.2-0.3
Date Sampled		13/11/2024
Type of sample		Soil
Date extracted	-	20/11/2024
Date analysed	-	22/11/2024
alpha-BHC	mg/kg	<0.1
HCB	mg/kg	<0.1
beta-BHC	mg/kg	<0.1
gamma-BHC	mg/kg	<0.1
Heptachlor	mg/kg	<0.1
delta-BHC	mg/kg	<0.1
Aldrin	mg/kg	<0.1
Heptachlor Epoxide	mg/kg	<0.1
gamma-Chlordane	mg/kg	<0.1
alpha-chlordane	mg/kg	<0.1
Endosulfan I	mg/kg	<0.1
pp-DDE	mg/kg	<0.1
Dieldrin	mg/kg	<0.1
Endrin	mg/kg	<0.1
Endosulfan II	mg/kg	<0.1
pp-DDD	mg/kg	<0.1
Endrin Aldehyde	mg/kg	<0.1
pp-DDT	mg/kg	<0.1
Endosulfan Sulphate	mg/kg	<0.1
Methoxychlor	mg/kg	<0.1
Mirex	mg/kg	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1
Total Positive Aldrin+Dieldrin	mg/kg	<0.1
Surrogate 4-Chloro-3-NBTF	%	89

PCBs in Soil		
Our Reference		366346-4
Your Reference	UNITS	BH02_0.2-0.3
Date Sampled		13/11/2024
Type of sample		Soil
Date extracted	-	20/11/2024
Date analysed	-	22/11/2024
Aroclor 1016	mg/kg	<0.1
Aroclor 1221	mg/kg	<0.1
Aroclor 1232	mg/kg	<0.1
Aroclor 1242	mg/kg	<0.1
Aroclor 1248	mg/kg	<0.1
Aroclor 1254	mg/kg	<0.1
Aroclor 1260	mg/kg	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1
Surrogate 2-Fluorobiphenyl	%	80

Acid Extractable metals in soil				
Our Reference	UNITS	366346-2	366346-4	366346-10
Your Reference		BH18_5.9-6.0	BH02_0.2-0.3	BH02_7.9-8.0
Date Sampled		13/11/2024	13/11/2024	13/11/2024
Type of sample		Soil	Soil	Soil
Date prepared	-	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	20/11/2024	20/11/2024	20/11/2024
Arsenic	mg/kg	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4
Chromium	mg/kg	7	16	7
Copper	mg/kg	4	10	2
Lead	mg/kg	7	14	12
Mercury	mg/kg	<0.1	<0.1	<0.1
Nickel	mg/kg	4	9	4
Zinc	mg/kg	17	31	16

Moisture					
Our Reference		366346-2	366346-4	366346-10	366346-14
Your Reference	UNITS	BH18_5.9-6.0	BH02_0.2-0.3	BH02_7.9-8.0	QC503
Date Sampled		13/11/2024	13/11/2024	13/11/2024	13/11/2024
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	19/11/2024	19/11/2024	19/11/2024	19/11/2024
Date analysed	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Moisture	%	14	10	11	1.6

Asbestos ID - soils NEPM - ASB-001		
Our Reference	UNITS	366346-4
Your Reference		BH02_0.2-0.3
Date Sampled		13/11/2024
Type of sample		Soil
Date analysed	-	25/11/2024
Sample mass tested	g	776.76
Sample Description	-	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected
Total Asbestos[#1]	g/kg	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected
ACM >7mm Estimation*	g	–
FA and AF Estimation*	g	–
ACM >7mm Estimation*	%(w/w)	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001
Asbestos comments	-	Nil

PFAS in Soils Short			
Our Reference		366346-4	366346-14
Your Reference	UNITS	BH02_0.2-0.3	QC503
Date Sampled		13/11/2024	13/11/2024
Type of sample		Soil	Soil
Date prepared	-	20/11/2024	20/11/2024
Date analysed	-	20/11/2024	20/11/2024
Perfluorobutanesulfonic acid	µg/kg	<0.1	<0.1
Perfluorohexanesulfonic acid - PFHxS	µg/kg	<0.1	<0.1
Perfluorooctanesulfonic acid PFOS	µg/kg	1.9	<0.1
Perfluorooctanoic acid PFOA	µg/kg	0.2	<0.1
6:2 FTS	µg/kg	<0.1	<0.1
8:2 FTS	µg/kg	<0.2	<0.2
Surrogate $^{13}C_8$ *PFOS*	%	97	101
Surrogate $^{13}C_2$ *PFOA*	%	105	100
Extracted ISTD $^{13}C_3$ *PFBS*	%	101	106
Extracted ISTD $^{18}O_2$ *PFHxS*	%	98	110
Extracted ISTD $^{13}C_4$ *PFOS*	%	101	107
Extracted ISTD $^{13}C_4$ *PFOA*	%	98	104
Extracted ISTD $^{13}C_2$ *6:2FTS*	%	105	107
Extracted ISTD $^{13}C_2$ *8:2FTS*	%	117	110
Total Positive PFHxS & PFOS	µg/kg	1.9	<0.1
Total Positive PFOS & PFOA	µg/kg	2.1	<0.1
Total Positive PFAS	µg/kg	2.1	<0.1

PFAS in TCLP Short		
Our Reference		366346-4
Your Reference	UNITS	BH02_0.2-0.3
Date Sampled		13/11/2024
Type of sample		Soil
Date prepared	-	20/11/2024
Date analysed	-	21/11/2024
pH of soil for fluid# determ.	pH units	8.6
pH of soil TCLP (after HCl)	pH units	1.7
Extraction fluid used		1
pH of final Leachate	pH units	5.0
Perfluorobutanesulfonic acid	µg/L	<0.01
Perfluorohexanesulfonic acid - PFHxS	µg/L	<0.01
Perfluorooctanesulfonic acid PFOS	µg/L	0.03
Perfluorooctanoic acid PFOA	µg/L	<0.01
6:2 FTS	µg/L	<0.01
8:2 FTS	µg/L	<0.02
Surrogate $^{13}C_8$ *PFOS*	%	103
Surrogate $^{13}C_2$ *PFOA*	%	103
Extracted ISTD $^{13}C_3$ *PFBS*	%	97
Extracted ISTD $^{18}O_2$ *PFHxS*	%	92
Extracted ISTD $^{13}C_4$ *PFOS*	%	96
Extracted ISTD $^{13}C_4$ *PFOA*	%	94
Extracted ISTD $^{13}C_2$ *6:2FTS*	%	67
Extracted ISTD $^{13}C_2$ *8:2FTS*	%	75
Total Positive PFHxS & PFOS	µg/L	0.03
Total Positive PFOS & PFOA	µg/L	0.03
Total Positive PFAS	µg/L	0.03

vTRH(C6-C10)/BTEXN in Water		
Our Reference	UNITS	366346-11
Your Reference		QC302
Date Sampled		13/11/2024
Type of sample		Water
Date extracted	-	21/11/2024
Date analysed	-	22/11/2024
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	%	96
Surrogate Toluene-d8	%	98
Surrogate 4-Bromofluorobenzene	%	88

svTRH (C10-C40) in Water		
Our Reference	UNITS	366346-11
Your Reference		QC302
Date Sampled		13/11/2024
Type of sample		Water
Date extracted	-	20/11/2024
Date analysed	-	21/11/2024
TRH C_{10} - C_{14}	µg/L	<50
TRH C_{15} - C_{28}	µg/L	<100
TRH C_{29} - C_{36}	µg/L	<100
Total +ve TRH (C10-C36)	µg/L	<50
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
Total +ve TRH (>C10-C40)	µg/L	<50
Surrogate o-Terphenyl	%	62

Metals in Waters - Acid extractable		
Our Reference		366346-11
Your Reference	UNITS	QC302
Date Sampled		13/11/2024
Type of sample		Water
Date prepared	-	20/11/2024
Date analysed	-	20/11/2024
Arsenic - Total	mg/L	<0.05
Cadmium - Total	mg/L	<0.01
Chromium - Total	mg/L	<0.01
Copper - Total	mg/L	<0.01
Lead - Total	mg/L	<0.03
Mercury - Total	mg/L	<0.0005
Nickel - Total	mg/L	<0.02
Zinc - Total	mg/L	<0.02

PFAS in Waters Short		
Our Reference		366346-11
Your Reference	UNITS	QC302
Date Sampled		13/11/2024
Type of sample		Water
Date prepared	-	22/11/2024
Date analysed	-	22/11/2024
Perfluorobutanesulfonic acid	µg/L	<0.01
Perfluorohexanesulfonic acid - PFHxS	µg/L	<0.01
Perfluorooctanesulfonic acid PFOS	µg/L	<0.01
Perfluorooctanoic acid PFOA	µg/L	<0.01
6:2 FTS	µg/L	<0.01
8:2 FTS	µg/L	<0.02
Surrogate $^{13}C_8$ *PFOS*	%	97
Surrogate $^{13}C_2$ *PFOA*	%	102
Extracted ISTD $^{13}C_3$ *PFBS*	%	97
Extracted ISTD $^{18}O_2$ *PFHxS*	%	95
Extracted ISTD $^{13}C_4$ *PFOS*	%	93
Extracted ISTD $^{13}C_4$ *PFOA*	%	91
Extracted ISTD $^{13}C_2$ *6:2FTS*	%	76
Extracted ISTD $^{13}C_2$ *8:2FTS*	%	77
Total Positive PFHxS & PFOS	µg/L	<0.01
Total Positive PFOA & PFOS	µg/L	<0.01
Total Positive PFAS	µg/L	<0.01

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
ASB-001	Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit of 0.1g/kg (0.01% w/w) as per Australian Standard AS4964-2004. Results reported denoted with * are outside our scope of NATA accreditation. NOTE#1 Total Asbestos g/kg was analysed and reported as per Australian Standard AS4964 (This is the sum of ACM >7mm, <7mm and FA/AF relative to the sample mass tested) NOTE#2 The screening level of 0.001% w/w asbestos in soil for FA and AF only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres. Estimation = Estimated asbestos weight Results reported with "--" is equivalent to no visible asbestos identified using Polarised Light microscopy and Dispersion Staining Techniques.
Inorg-004	Toxicity Characteristic Leaching Procedure (TCLP) using AS 4439. Please note that the mass used may be scaled down from default based on sample mass available. Samples are stored at 2-6oC before and after leachate preparation.
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.

Method ID	Methodology Summary
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-021/022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD and/or GC-MS/GC-MSMS. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.
Org-022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS/GC-MSMS. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
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	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.
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.
Org-029	Soil samples are extracted with basified Methanol. Waters and soil extracts are directly injected and/or concentrated/extracted using SPE. TCLPs/ASLP leachates are centrifuged, the supernatant is then analysed (including amendment with solvent) - as per the option in AS4439.3. Analysis is undertaken with LC-MS/MS. PFAS results include the sum of branched and linear isomers where applicable. Please note that PFAS results are corrected for Extracted Internal Standards (QSM 5.4 Table B-15 terminology), which are mass labelled analytes added prior to sample preparation to assess matrix effects and verify processing of the sample. PFAS analytes without a commercially available mass labelled analogue are corrected vs a closely eluting mass labelled PFAS compound. Surrogates are also reported, in this context they are mass labelled PFAS compounds added prior to extraction but are used as monitoring compounds only (not used for result correction). Envicarb (or similar) is used discretionally to remove interfering matrix components. Please contact the laboratory if estimates of Measurement Uncertainty are required as per WA DER.

QUALITY CONTROL: VOCs in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date Extracted	-			20/11/2024	4	20/11/2024	20/11/2024		20/11/2024	[NT]
Date Analysed	-			20/11/2024	4	20/11/2024	20/11/2024		20/11/2024	[NT]
Dichlorodifluoromethane	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
Chloromethane	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
Vinyl Chloride	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
Bromomethane	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
Chloroethane	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
Trichlorofluoromethane	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
1,1-Dichloroethene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
trans-1,2-Dichloroethene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
1,1-Dichloroethane	mg/kg	1	Org-023	<1	4	<1	<1	0	112	[NT]
cis-1,2-Dichloroethene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
Bromochloromethane	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
Chloroform	mg/kg	1	Org-023	<1	4	<1	<1	0	114	[NT]
2,2-Dichloropropane	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
1,2-Dichloroethane	mg/kg	1	Org-023	<1	4	<1	<1	0	97	[NT]
1,1,1-Trichloroethane	mg/kg	1	Org-023	<1	4	<1	<1	0	93	[NT]
1,1-Dichloropropene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
Cyclohexane	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
Carbon Tetrachloride	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-023	<0.2	4	<0.2	<0.2	0	97	[NT]
Dibromomethane	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
1,2-Dichloropropane	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
Trichloroethene	mg/kg	1	Org-023	<1	4	<1	<1	0	91	[NT]
Bromodichloromethane	mg/kg	1	Org-023	<1	4	<1	<1	0	91	[NT]
trans-1,3-Dichloropropene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
cis-1,3-Dichloropropene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
1,1,2-Trichloroethane	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-023	<0.5	4	<0.5	<0.5	0	105	[NT]
1,3-Dichloropropane	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
Dibromochloromethane	mg/kg	1	Org-023	<1	4	<1	<1	0	95	[NT]
1,2-Dibromoethane	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
Tetrachloroethene	mg/kg	1	Org-023	<1	4	<1	<1	0	101	[NT]
1,1,1,2-Tetrachloroethane	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
Chlorobenzene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-023	<1	4	<1	<1	0	105	[NT]
Bromoform	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
m+p-Xylene	mg/kg	2	Org-023	<2	4	<2	<2	0	105	[NT]
Styrene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
1,1,2,2-Tetrachloroethane	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]

QUALITY CONTROL: VOCs in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
o-Xylene	mg/kg	1	Org-023	<1	4	<1	<1	0	103	[NT]
1,2,3-Trichloropropane	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
Isopropylbenzene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
Bromobenzene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
n-Propylbenzene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
2-Chlorotoluene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
4-Chlorotoluene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
1,3,5-Trimethylbenzene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
tert-Butylbenzene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
1,2,4-Trimethylbenzene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
1,3-Dichlorobenzene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
sec-Butylbenzene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
1,4-Dichlorobenzene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
4-Isopropyltoluene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
1,2-Dichlorobenzene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
n-Butylbenzene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
1,2-Dibromo-3-chloropropane	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
1,2,4-Trichlorobenzene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
Hexachlorobutadiene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
1,2,3-Trichlorobenzene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	105	4	105	104	1	103	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	92	4	82	96	16	90	[NT]
Surrogate Toluene-d_8	%		Org-023	102	4	102	103	1	100	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-023	100	4	100	100	0	99	[NT]

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	-			20/11/2024	4	20/11/2024	20/11/2024		20/11/2024	[NT]
Date analysed	-			20/11/2024	4	20/11/2024	20/11/2024		20/11/2024	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	<25	4	<25	<25	0	103	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	4	<25	<25	0	103	[NT]
Benzene	mg/kg	0.2	Org-023	<0.2	4	<0.2	<0.2	0	97	[NT]
Toluene	mg/kg	0.5	Org-023	<0.5	4	<0.5	<0.5	0	105	[NT]
Ethylbenzene	mg/kg	1	Org-023	<1	4	<1	<1	0	105	[NT]
m+p-xylene	mg/kg	2	Org-023	<2	4	<2	<2	0	105	[NT]
o-Xylene	mg/kg	1	Org-023	<1	4	<1	<1	0	103	[NT]
Naphthalene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	92	4	82	96	16	90	[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	-			20/11/2024	4	20/11/2024	20/11/2024		20/11/2024	[NT]
Date analysed	-			23/11/2024	4	23/11/2024	23/11/2024		23/11/2024	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	4	<50	<50	0	93	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	4	<100	<100	0	82	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	4	<100	<100	0	86	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	4	<50	<50	0	93	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	4	<100	<100	0	82	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	4	<100	<100	0	86	[NT]
Surrogate o-Terphenyl	%		Org-020	78	4	76	76	0	111	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			20/11/2024	4	20/11/2024	20/11/2024		20/11/2024	[NT]
Date analysed	-			22/11/2024	4	22/11/2024	22/11/2024		22/11/2024	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	70	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	72	[NT]
Fluorene	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	66	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	68	[NT]
Anthracene	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	66	[NT]
Pyrene	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	64	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	82	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	4	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	4	<0.05	0.07	33	62	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	90	4	81	84	4	87	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			20/11/2024	4	20/11/2024	20/11/2024		20/11/2024	[NT]
Date analysed	-			22/11/2024	4	22/11/2024	22/11/2024		22/11/2024	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	76	[NT]
HCB	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	70	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	78	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	72	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	76	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	68	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	76	[NT]
Endrin	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	78	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	72	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	80	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Mirex	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	90	4	89	87	2	88	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			20/11/2024	4	20/11/2024	20/11/2024		20/11/2024	[NT]
Date analysed	-			22/11/2024	4	22/11/2024	22/11/2024		22/11/2024	[NT]
Aroclor 1016	mg/kg	0.1	Org-021/022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021/022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021/022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021/022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021/022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021/022/025	<0.1	4	<0.1	<0.1	0	66	[NT]
Aroclor 1260	mg/kg	0.1	Org-021/022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Surrogate 2-Fluorobiphenyl	%		Org-021/022/025	88	4	80	82	2	84	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			20/11/2024	4	20/11/2024	20/11/2024		20/11/2024	[NT]
Date analysed	-			20/11/2024	4	20/11/2024	20/11/2024		20/11/2024	[NT]
Arsenic	mg/kg	4	Metals-020	<4	4	<4	5	22	110	[NT]
Cadmium	mg/kg	0.4	Metals-020	<0.4	4	<0.4	<0.4	0	106	[NT]
Chromium	mg/kg	1	Metals-020	<1	4	16	15	6	103	[NT]
Copper	mg/kg	1	Metals-020	<1	4	10	11	10	102	[NT]
Lead	mg/kg	1	Metals-020	<1	4	14	20	35	104	[NT]
Mercury	mg/kg	0.1	Metals-021	<0.1	4	<0.1	<0.1	0	98	[NT]
Nickel	mg/kg	1	Metals-020	<1	4	9	9	0	104	[NT]
Zinc	mg/kg	1	Metals-020	<1	4	31	30	3	100	[NT]

QUALITY CONTROL: PFAS in Soils Short						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			20/11/2024	4	20/11/2024	20/11/2024		20/11/2024	[NT]
Date analysed	-			20/11/2024	4	20/11/2024	20/11/2024		20/11/2024	[NT]
Perfluorobutanesulfonic acid	µg/kg	0.1	Org-029	<0.1	4	<0.1	<0.1	0	88	[NT]
Perfluorohexanesulfonic acid - PFHxS	µg/kg	0.1	Org-029	<0.1	4	<0.1	<0.1	0	96	[NT]
Perfluorooctanesulfonic acid PFOS	µg/kg	0.1	Org-029	<0.1	4	1.9	1.7	11	93	[NT]
Perfluorooctanoic acid PFOA	µg/kg	0.1	Org-029	<0.1	4	0.2	0.1	67	90	[NT]
6:2 FTS	µg/kg	0.1	Org-029	<0.1	4	<0.1	<0.1	0	91	[NT]
8:2 FTS	µg/kg	0.2	Org-029	<0.2	4	<0.2	<0.2	0	89	[NT]
Surrogate $^{13}C_8$ *PFOS*	%		Org-029	98	4	97	99	2	96	[NT]
Surrogate $^{13}C_2$ *PFOA*	%		Org-029	106	4	105	100	5	100	[NT]
Extracted ISTD $^{13}C_3$ *PFBS*	%		Org-029	108	4	101	101	0	109	[NT]
Extracted ISTD $^{18}O_2$ *PFHxS*	%		Org-029	105	4	98	103	5	105	[NT]
Extracted ISTD $^{13}C_4$ *PFOS*	%		Org-029	108	4	101	99	2	107	[NT]
Extracted ISTD $^{13}C_4$ *PFOA*	%		Org-029	101	4	98	101	3	106	[NT]
Extracted ISTD $^{13}C_2$ *6:2FTS*	%		Org-029	109	4	105	109	4	113	[NT]
Extracted ISTD $^{13}C_2$ *8:2FTS*	%		Org-029	120	4	117	114	3	128	[NT]

QUALITY CONTROL: PFAS in TCLP Short						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			20/11/2024	4	20/11/2024	20/11/2024		20/11/2024	[NT]
Date analysed	-			21/11/2024	4	21/11/2024	21/11/2024		21/11/2024	[NT]
Perfluorobutanesulfonic acid	µg/L	0.01	Org-029	<0.01	4	<0.01	<0.01	0	97	[NT]
Perfluorohexanesulfonic acid - PFHxS	µg/L	0.01	Org-029	<0.01	4	<0.01	<0.01	0	104	[NT]
Perfluorooctanesulfonic acid PFOS	µg/L	0.01	Org-029	<0.01	4	0.03	0.03	0	101	[NT]
Perfluorooctanoic acid PFOA	µg/L	0.01	Org-029	<0.01	4	<0.01	<0.01	0	95	[NT]
6:2 FTS	µg/L	0.01	Org-029	<0.01	4	<0.01	<0.01	0	94	[NT]
8:2 FTS	µg/L	0.02	Org-029	<0.02	4	<0.02	<0.02	0	95	[NT]
Surrogate $^{13}C_8$ *PFOS*	%		Org-029	97	4	103	104	1	99	[NT]
Surrogate $^{13}C_2$ *PFOA*	%		Org-029	105	4	103	101	2	101	[NT]
Extracted ISTD $^{13}C_3$ *PFBS*	%		Org-029	95	4	97	96	1	99	[NT]
Extracted ISTD $^{18}O_2$ *PFHxS*	%		Org-029	103	4	92	91	1	98	[NT]
Extracted ISTD $^{13}C_4$ *PFOS*	%		Org-029	103	4	96	96	0	98	[NT]
Extracted ISTD $^{13}C_4$ *PFOA*	%		Org-029	95	4	94	97	3	96	[NT]
Extracted ISTD $^{13}C_2$ *6:2FTS*	%		Org-029	65	4	67	67	0	65	[NT]
Extracted ISTD $^{13}C_2$ *8:2FTS*	%		Org-029	72	4	75	77	3	70	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			21/11/2024	[NT]	[NT]	[NT]	[NT]	21/11/2024	[NT]
Date analysed	-			22/11/2024	[NT]	[NT]	[NT]	[NT]	22/11/2024	[NT]
TRH C_6 - C_9	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	98	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	98	[NT]
Benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Toluene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	98	[NT]
m+p-xylene	µg/L	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	97	[NT]
o-xylene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	97	[NT]
Naphthalene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	101	[NT]	[NT]	[NT]	[NT]	100	[NT]
Surrogate Toluene-d8	%		Org-023	99	[NT]	[NT]	[NT]	[NT]	101	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-023	98	[NT]	[NT]	[NT]	[NT]	99	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Date analysed	-			21/11/2024	[NT]	[NT]	[NT]	[NT]	21/11/2024	[NT]
TRH C_{10} - C_{14}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	114	[NT]
TRH C_{15} - C_{28}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	119	[NT]
TRH C_{29} - C_{36}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	129	[NT]
TRH >C_{10} - C_{16}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	114	[NT]
TRH >C_{16} - C_{34}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	119	[NT]
TRH >C_{34} - C_{40}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	129	[NT]
Surrogate o-Terphenyl	%		Org-020	80	[NT]	[NT]	[NT]	[NT]	109	[NT]

QUALITY CONTROL: Metals in Waters - Acid extractable						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Date analysed	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Arsenic - Total	mg/L	0.05	Metals-020	<0.05	[NT]	[NT]	[NT]	[NT]	111	[NT]
Cadmium - Total	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	103	[NT]
Chromium - Total	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	103	[NT]
Copper - Total	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	110	[NT]
Lead - Total	mg/L	0.03	Metals-020	<0.03	[NT]	[NT]	[NT]	[NT]	105	[NT]
Mercury - Total	mg/L	0.0005	Metals-021	<0.0005	[NT]	[NT]	[NT]	[NT]	112	[NT]
Nickel - Total	mg/L	0.02	Metals-020	<0.02	[NT]	[NT]	[NT]	[NT]	104	[NT]
Zinc - Total	mg/L	0.02	Metals-020	<0.02	[NT]	[NT]	[NT]	[NT]	105	[NT]

QUALITY CONTROL: PFAS in Waters Short					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			22/11/2024	[NT]	[NT]	[NT]	[NT]	22/11/2024	[NT]
Date analysed	-			22/11/2024	[NT]	[NT]	[NT]	[NT]	22/11/2024	[NT]
Perfluorobutanesulfonic acid	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	102	[NT]
Perfluorohexanesulfonic acid - PFHxS	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	102	[NT]
Perfluorooctanesulfonic acid PFOS	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	97	[NT]
Perfluorooctanoic acid PFOA	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	102	[NT]
6:2 FTS	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	112	[NT]
8:2 FTS	µg/L	0.02	Org-029	<0.02	[NT]	[NT]	[NT]	[NT]	109	[NT]
Surrogate $^{13}C_8$ *PFOS*	%		Org-029	93	[NT]	[NT]	[NT]	[NT]	94	[NT]
Surrogate $^{13}C_2$ *PFOA*	%		Org-029	100	[NT]	[NT]	[NT]	[NT]	98	[NT]
Extracted ISTD $^{13}C_3$ *PFBS*	%		Org-029	100	[NT]	[NT]	[NT]	[NT]	98	[NT]
Extracted ISTD $^{18}O_2$ *PFHxS*	%		Org-029	97	[NT]	[NT]	[NT]	[NT]	94	[NT]
Extracted ISTD $^{13}C_4$ *PFOS*	%		Org-029	98	[NT]	[NT]	[NT]	[NT]	100	[NT]
Extracted ISTD $^{13}C_4$ *PFOA*	%		Org-029	93	[NT]	[NT]	[NT]	[NT]	95	[NT]
Extracted ISTD $^{13}C_2$ *6:2FTS*	%		Org-029	80	[NT]	[NT]	[NT]	[NT]	88	[NT]
Extracted ISTD $^{13}C_2$ *8:2FTS*	%		Org-029	83	[NT]	[NT]	[NT]	[NT]	92	[NT]

Result Definitions

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

Quality Control Definitions

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

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

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

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

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

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

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

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

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

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

Report Comments

Asbestos-ID in soil: NEPM
This report is consistent with the reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013. This is reported outside our scope of NATA accreditation.

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

DATA QUALITY ASSESSMENT SUMMARY

Report Details

Envirolab Report Reference	**366346**
Client ID	Senversa Pty Ltd
Project Reference	S22013, Mars Road DSI
Date Issued	28/11/2024

QC DATA

All laboratory QC data was within the Envirolab Group's specifications.

HOLDING TIME COMPLIANCE EVALUATION

All preservation / holding times (based on AS/ASPHA/ISO/NEPM/USEPA reference documents and standards) are compliant.

Certain analyses have had their recommended technical holding times elongated by filtering and/or freezing on receipt at the laboratory (e.g. BOD, chlorophyll/Pheophytin, nutrients and acid sulphate soil tests).

COMPLIANCE TO QC FREQUENCY (NEPM)

Internal laboratory QC rate complies with NEPM requirements (LCS/MB/MS 1 in 20, Duplicates 1 in 10 samples). Note, samples are batched together with other sample consignments in order to assign QC sample frequency.

QC Evaluation

Duplicate(s) was performed as per NEPM frequency	✓
Laboratory Control Sample(s) were analysed with the samples received	✓
A Method Blank was performed with the samples received	✓
Matrix spike(s) was performed as per NEPM frequency (Not Applicable for Air samples)	✓

Refer to Certificate of Analysis for all Quality Control data.

CoC Updated: 18/11/24, 1832

S22013, Mars Road DSI

	Sample Name	Lab Report	Comment	Date Time	Combo 1M	PFAS Shot Suite	BTEX	Combo 5AN	Combo 3	Combo 5	VOC	Asbestos ID	Asbestos NEPM	TCLP PFAS short suite	HOLD
19	BH01_0.0-0.2	366472	-	14/11/2024 15:42											X
20	BH01_0.4-0.5	366472	-	14/11/2024 15:42				X							
21	BH03_0.1-0.2	366472	-	14/11/2024 16:14											X
22	BH03_0.2-0.3	366472	-	14/11/2024 16:14											X
23	BH03_0.5-0.7	366472	-	14/11/2024 16:14				X							
4	BH12_0.15-0.2	366472	-	14/11/2024 9:34											X
5	BH12_0.2-0.3	366472	-	14/11/2024 9:34				X							
1	BH15_0.2-0.3	366472	-	14/11/2024 8:47				X							
2	BH15_0.4-0.5	366472	-	14/11/2024 8:47											X
3	BH15_0.9-1.0	366472	-	14/11/2024 8:47				X							
6	BH17_0.3-0.4	366472	-	14/11/2024 10:35											X
7	BH17_0.7-0.8	366472	-	14/11/2024 10:36				X			X				
8	BH17_1.1-1.2	366472	-	14/11/2024 10:36					X						
9	BH17_1.6-1.7	366472	-	14/11/2024 10:36					X		X				
10	BH19_0.22-0.25	366472	-	14/11/2024 11:26				X							
11	BH19_0.4-0.5	366472	-	14/11/2024 11:27											X
12	BH20_0.2-0.35	366472	-	14/11/2024 12:04				X							X
13	BH20_0.35-0.45	366472	-	14/11/2024 12:05					X						
14	BH20_0.45-0.55	366472	-	14/11/2024 12:05											X
15	BH22_0.1-0.2	366472	-	14/11/2024 12:50		X		X							
16	BH22_0.4-0.5	366472	-	14/11/2024 12:51				X							
17	BH23_0.2-0.3	366472	-	14/11/2024 13:20				X							
18	BH23_0.5-0.57	366472	-	14/11/2024 13:38											X
24	QC102	366472	-	14/11/2024 0:00											X
30	QC103	366472	-	14/11/2024 0:00					X						
31	QC104	366472	-	14/11/2024 0:00					X						
25	QC105	366472	-	14/11/2024 0:00											X
26	QC303	366472	-	14/11/2024 0:00	X	X									
27	QC403	366472	-	14/11/2024 0:00			X								
28	QC504	366472	-	14/11/2024 0:00											X
29	QC505	366472	-	14/11/2024 0:00		X									

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 366472
Date Received: 15/11/24
Time Received: 0945
Received By: DLuff
Temp: Cool/Ambient 8 °C
Cooling: Ice/Icepack
Security: Intact/Broken/None

senversa

Chain of Custody Documentation

Senversa Pty Ltd
www.senversa.com.au
ABN 89 132 231 380

Laboratory:
Address:
Contact: Sample Receipt
Phone:

Job Number: 522013	**Purchase Order:**
Project Name: Mays Road DSI	**Quote No:** 245Y51602
Sampled By: CO	**Turn Around Time:**
Project Manager: Zoe Smith	**Page:** 1 of 2
Email Report To: Zoe.Smith@Senversa.com.au Lucas.Brzakowski@Senversa.com.au	**Phone/Mobile:**

Sample Information					Container Information		Analysis Required											Comments: e.g. Highly contaminated sample; hazardous materials present; trace LORs etc.
Lab ID	Sample ID	Matrix *	Date	Time	Type / Code	Total Bottles											HOLD	
1	BH15_0.2-0.3	Soil	14/11/24	AM	JV + Bag	X3											X	
2	BH15 - 0.4-0.5					X3											X	
3	BH15_0.9-1.0					X3											X	
4	BH12_0.15-0.2					X3											X	
5	BH12_0.2-0.3					X3											X	
6	BH17_0.3-0.4					X3											X	
7	BH17_0.7-0.8					X3											X	
8	BH17_1.1-1.2					X2											X	
9	BH17_1.6-1.7					X2											X	
10	BH19_0.22-0.29					X2											X	
11	BH19-0.4-0.5					X2											X	
12	BH20_0.2-0.35					X3											X	
13	BH20_0.35-0.45					X2											X	
14	BH20_0.45-0.55					X2											X	
15	BH22_0.1-0.2					X3											X	
16	BH22_0.4-0.5					X3											X	
Total																	X	

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 366472
Date Received: 15/11/24
Time Received: 09:00
Received By: JV
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Sampler: I attest that proper field sampling procedures in accordance with Senversa standard procedures and/or project specifications were used during the collection of these samples:

Sampler Name: Lucas Brzakowski **Signature:** **Date:** 14/11/24

Relinquished By:		Method of Shipment (if applicable):	Received by:	
Name/Signature: Lucas Brzakowski	Date: 14/11/24	Carrier / Reference #:	Name/Signature: Danielle Lee	Date: 15/11/24
Of:	Time:	Date/Time:	Of: SLR STH	Time: 0945
Name/Signature: Danielle Lee	Date: 15/11/24	Carrier / Reference #:	Name/Signature:	Date:
Of: SLR STH	Time: 0945	Date/Time:	Of:	Time:
Name/Signature:	Date:	Carrier / Reference #:	Name/Signature:	Date:
Of:	Time:	Date/Time:	Of:	Time:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Acid (HNO_3) Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide (NaOH)/Cadmium (Cd) Preserved; S = Sodium Hydroxide Preserved Plastic; STH = Sodium thiosulfate preserved plastic; V = VOA Vial Hydochloric Acid (HCl) Preserved; VS = VOA Vial Sulphuric Preserved; VSA = Sulphuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation Bottle; SP = Sulphuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; UA = Unpreserved Amber Glass; L=Lugol's Iodine preserved white plastic bottle; SW= sulfuric acid preserved wide mouth glass jar

15/11/24

senversa

Chain of Custody Documentation

Senversa Pty Ltd
www.senversa.com.au
ABN 89 132 231 380

Laboratory:
Address:
Contact: Sample Receipt
Phone:

Job Number: 522013	Purchase Order:
Project Name: Mous Road DSI	Quote No: 245Y516v2
Sampled By: LD	Turn Around Time:
Project Manager: Zoe Smith	Page: 2 of 2
Email Report To: zoe.smith@senversa.com.au	Phone/Mobile: 0431 659 835

Sample Information					Container Information		Analysis Required											Comments: e.g. Highly contaminated sample; hazardous materials present; trace LORs etc.
Lab ID	Sample ID	Matrix *	Date	Time	Type / Code	Total Bottles											HOLD	
17	BH23_0.2-0.3	Soil	14/11/24	PM	JAR, Bag	x3											X	
18	BH23_0.5-0.57					x2											X	
19	BH01_0-0.2					x3											X	
20	BH01_0.4-0.5					x3											X	
21	BH03_0.1-0.2					x3											X	
22	BH03_0.2-0.3					x3											X	
23	BH03_0.5-0.7					x2											X	
24	QC102					x2											X	
25	QC105					x2											X	
26	QC303					x2											X	
27	QC403					x2											X	D
28	QC504					x1											X	TB
29	QC505					x1											X	TB PFAS
30	QC103					x1											X	
31	QC104					x1											X	
Total																		

Sampler: I attest that proper field sampling procedures in accordance with Senversa standard procedures and/or project specifications were used during the collection of these samples:	Sampler Name: Lucas Rzaglaborn	Signature:	Date: 14/11/24

Relinquished By:		Method of Shipment (if applicable):	Received by:	
Name/Signature: Lucas Rzaglaborn	Date: 14/11/24	Carrier / Reference #:	Name/Signature:	Date:
Of:	Time:	Date/Time:	Of:	Time:
Name/Signature: [illegible]	Date: 15/11/24	Carrier / Reference #:	Name/Signature:	Date:
Of: [illegible]	Time: 0745	Date/Time:	Of:	Time:
Name/Signature:	Date:	Carrier / Reference #:	Name/Signature:	Date:
Of:	Time:	Date/Time:	Of:	Time:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Acid (HNO_3) Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide (NaOH)/Cadmium (Cd) Preserved; S = Sodium Hydroxide Preserved Plastic; STH = Sodium thiosulfate preserved plastic; V = VOA Vial Hydochloric Acid (HCl) Preserved; VS = VOA Vial Sulphuric Preserved; VSA = Sulphuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation Bottle; SP = Sulphuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; UA = Unpreserved Amber Glass; L=Lugol's Iodine preserved white plastic bottle; SW= sulfuric acid preserved wide mouth glass jar

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customerservice@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	Senversa Pty Ltd
Attention	Zoe Smith

Sample Login Details

Your reference	S22013 MWS Road DSI
Envirolab Reference	366472
Date Sample Received	15/11/2024
Date Instructions Received	15/11/2024
Date Results Expected to be Reported	On Hold

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	31 Soil
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	8
Cooling Method	Ice
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:

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Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides in Soil	PCBs in Soil	Misc Soil - Inorg	Acid Extractable metalsin soil	Misc Inorg - Soil	Asbestos ID - soils	On Hold
BH15-0.2-0.3											✓
BH15-0.4-0.5											✓
BH15-0.9-1.0											✓
BH12-0.15-.2											✓
BH12-0.2-0.3											✓
BH17-0.3-0.4											✓
BH17-0.7-0.8											✓
BH17-1.1-1.2											✓
BH17-1.6-1.7											✓
BH19-0.22-0.25											✓
BH19-0.4-0.5											✓
BH20-0.2-0.35											✓
BH20-0.35-0.45											✓
BH20-0.45-0.55											✓
BH22-0.1-0.2											✓
BH22-0.4-0.5											✓
BH23-0.2-0.3											✓
BH23-0.5-0.57											✓
BH01-0-0.2											✓
BH01-0.4-0.5											✓
BH03-0.1-0.2											✓
BH03-0.2-0.3											✓
BH03-0.5-0.7											✓
QC102											✓
QC105											✓
QC303											✓
QC403											✓
QC504											✓
QC505											✓
QC103											✓
QC104											✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

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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.

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CERTIFICATE OF ANALYSIS 366472

Client Details

Client	Senversa Pty Ltd
Attention	Zoe Smith
Address	6/15 William St, Melbourne, VIC, 3000

Sample Details

Your Reference	**S22013, Mars Road DSI**
Number of Samples	31 Soil
Date samples received	15/11/2024
Date completed instructions received	18/11/2024

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.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	25/11/2024
Date of Issue	25/11/2024

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

Asbestos Approved By
Analysed by Asbestos Approved Analyst: Stuart Chen
Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By
Dragana Tomas, Senior Chemist
Giovanni Agosti, Group Technical Manager
Lucy Zhu, Asbestos Supervisor
Sean McAlary, Senior Chemist
Tabitha Roberts, Senior Chemist
Timothy Toll, Senior Chemist

Authorised By
Nancy Zhang, Laboratory Manager

VOCs in soil			
Our Reference		366472-7	366472-9
Your Reference	UNITS	BH17	BH17
Depth		0.7-0.8	1.6-1.7
Date Sampled		14/11/2024	14/11/2024
Type of sample		Soil	Soil
Date Extracted	-	20/11/2024	20/11/2024
Date Analysed	-	21/11/2024	21/11/2024
Dichlorodifluoromethane	mg/kg	<1	<1
Chloromethane	mg/kg	<1	<1
Vinyl Chloride	mg/kg	<1	<1
Bromomethane	mg/kg	<1	<1
Chloroethane	mg/kg	<1	<1
Trichlorofluoromethane	mg/kg	<1	<1
1,1-Dichloroethene	mg/kg	<1	<1
trans-1,2-Dichloroethene	mg/kg	<1	<1
1,1-Dichloroethane	mg/kg	<1	<1
cis-1,2-Dichloroethene	mg/kg	<1	<1
Bromochloromethane	mg/kg	<1	<1
Chloroform	mg/kg	<1	<1
2,2-Dichloropropane	mg/kg	<1	<1
1,2-Dichloroethane	mg/kg	<1	<1
1,1,1-Trichloroethane	mg/kg	<1	<1
1,1-Dichloropropene	mg/kg	<1	<1
Cyclohexane	mg/kg	<1	<1
Carbon Tetrachloride	mg/kg	<1	<1
Benzene	mg/kg	<0.2	<0.2
Dibromomethane	mg/kg	<1	<1
1,2-Dichloropropane	mg/kg	<1	<1
Trichloroethene	mg/kg	<1	<1
Bromodichloromethane	mg/kg	<1	<1
trans-1,3-Dichloropropene	mg/kg	<1	<1
cis-1,3-Dichloropropene	mg/kg	<1	<1
1,1,2-Trichloroethane	mg/kg	<1	<1
Toluene	mg/kg	<0.5	<0.5
1,3-Dichloropropane	mg/kg	<1	<1
Dibromochloromethane	mg/kg	<1	<1
1,2-Dibromoethane	mg/kg	<1	<1
Tetrachloroethene	mg/kg	<1	<1
1,1,1,2-Tetrachloroethane	mg/kg	<1	<1
Chlorobenzene	mg/kg	<1	<1

VOCs in soil			
Our Reference		366472-7	366472-9
Your Reference	UNITS	BH17	BH17
Depth		0.7-0.8	1.6-1.7
Date Sampled		14/11/2024	14/11/2024
Type of sample		Soil	Soil
Ethylbenzene	mg/kg	<1	<1
Bromoform	mg/kg	<1	<1
m+p-Xylene	mg/kg	<2	<2
Styrene	mg/kg	<1	<1
1,1,2,2-Tetrachloroethane	mg/kg	<1	<1
o-Xylene	mg/kg	<1	<1
1,2,3-Trichloropropane	mg/kg	<1	<1
Isopropylbenzene	mg/kg	<1	<1
Bromobenzene	mg/kg	<1	<1
n-Propylbenzene	mg/kg	<1	<1
2-Chlorotoluene	mg/kg	<1	<1
4-Chlorotoluene	mg/kg	<1	<1
1,3,5-Trimethylbenzene	mg/kg	<1	<1
tert-Butylbenzene	mg/kg	<1	<1
1,2,4-Trimethylbenzene	mg/kg	<1	<1
1,3-Dichlorobenzene	mg/kg	<1	<1
sec-Butylbenzene	mg/kg	<1	<1
1,4-Dichlorobenzene	mg/kg	<1	<1
4-Isopropyltoluene	mg/kg	<1	<1
1,2-Dichlorobenzene	mg/kg	<1	<1
n-Butylbenzene	mg/kg	<1	<1
1,2-Dibromo-3-chloropropane	mg/kg	<1	<1
1,2,4-Trichlorobenzene	mg/kg	<1	<1
Hexachlorobutadiene	mg/kg	<1	<1
1,2,3-Trichlorobenzene	mg/kg	<1	<1
Surrogate Dibromofluoromethane	%	102	101
Surrogate aaa-Trifluorotoluene	%	102	99
Surrogate Toluene-d_8	%	101	101
Surrogate 4-Bromofluorobenzene	%	94	94

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		366472-1	366472-3	366472-5	366472-7	366472-8
Your Reference	UNITS	BH15	BH15	BH12	BH17	BH17
Depth		0.2-0.3	0.9-1.0	0.2-0.3	0.7-0.8	1.1-1.2
Date Sampled		14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024	21/11/2024	21/11/2024
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	100	102	102	102	95

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		366472-9	366472-10	366472-12	366472-13	366472-15
Your Reference	UNITS	BH17	BH19	BH20	BH20	BH22
Depth		1.6-1.7	0.22-0.25	0.2-0.35	0.35-0.45	0.1-0.2
Date Sampled		14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024	21/11/2024	21/11/2024
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	99	107	105	102	103

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		366472-16	366472-17	366472-20	366472-23	366472-27
Your Reference	UNITS	BH22	BH23	BH01	BH03	QC403
Depth		0.4-0.5	0.2-0.3	0.4-0.5	0.5-0.7	-
Date Sampled		14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024	21/11/2024	21/11/2024
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	[NA]
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	[NA]
vTRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	[NA]
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	97%
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	98%
Ethylbenzene	mg/kg	<1	<1	<1	<1	98%
m+p-xylene	mg/kg	<2	<2	<2	<2	98%
o-Xylene	mg/kg	<1	<1	<1	<1	97%
Naphthalene	mg/kg	<1	<1	<1	<1	[NA]
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	[NA]
Surrogate aaa-Trifluorotoluene	%	102	104	105	102	98

vTRH(C6-C10)/BTEXN in Soil			
Our Reference		366472-30	366472-31
Your Reference	UNITS	QC103	QC104
Depth		-	-
Date Sampled		14/11/2024	14/11/2024
Type of sample		Soil	Soil
Date extracted	-	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024
TRH C_6 - C_9	mg/kg	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25
vTRH 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	<1	<1
Surrogate aaa-Trifluorotoluene	%	100	99

svTRH (C10-C40) in Soil						
Our Reference		366472-1	366472-3	366472-5	366472-7	366472-8
Your Reference	UNITS	BH15	BH15	BH12	BH17	BH17
Depth		0.2-0.3	0.9-1.0	0.2-0.3	0.7-0.8	1.1-1.2
Date Sampled		14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024	21/11/2024	21/11/2024
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	120
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	110	300
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	110	420
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	340
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	160
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	500
Surrogate o-Terphenyl	%	88	86	87	85	87

svTRH (C10-C40) in Soil						
Our Reference		366472-9	366472-10	366472-12	366472-13	366472-15
Your Reference	UNITS	BH17	BH19	BH20	BH20	BH22
Depth		1.6-1.7	0.22-0.25	0.2-0.35	0.35-0.45	0.1-0.2
Date Sampled		14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024	21/11/2024	21/11/2024
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	110
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	120
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	230
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	190
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	130
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	320
Surrogate o-Terphenyl	%	87	84	86	88	88

svTRH (C10-C40) in Soil						
Our Reference		366472-16	366472-17	366472-20	366472-23	366472-30
Your Reference	UNITS	BH22	BH23	BH01	BH03	QC103
Depth		0.4-0.5	0.2-0.3	0.4-0.5	0.5-0.7	-
Date Sampled		14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024	21/11/2024	21/11/2024
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	150
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	150
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	100	<100	<100	<100	160
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	150
Total +ve TRH (>C10-C40)	mg/kg	100	<50	<50	<50	310
Surrogate o-Terphenyl	%	87	85	86	84	86

svTRH (C10-C40) in Soil		
Our Reference		366472-31
Your Reference	UNITS	QC104
Depth		-
Date Sampled		14/11/2024
Type of sample		Soil
Date extracted	-	20/11/2024
Date analysed	-	21/11/2024
TRH C_{10} - C_{14}	mg/kg	<50
TRH C_{15} - C_{28}	mg/kg	<100
TRH C_{29} - C_{36}	mg/kg	<100
Total +ve TRH (C10-C36)	mg/kg	<50
TRH >C_{10} -C_{16}	mg/kg	<50
TRH >C_{10} -C_{16} less Naphthalene (F2)	mg/kg	<50
TRH >C_{16} -C_{34}	mg/kg	100
TRH >C_{34} -C_{40}	mg/kg	<100
Total +ve TRH (>C10-C40)	mg/kg	100
Surrogate o-Terphenyl	%	86

PAHs in Soil						
Our Reference		366472-1	366472-3	366472-5	366472-7	366472-8
Your Reference	UNITS	BH15	BH15	BH12	BH17	BH17
Depth		0.2-0.3	0.9-1.0	0.2-0.3	0.7-0.8	1.1-1.2
Date Sampled		14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	25/11/2024	25/11/2024	25/11/2024	25/11/2024	25/11/2024
Naphthalene	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	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	0.1	<0.1	<0.1	0.2
Pyrene	mg/kg	0.2	0.1	<0.1	<0.1	0.2
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	0.1	0.06	<0.05	<0.05	0.08
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	0.4	0.3	<0.05	<0.05	0.4
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	103	104	115	99	108

PAHs in Soil						
Our Reference		366472-9	366472-10	366472-12	366472-13	366472-15
Your Reference	UNITS	BH17	BH19	BH20	BH20	BH22
Depth		1.6-1.7	0.22-0.25	0.2-0.35	0.35-0.45	0.1-0.2
Date Sampled		14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	25/11/2024	25/11/2024	25/11/2024	25/11/2024	25/11/2024
Naphthalene	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	<0.1	<0.1	0.3
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.5
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.4
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.2
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	0.3
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	0.2
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	2.0
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	107	104	108	105	100

PAHs in Soil						
Our Reference		366472-16	366472-17	366472-20	366472-23	366472-30
Your Reference	UNITS	BH22	BH23	BH01	BH03	QC103
Depth		0.4-0.5	0.2-0.3	0.4-0.5	0.5-0.7	-
Date Sampled		14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	25/11/2024	25/11/2024	25/11/2024	25/11/2024	25/11/2024
Naphthalene	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	0.3	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.5	<0.1	0.1	<0.1	<0.1
Pyrene	mg/kg	0.4	<0.1	0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	0.3	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	0.2	<0.05	0.06	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	2.2	<0.05	0.3	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	97	99	105	104	96

PAHs in Soil		
Our Reference		366472-31
Your Reference	UNITS	QC104
Depth		-
Date Sampled		14/11/2024
Type of sample		Soil
Date extracted	-	20/11/2024
Date analysed	-	25/11/2024
Naphthalene	mg/kg	<0.1
Acenaphthylene	mg/kg	<0.1
Acenaphthene	mg/kg	<0.1
Fluorene	mg/kg	<0.1
Phenanthrene	mg/kg	<0.1
Anthracene	mg/kg	<0.1
Fluoranthene	mg/kg	0.2
Pyrene	mg/kg	0.2
Benzo(a)anthracene	mg/kg	<0.1
Chrysene	mg/kg	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2
Benzo(a)pyrene	mg/kg	0.08
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1
Total +ve PAH's	mg/kg	0.4
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5
Surrogate p-Terphenyl-d14	%	106

Organochlorine Pesticides in soil						
Our Reference		366472-1	366472-3	366472-5	366472-7	366472-10
Your Reference	UNITS	BH15	BH15	BH12	BH17	BH19
Depth		0.2-0.3	0.9-1.0	0.2-0.3	0.7-0.8	0.22-0.25
Date Sampled		14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	25/11/2024	25/11/2024	25/11/2024	25/11/2024	25/11/2024
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total Positive Aldrin+Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	106	104	108	97	107

Organochlorine Pesticides in soil						
Our Reference		366472-12	366472-15	366472-16	366472-17	366472-20
Your Reference	UNITS	BH20	BH22	BH22	BH23	BH01
Depth		0.2-0.35	0.1-0.2	0.4-0.5	0.2-0.3	0.4-0.5
Date Sampled		14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	25/11/2024	25/11/2024	25/11/2024	25/11/2024	25/11/2024
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total Positive Aldrin+Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	102	108	108	109	118

Organochlorine Pesticides in soil		
Our Reference		366472-23
Your Reference	UNITS	BH03
Depth		0.5-0.7
Date Sampled		14/11/2024
Type of sample		Soil
Date extracted	-	20/11/2024
Date analysed	-	25/11/2024
alpha-BHC	mg/kg	<0.1
HCB	mg/kg	<0.1
beta-BHC	mg/kg	<0.1
gamma-BHC	mg/kg	<0.1
Heptachlor	mg/kg	<0.1
delta-BHC	mg/kg	<0.1
Aldrin	mg/kg	<0.1
Heptachlor Epoxide	mg/kg	<0.1
gamma-Chlordane	mg/kg	<0.1
alpha-chlordane	mg/kg	<0.1
Endosulfan I	mg/kg	<0.1
pp-DDE	mg/kg	<0.1
Dieldrin	mg/kg	<0.1
Endrin	mg/kg	<0.1
Endosulfan II	mg/kg	<0.1
pp-DDD	mg/kg	<0.1
Endrin Aldehyde	mg/kg	<0.1
pp-DDT	mg/kg	<0.1
Endosulfan Sulphate	mg/kg	<0.1
Methoxychlor	mg/kg	<0.1
Mirex	mg/kg	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1
Total Positive Aldrin+Dieldrin	mg/kg	<0.1
Surrogate 4-Chloro-3-NBTF	%	104

PCBs in Soil						
Our Reference		366472-1	366472-3	366472-5	366472-7	366472-10
Your Reference	UNITS	BH15	BH15	BH12	BH17	BH19
Depth		0.2-0.3	0.9-1.0	0.2-0.3	0.7-0.8	0.22-0.25
Date Sampled		14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	25/11/2024	25/11/2024	25/11/2024	25/11/2024	25/11/2024
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 2-Fluorobiphenyl	%	118	96	96	89	85

PCBs in Soil						
Our Reference		366472-12	366472-15	366472-16	366472-17	366472-20
Your Reference	UNITS	BH20	BH22	BH22	BH23	BH01
Depth		0.2-0.35	0.1-0.2	0.4-0.5	0.2-0.3	0.4-0.5
Date Sampled		14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	25/11/2024	25/11/2024	25/11/2024	25/11/2024	25/11/2024
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 2-Fluorobiphenyl	%	87	102	97	101	96

PCBs in Soil		
Our Reference		366472-23
Your Reference	UNITS	BH03
Depth		0.5-0.7
Date Sampled		14/11/2024
Type of sample		Soil
Date extracted	-	20/11/2024
Date analysed	-	25/11/2024
Aroclor 1016	mg/kg	<0.1
Aroclor 1221	mg/kg	<0.1
Aroclor 1232	mg/kg	<0.1
Aroclor 1242	mg/kg	<0.1
Aroclor 1248	mg/kg	<0.1
Aroclor 1254	mg/kg	<0.1
Aroclor 1260	mg/kg	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1
Surrogate 2-Fluorobiphenyl	%	91

Acid Extractable metals in soil						
Our Reference		366472-1	366472-3	366472-5	366472-7	366472-8
Your Reference	UNITS	BH15	BH15	BH12	BH17	BH17
Depth		0.2-0.3	0.9-1.0	0.2-0.3	0.7-0.8	1.1-1.2
Date Sampled		14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024
Arsenic	mg/kg	12	4	<4	6	6
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	18	22	7	14	41
Copper	mg/kg	13	25	3	4	36
Lead	mg/kg	39	35	4	14	250
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	9	21	6	5	10
Zinc	mg/kg	32	48	4	18	140

Acid Extractable metals in soil						
Our Reference		366472-9	366472-10	366472-12	366472-13	366472-15
Your Reference	UNITS	BH17	BH19	BH20	BH20	BH22
Depth		1.6-1.7	0.22-0.25	0.2-0.35	0.35-0.45	0.1-0.2
Date Sampled		14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024
Arsenic	mg/kg	<4	<4	4	<4	7
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	22	3	22	5	10
Copper	mg/kg	3	<1	4	<1	25
Lead	mg/kg	10	5	9	3	630
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	1	<1	9	1	6
Zinc	mg/kg	4	<1	11	<1	57

Acid Extractable metals in soil						
Our Reference		366472-16	366472-17	366472-20	366472-23	366472-30
Your Reference	UNITS	BH22	BH23	BH01	BH03	QC103
Depth		0.4-0.5	0.2-0.3	0.4-0.5	0.5-0.7	-
Date Sampled		14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024
Arsenic	mg/kg	6	<4	6	11	5
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	13	3	24	12	23
Copper	mg/kg	15	1	13	19	4
Lead	mg/kg	57	57	43	13	12
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	4	10	13	2	4
Zinc	mg/kg	32	7	43	5	14

Acid Extractable metals in soil			
Our Reference		366472-31	366472-32
Your Reference	UNITS	QC104	BH03 - [TRIPLICATE]
Depth		-	0.5-0.7
Date Sampled		14/11/2024	14/11/2024
Type of sample		Soil	Soil
Date prepared	-	20/11/2024	20/11/2024
Date analysed	-	22/11/2024	22/11/2024
Arsenic	mg/kg	5	10
Cadmium	mg/kg	<0.4	<0.4
Chromium	mg/kg	15	14
Copper	mg/kg	10	<1
Lead	mg/kg	22	15
Mercury	mg/kg	<0.1	<0.1
Nickel	mg/kg	9	2
Zinc	mg/kg	32	2

Moisture						
Our Reference		366472-1	366472-3	366472-5	366472-7	366472-8
Your Reference	UNITS	BH15	BH15	BH12	BH17	BH17
Depth		0.2-0.3	0.9-1.0	0.2-0.3	0.7-0.8	1.1-1.2
Date Sampled		14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024	21/11/2024	21/11/2024
Moisture	%	13	11	13	12	26

Moisture						
Our Reference		366472-9	366472-10	366472-12	366472-13	366472-15
Your Reference	UNITS	BH17	BH19	BH20	BH20	BH22
Depth		1.6-1.7	0.22-0.25	0.2-0.35	0.35-0.45	0.1-0.2
Date Sampled		14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024	21/11/2024	21/11/2024
Moisture	%	17	13	8.9	11	15

Moisture						
Our Reference		366472-16	366472-17	366472-20	366472-23	366472-29
Your Reference	UNITS	BH22	BH23	BH01	BH03	QC505
Depth		0.4-0.5	0.2-0.3	0.4-0.5	0.5-0.7	-
Date Sampled		14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024	21/11/2024	21/11/2024
Moisture	%	14	10	8.8	12	1.0

Moisture			
Our Reference		366472-30	366472-31
Your Reference	UNITS	QC103	QC104
Depth		-	-
Date Sampled		14/11/2024	14/11/2024
Type of sample		Soil	Soil
Date prepared	-	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024
Moisture	%	13	8.6

Asbestos ID - soils NEPM - ASB-001						
Our Reference		366472-1	366472-3	366472-5	366472-7	366472-12
Your Reference	UNITS	BH15	BH15	BH12	BH17	BH20
Depth		0.2-0.3	0.9-1.0	0.2-0.3	0.7-0.8	0.2-0.35
Date Sampled		14/11/2024	14/11/2024	14/11/2024	14/11/2024	14/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024
Sample mass tested	g	573.21	616.07	417.43	616.19	639.55
Sample Description	-	Brown clayey soil & rocks	Brown clayey soil & rocks	Beige fine-grained soil & rocks	Brown clayey soil & rocks	Brown clayey soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos[#1]	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	Chrysotile	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	0.0018	–	–	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001
Asbestos comments	-	YES	Nil	Nil	Nil	Nil

Asbestos ID - soils NEPM - ASB-001					
Our Reference		366472-15	366472-16	366472-17	366472-20
Your Reference	UNITS	BH22	BH22	BH23	BH01
Depth		0.1-0.2	0.4-0.5	0.2-0.3	0.4-0.5
Date Sampled		14/11/2024	14/11/2024	14/11/2024	14/11/2024
Type of sample		Soil	Soil	Soil	Soil
Date analysed	-	22/11/2024	22/11/2024	22/11/2024	22/11/2024
Sample mass tested	g	443.56	533.02	542.06	727.95
Sample Description	-	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Pink fine-grained soil & rocks	Brown clayey soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos#1	g/kg	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–
FA and AF Estimation*	g	–	–	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001
Asbestos comments	-	Nil	Nil	Nil	Nil

PFAS in Soils Short			
Our Reference		366472-15	366472-29
Your Reference	UNITS	BH22	QC505
Depth		0.1-0.2	-
Date Sampled		14/11/2024	14/11/2024
Type of sample		Soil	Soil
Date prepared	-	20/11/2024	20/11/2024
Date analysed	-	20/11/2024	20/11/2024
Perfluorobutanesulfonic acid	µg/kg	<0.1	<0.1
Perfluorohexanesulfonic acid - PFHxS	µg/kg	<0.1	<0.1
Perfluorooctanesulfonic acid PFOS	µg/kg	0.5	<0.1
Perfluorooctanoic acid PFOA	µg/kg	<0.1	<0.1
6:2 FTS	µg/kg	<0.1	<0.1
8:2 FTS	µg/kg	<0.2	<0.2
Surrogate $^{13}C_8$ *PFOS*	%	99	100
Surrogate $^{13}C_2$ *PFOA*	%	104	99
Extracted ISTD $^{13}C_3$ *PFBS*	%	95	106
Extracted ISTD $^{18}O_2$ *PFHxS*	%	97	105
Extracted ISTD $^{13}C_4$ *PFOS*	%	96	109
Extracted ISTD $^{13}C_4$ *PFOA*	%	94	108
Extracted ISTD $^{13}C_2$ *6:2FTS*	%	118	109
Extracted ISTD $^{13}C_2$ *8:2FTS*	%	114	116
Total Positive PFHxS & PFOS	µg/kg	0.5	<0.1
Total Positive PFOS & PFOA	µg/kg	0.5	<0.1
Total Positive PFAS	µg/kg	0.5	<0.1

vTRH(C6-C10)/BTEXN in Water		
Our Reference		366472-26
Your Reference	UNITS	QC303
Depth		-
Date Sampled		14/11/2024
Type of sample		Soil
Date extracted	-	21/11/2024
Date analysed	-	22/11/2024
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	%	101
Surrogate Toluene-d8	%	99
Surrogate 4-Bromofluorobenzene	%	98

svTRH (C10-C40) in Water		
Our Reference		366472-26
Your Reference	UNITS	QC303
Depth		-
Date Sampled		14/11/2024
Type of sample		Soil
Date extracted	-	20/11/2024
Date analysed	-	21/11/2024
TRH C_{10} - C_{14}	µg/L	<50
TRH C_{15} - C_{28}	µg/L	<100
TRH C_{29} - C_{36}	µg/L	<100
Total +ve TRH (C10-C36)	µg/L	<50
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
Total +ve TRH (>C10-C40)	µg/L	<50
Surrogate o-Terphenyl	%	82

Metals in Waters - Acid extractable		
Our Reference		366472-26
Your Reference	UNITS	QC303
Depth		-
Date Sampled		14/11/2024
Type of sample		Soil
Date prepared	-	20/11/2024
Date analysed	-	20/11/2024
Arsenic - Total	mg/L	<0.05
Cadmium - Total	mg/L	<0.01
Chromium - Total	mg/L	<0.01
Copper - Total	mg/L	<0.01
Lead - Total	mg/L	<0.03
Mercury - Total	mg/L	<0.0005
Nickel - Total	mg/L	<0.02
Zinc - Total	mg/L	<0.02

PFAS in Waters Short		
Our Reference		366472-26
Your Reference	UNITS	QC303
Depth		-
Date Sampled		14/11/2024
Type of sample		Soil
Date prepared	-	22/11/2024
Date analysed	-	22/11/2024
Perfluorobutanesulfonic acid	µg/L	<0.01
Perfluorohexanesulfonic acid - PFHxS	µg/L	<0.01
Perfluorooctanesulfonic acid PFOS	µg/L	<0.01
Perfluorooctanoic acid PFOA	µg/L	<0.01
6:2 FTS	µg/L	<0.01
8:2 FTS	µg/L	<0.02
Surrogate $^{13}C_8$ *PFOS*	%	97
Surrogate $^{13}C_2$ *PFOA*	%	101
Extracted ISTD $^{13}C_3$ *PFBS*	%	95
Extracted ISTD $^{18}O_2$ *PFHxS*	%	93
Extracted ISTD $^{13}C_4$ *PFOS*	%	91
Extracted ISTD $^{13}C_4$ *PFOA*	%	89
Extracted ISTD $^{13}C_2$ *6:2FTS*	%	78
Extracted ISTD $^{13}C_2$ *8:2FTS*	%	77
Total Positive PFHxS & PFOS	µg/L	<0.01
Total Positive PFOA & PFOS	µg/L	<0.01
Total Positive PFAS	µg/L	<0.01

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
ASB-001	Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit of 0.1g/kg (0.01% w/w) as per Australian Standard AS4964-2004. Results reported denoted with * are outside our scope of NATA accreditation. NOTE#1 Total Asbestos g/kg was analysed and reported as per Australian Standard AS4964 (This is the sum of ACM >7mm, <7mm and FA/AF relative to the sample mass tested) NOTE#2 The screening level of 0.001% w/w asbestos in soil for FA and AF only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres. Estimation = Estimated asbestos weight Results reported with "--" is equivalent to no visible asbestos identified using Polarised Light microscopy and Dispersion Staining Techniques.
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.

Method ID	Methodology Summary
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-021/022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD and/or GC-MS/GC-MSMS. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.
Org-022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS/GC-MSMS. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
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	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.
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.
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.

Method ID	Methodology Summary
Org-029	Soil samples are extracted with basified Methanol. Waters and soil extracts are directly injected and/or concentrated/extracted using SPE. TCLPs/ASLP leachates are centrifuged, the supernatant is then analysed (including amendment with solvent) - as per the option in AS4439.3. Analysis is undertaken with LC-MS/MS. PFAS results include the sum of branched and linear isomers where applicable. Please note that PFAS results are corrected for Extracted Internal Standards (QSM 5.4 Table B-15 terminology), which are mass labelled analytes added prior to sample preparation to assess matrix effects and verify processing of the sample. PFAS analytes without a commercially available mass labelled analogue are corrected vs a closely eluting mass labelled PFAS compound. Surrogates are also reported, in this context they are mass labelled PFAS compounds added prior to extraction but are used as monitoring compounds only (not used for result correction). Envicarb (or similar) is used discretionally to remove interfering matrix components. Please contact the laboratory if estimates of Measurement Uncertainty are required as per WA DER.

QUALITY CONTROL: VOCs in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	366472-9
Date Extracted	-			20/11/2024	7	20/11/2024	20/11/2024		20/11/2024	20/11/2024
Date Analysed	-			21/11/2024	7	21/11/2024	21/11/2024		21/11/2024	21/11/2024
Dichlorodifluoromethane	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]
Chloromethane	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]
Vinyl Chloride	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]
Bromomethane	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]
Chloroethane	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]
Trichlorofluoromethane	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]
1,1-Dichloroethene	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]
trans-1,2-Dichloroethene	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]
1,1-Dichloroethane	mg/kg	1	Org-023	<1	7	<1	<1	0	117	113
cis-1,2-Dichloroethene	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]
Bromochloromethane	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]
Chloroform	mg/kg	1	Org-023	<1	7	<1	<1	0	122	116
2,2-Dichloropropane	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]
1,2-Dichloroethane	mg/kg	1	Org-023	<1	7	<1	<1	0	114	111
1,1,1-Trichloroethane	mg/kg	1	Org-023	<1	7	<1	<1	0	114	111
1,1-Dichloropropene	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]
Cyclohexane	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]
Carbon Tetrachloride	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-023	<0.2	7	<0.2	<0.2	0	115	112
Dibromomethane	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]
1,2-Dichloropropane	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]
Trichloroethene	mg/kg	1	Org-023	<1	7	<1	<1	0	111	107
Bromodichloromethane	mg/kg	1	Org-023	<1	7	<1	<1	0	112	111
trans-1,3-Dichloropropene	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]
cis-1,3-Dichloropropene	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]
1,1,2-Trichloroethane	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-023	<0.5	7	<0.5	<0.5	0	117	114
1,3-Dichloropropane	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]
Dibromochloromethane	mg/kg	1	Org-023	<1	7	<1	<1	0	104	103
1,2-Dibromoethane	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]
Tetrachloroethene	mg/kg	1	Org-023	<1	7	<1	<1	0	108	106
1,1,1,2-Tetrachloroethane	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]
Chlorobenzene	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-023	<1	7	<1	<1	0	118	114
Bromoform	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]
m+p-Xylene	mg/kg	2	Org-023	<2	7	<2	<2	0	119	116
Styrene	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]
1,1,2,2-Tetrachloroethane	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]

QUALITY CONTROL: VOCs in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	366472-9
o-Xylene	mg/kg	1	Org-023	<1	7	<1	<1	0	120	116
1,2,3-Trichloropropane	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]
Isopropylbenzene	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]
Bromobenzene	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]
n-Propylbenzene	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]
2-Chlorotoluene	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]
4-Chlorotoluene	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]
1,3,5-Trimethylbenzene	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]
tert-Butylbenzene	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]
1,2,4-Trimethylbenzene	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]
1,3-Dichlorobenzene	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]
sec-Butylbenzene	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]
1,4-Dichlorobenzene	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]
4-Isopropyltoluene	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]
1,2-Dichlorobenzene	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]
n-Butylbenzene	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]
1,2-Dibromo-3-chloropropane	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]
1,2,4-Trichlorobenzene	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]
Hexachlorobutadiene	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]
1,2,3-Trichlorobenzene	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	100	7	102	101	1	95	96
Surrogate aaa-Trifluorotoluene	%		Org-023	107	7	102	104	2	104	101
Surrogate Toluene-d_8	%		Org-023	101	7	101	101	0	98	97
Surrogate 4-Bromofluorobenzene	%		Org-023	94	7	94	94	0	98	99

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	366472-9
Date extracted	-			20/11/2024	7	20/11/2024	20/11/2024		20/11/2024	20/11/2024
Date analysed	-			21/11/2024	7	21/11/2024	21/11/2024		21/11/2024	21/11/2024
TRH C_6 - C_9	mg/kg	25	Org-023	<25	7	<25	<25	0	118	114
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	7	<25	<25	0	118	114
Benzene	mg/kg	0.2	Org-023	<0.2	7	<0.2	<0.2	0	115	112
Toluene	mg/kg	0.5	Org-023	<0.5	7	<0.5	<0.5	0	117	114
Ethylbenzene	mg/kg	1	Org-023	<1	7	<1	<1	0	118	114
m+p-xylene	mg/kg	2	Org-023	<2	7	<2	<2	0	119	116
o-Xylene	mg/kg	1	Org-023	<1	7	<1	<1	0	120	116
Naphthalene	mg/kg	1	Org-023	<1	7	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	107	7	102	104	2	104	101

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	366472-15
Date extracted	-			[NT]	23	20/11/2024	20/11/2024		[NT]	20/11/2024
Date analysed	-			[NT]	23	21/11/2024	21/11/2024		[NT]	21/11/2024
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	23	<25	<25	0	[NT]	109
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	23	<25	<25	0	[NT]	109
Benzene	mg/kg	0.2	Org-023	[NT]	23	<0.2	<0.2	0	[NT]	107
Toluene	mg/kg	0.5	Org-023	[NT]	23	<0.5	<0.5	0	[NT]	109
Ethylbenzene	mg/kg	1	Org-023	[NT]	23	<1	<1	0	[NT]	109
m+p-xylene	mg/kg	2	Org-023	[NT]	23	<2	<2	0	[NT]	111
o-Xylene	mg/kg	1	Org-023	[NT]	23	<1	<1	0	[NT]	111
Naphthalene	mg/kg	1	Org-023	[NT]	23	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	23	102	103	1	[NT]	97

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	366472-15
Date extracted	-			20/11/2024	7	20/11/2024	20/11/2024		20/11/2024	20/11/2024
Date analysed	-			21/11/2024	7	21/11/2024	21/11/2024		21/11/2024	21/11/2024
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	7	<50	<50	0	90	113
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	7	<100	<100	0	91	138
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	7	110	100	10	86	#
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	7	<50	<50	0	90	113
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	7	<100	<100	0	91	138
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	7	<100	<100	0	86	#
Surrogate o-Terphenyl	%		Org-020	88	7	85	85	0	88	88

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	23	20/11/2024	20/11/2024		[NT]	[NT]
Date analysed	-			[NT]	23	21/11/2024	21/11/2024		[NT]	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	23	<50	<50	0	[NT]	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	23	<100	<100	0	[NT]	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	23	<100	<100	0	[NT]	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	23	<50	<50	0	[NT]	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	23	<100	<100	0	[NT]	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	23	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-020	[NT]	23	84	85	1	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	366472-15
Date extracted	-			20/11/2024	7	20/11/2024	20/11/2024		20/11/2024	20/11/2024
Date analysed	-			25/11/2024	7	25/11/2024	25/11/2024		25/11/2024	25/11/2024
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	78	72
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	86	76
Fluorene	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	80	76
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	80	68
Anthracene	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	78	62
Pyrene	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	80	68
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	80	71
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	7	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	7	<0.05	<0.05	0	72	73
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	106	7	99	102	3	108	104

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	23	20/11/2024	20/11/2024		[NT]	[NT]
Date analysed	-			[NT]	23	25/11/2024	25/11/2024		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	23	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	23	<0.05	<0.05	0	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	23	104	107	3	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	366472-15
Date extracted	-			20/11/2024	7	20/11/2024	20/11/2024		20/11/2024	20/11/2024
Date analysed	-			25/11/2024	7	25/11/2024	25/11/2024		25/11/2024	25/11/2024
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	86	82
HCB	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	84	78
gamma-BHC	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	82	72
delta-BHC	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	70	66
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	90	92
gamma-Chlordane	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	80	78
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	92	94
Endrin	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	80	90
Endosulfan II	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	84	86
Endrin Aldehyde	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	78	78
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	[NT]	[NT]
Mirex	mg/kg	0.1	Org-022/025	<0.1	7	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	110	7	97	109	12	113	113

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	23	20/11/2024	20/11/2024		[NT]	[NT]
Date analysed	-			[NT]	23	25/11/2024	25/11/2024		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Mirex	mg/kg	0.1	Org-022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	[NT]	23	104	112	7	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	366472-15
Date extracted	-			20/11/2024	7	20/11/2024	20/11/2024		20/11/2024	20/11/2024
Date analysed	-			25/11/2024	7	25/11/2024	25/11/2024		25/11/2024	25/11/2024
Aroclor 1016	mg/kg	0.1	Org-021/022/025	<0.1	7	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021/022/025	<0.1	7	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021/022/025	<0.1	7	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021/022/025	<0.1	7	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021/022/025	<0.1	7	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021/022/025	<0.1	7	<0.1	<0.1	0	84	80
Aroclor 1260	mg/kg	0.1	Org-021/022/025	<0.1	7	<0.1	<0.1	0	[NT]	[NT]
Surrogate 2-Fluorobiphenyl	%		Org-021/022/025	115	7	89	107	18	118	101

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	23	20/11/2024	20/11/2024		[NT]	[NT]
Date analysed	-			[NT]	23	25/11/2024	25/11/2024		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-021/022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021/022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021/022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021/022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021/022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021/022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-021/022/025	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Surrogate 2-Fluorobiphenyl	%		Org-021/022/025	[NT]	23	91	102	11	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	366472-15
Date prepared	-			20/11/2024	7	20/11/2024	20/11/2024		20/11/2024	20/11/2024
Date analysed	-			22/11/2024	7	22/11/2024	22/11/2024		22/11/2024	22/11/2024
Arsenic	mg/kg	4	Metals-020	<4	7	6	4	40	120	108
Cadmium	mg/kg	0.4	Metals-020	<0.4	7	<0.4	<0.4	0	103	86
Chromium	mg/kg	1	Metals-020	<1	7	14	15	7	109	99
Copper	mg/kg	1	Metals-020	<1	7	4	5	22	103	112
Lead	mg/kg	1	Metals-020	<1	7	14	15	7	105	#
Mercury	mg/kg	0.1	Metals-021	<0.1	7	<0.1	<0.1	0	86	74
Nickel	mg/kg	1	Metals-020	<1	7	5	4	22	107	99
Zinc	mg/kg	1	Metals-020	<1	7	18	23	24	107	115

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	23	20/11/2024	20/11/2024		[NT]	[NT]
Date analysed	-			[NT]	23	22/11/2024	22/11/2024		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	23	11	7	44	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	23	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	23	12	13	8	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	23	19	<1	180	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	23	13	16	21	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	23	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	23	2	<1	67	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	23	5	1	133	[NT]	[NT]

QUALITY CONTROL: PFAS in Soils Short						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	[NT]
Date prepared	-			20/11/2024	29	20/11/2024	20/11/2024		20/11/2024	[NT]
Date analysed	-			20/11/2024	29	20/11/2024	20/11/2024		20/11/2024	[NT]
Perfluorobutanesulfonic acid	µg/kg	0.1	Org-029	<0.1	29	<0.1	<0.1	0	93	[NT]
Perfluorohexanesulfonic acid - PFHxS	µg/kg	0.1	Org-029	<0.1	29	<0.1	<0.1	0	92	[NT]
Perfluorooctanesulfonic acid PFOS	µg/kg	0.1	Org-029	<0.1	29	<0.1	<0.1	0	93	[NT]
Perfluorooctanoic acid PFOA	µg/kg	0.1	Org-029	<0.1	29	<0.1	<0.1	0	90	[NT]
6:2 FTS	µg/kg	0.1	Org-029	<0.1	29	<0.1	<0.1	0	89	[NT]
8:2 FTS	µg/kg	0.2	Org-029	<0.2	29	<0.2	<0.2	0	90	[NT]
Surrogate $^{13}C_8$ *PFOS*	%		Org-029	100	29	100	101	1	98	[NT]
Surrogate $^{13}C_2$ *PFOA*	%		Org-029	101	29	99	99	0	97	[NT]
Extracted ISTD $^{13}C_3$ *PFBS*	%		Org-029	103	29	106	103	3	102	[NT]
Extracted ISTD $^{18}O_2$ *PFHxS*	%		Org-029	103	29	105	106	1	103	[NT]
Extracted ISTD $^{13}C_4$ *PFOS*	%		Org-029	100	29	109	102	7	108	[NT]
Extracted ISTD $^{13}C_4$ *PFOA*	%		Org-029	105	29	108	110	2	108	[NT]
Extracted ISTD $^{13}C_2$ *6:2FTS*	%		Org-029	110	29	109	113	4	111	[NT]
Extracted ISTD $^{13}C_2$ *8:2FTS*	%		Org-029	121	29	116	115	1	116	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			21/11/2024	[NT]	[NT]	[NT]	[NT]	21/11/2024	[NT]
Date analysed	-			22/11/2024	[NT]	[NT]	[NT]	[NT]	22/11/2024	[NT]
TRH C_6 - C_9	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	98	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	98	[NT]
Benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Toluene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	98	[NT]
m+p-xylene	µg/L	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	97	[NT]
o-xylene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	97	[NT]
Naphthalene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	101	[NT]	[NT]	[NT]	[NT]	100	[NT]
Surrogate Toluene-d8	%		Org-023	99	[NT]	[NT]	[NT]	[NT]	101	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-023	98	[NT]	[NT]	[NT]	[NT]	99	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Date analysed	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
TRH C_{10} - C_{14}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	109	[NT]
TRH C_{15} - C_{28}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	115	[NT]
TRH C_{29} - C_{36}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	100	[NT]
TRH >C_{10} - C_{16}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	109	[NT]
TRH >C_{16} - C_{34}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	115	[NT]
TRH >C_{34} - C_{40}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	100	[NT]
Surrogate o-Terphenyl	%		Org-020	64	[NT]	[NT]	[NT]	[NT]	120	[NT]

QUALITY CONTROL: Metals in Waters - Acid extractable						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Date analysed	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Arsenic - Total	mg/L	0.05	Metals-020	<0.05	[NT]	[NT]	[NT]	[NT]	111	[NT]
Cadmium - Total	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	103	[NT]
Chromium - Total	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	103	[NT]
Copper - Total	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	110	[NT]
Lead - Total	mg/L	0.03	Metals-020	<0.03	[NT]	[NT]	[NT]	[NT]	105	[NT]
Mercury - Total	mg/L	0.0005	Metals-021	<0.0005	[NT]	[NT]	[NT]	[NT]	112	[NT]
Nickel - Total	mg/L	0.02	Metals-020	<0.02	[NT]	[NT]	[NT]	[NT]	104	[NT]
Zinc - Total	mg/L	0.02	Metals-020	<0.02	[NT]	[NT]	[NT]	[NT]	105	[NT]

QUALITY CONTROL: PFAS in Waters Short					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			22/11/2024	[NT]	[NT]	[NT]	[NT]	22/11/2024	[NT]
Date analysed	-			22/11/2024	[NT]	[NT]	[NT]	[NT]	22/11/2024	[NT]
Perfluorobutanesulfonic acid	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	102	[NT]
Perfluorohexanesulfonic acid - PFHxS	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	102	[NT]
Perfluorooctanesulfonic acid PFOS	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	97	[NT]
Perfluorooctanoic acid PFOA	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	102	[NT]
6:2 FTS	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	112	[NT]
8:2 FTS	µg/L	0.02	Org-029	<0.02	[NT]	[NT]	[NT]	[NT]	109	[NT]
Surrogate $^{13}C_8$ *PFOS*	%		Org-029	93	[NT]	[NT]	[NT]	[NT]	94	[NT]
Surrogate $^{13}C_2$ *PFOA*	%		Org-029	100	[NT]	[NT]	[NT]	[NT]	98	[NT]
Extracted ISTD $^{13}C_3$ *PFBS*	%		Org-029	100	[NT]	[NT]	[NT]	[NT]	98	[NT]
Extracted ISTD $^{18}O_2$ *PFHxS*	%		Org-029	97	[NT]	[NT]	[NT]	[NT]	94	[NT]
Extracted ISTD $^{13}C_4$ *PFOS*	%		Org-029	98	[NT]	[NT]	[NT]	[NT]	100	[NT]
Extracted ISTD $^{13}C_4$ *PFOA*	%		Org-029	93	[NT]	[NT]	[NT]	[NT]	95	[NT]
Extracted ISTD $^{13}C_2$ *6:2FTS*	%		Org-029	80	[NT]	[NT]	[NT]	[NT]	88	[NT]
Extracted ISTD $^{13}C_2$ *8:2FTS*	%		Org-029	83	[NT]	[NT]	[NT]	[NT]	92	[NT]

Result Definitions

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

Quality Control Definitions

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

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

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

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

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

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

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

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

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

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

Report Comments

TRH Soil C10-C40 NEPM - # Percent recovery for the matrix spike is not possible to report as the high concentration of analytes in sample 366472-15 have caused interference.

Acid Extractable Metals in Soil:
- The laboratory RPD acceptance criteria has been exceeded for 366472-23 for Cu. Therefore a triplicate result has been issued as laboratory sample number 366472-32.
- # Percent recovery is not applicable due to the high concentration of the element/s in the sample/s. However an acceptable recovery was obtained for the LCS.

Asbestos-ID in soil: NEPM
This report is consistent with the reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013. This is reported outside our scope of NATA accreditation.

Factual description of asbestos identified in the soil samples: NEPM
Sample 366472-1; Chrysotile asbestos identified in 0.0023g of fibrous matted material

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ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
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DATA QUALITY ASSESSMENT SUMMARY

Report Details

Envirolab Report Reference	**366472**
Client ID	Senversa Pty Ltd
Project Reference	S22013, Mars Road DSI
Date Issued	25/11/2024

QC DATA

All laboratory QC data was within the Envirolab Group's specifications except:

QC Specification Exceptions

QC Type	Reference	Analysis	Comments
Spike Recovery %	366472-15	Lead	Fails internal acceptance criteria
Spike Recovery %	366472-15	TRH >C_{34} -C_{40}	Fails internal acceptance criteria
Spike Recovery %	366472-15	TRH C_{29} - C_{36}	Fails internal acceptance criteria

See Report 366472-[R00] for QA/QC details

HOLDING TIME COMPLIANCE EVALUATION

All preservation / holding times (based on AS/ASPHA/ISO/NEPM/USEPA reference documents and standards) are compliant.

Certain analyses have had their recommended technical holding times elongated by filtering and/or freezing on receipt at the laboratory (e.g. BOD, chlorophyll/Pheophytin, nutrients and acid sulphate soil tests).

COMPLIANCE TO QC FREQUENCY (NEPM)

Internal laboratory QC rate complies with NEPM requirements (LCS/MB/MS 1 in 20, Duplicates 1 in 10 samples). Note, samples are batched together with other sample consignments in order to assign QC sample frequency.

QC Evaluation

Duplicate(s) was performed as per NEPM frequency	✓
Laboratory Control Sample(s) were analysed with the samples received	✓
A Method Blank was performed with the samples received	✓
Matrix spike(s) was performed as per NEPM frequency (Not Applicable for Air samples)	✓

Refer to Certificate of Analysis for all Quality Control data.

COC updated: 18/11/24, 1832

S22013, Mars Road DSI

	Sample Name	Lab Report	Comment	Date Time	Combo 1M	PFAS Shot Suite	BTEX	Combo 5AN	Combo 3	Combo 5	VOC	Asbestos ID	Asbestos NEPM	TCLP PFAS short suite	HOLD
1	BH04_0.24-0.3	366546	-	15/11/2024 8:02				X							
2	BH05_0.2-0.25	366546	-	15/11/2024 8:29				X							
3	BH06_0.2-0.3	366546	Previously incorrectly labelled BH06_0.203	15/11/2024 8:57				X							
4	BH07_0.21-0.25	366546	-	15/11/2024 9:22				X							
5	BH08_0.13-0.16	366546	-	15/11/2024 9:56				X							
6	BH09_0.18-0.26	366546	-	15/11/2024 10:28		X		X			X				
7	BH10_0.2-0.3	366546	-	15/11/2024 11:24											X
8	BH10_0.4-0.5	366546	-	15/11/2024 11:24		X		X			X				
9	BH10A_0.2-0.3	366546	-	15/11/2024 11:34				X							
10	BH10A_0.3-0.4	366546	-	15/11/2024 11:35											X
11	BH10A_0.5-0.65	366546	-	15/11/2024 11:36											X
12	BH11_0.2-0.3	366546	-	15/11/2024 12:36											X
13	BH11_0.9-1.0	366546	-	15/11/2024 12:36				X							
14	BH25_0.0-0.2	366546	-	15/11/2024 13:56		X		X							
18	BH25_0.4-0.5	366546	-	15/11/2024 13:56											X
15	QC404	366546	-	15/11/2024 0:00			X								
16	QC506	366546	-	15/11/2024 0:00											X
17	QC507	366546		15/11/2024 0:00		X									

ENVIROLAB GROUP
Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 366546

Date Received: 15/11/24
Time Received: ~~1630~~ 1330
Received By: KC
Temp: Cool/Ambient
Cooling: Ice/Icepack 8°C.
Security: Intact/Broken/None

senversa

Chain of Custody Documentation

Senversa Pty Ltd
www.senversa.com.au
ABN 89 132 231 380

Laboratory:
Address:
Contact: Sample Receipt
Phone:

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 366526
Date Received: 15/11/24
Time Received: 1330
Received By: kc
Temp: Cool/Ambient 8°C
Cooling: Ice/Icepack
Security: Intact/Broken/None

Job Number: 522013	Purchase Order:
Project Name: Mavs Road DSI	Quote No: 245Y5162
Sampled By: LD	Turn Around Time:
Project Manager: Zoe Smith	Page: 1 of
Email Report To:	Phone/Mobile:

Lab ID	Sample ID	Matrix *	Date	Time	Container Information: Type / Code	Total Bottles	Analysis Required	Comments: e.g. Highly contaminated sample; hazardous materials present; trace LORs etc.
1	BH04_0.24-0.3	Soil	15/11/24	AM		x3	HOLD	
2	BH05_0.2-0.25					x3		
3	BH06_0.2-0.203					x1		
4	BH07_0.2-0.25					x2		
5	BH08_0.13-0.16					x2		
6	BH09_0.18-0.26					x3		
7	BH10_0.2-0.3					x3		
8	BH10_0.4-0.5					x3		
9	BH10A_0.2-0.3					x3		
10	BH10A_0.3-0.4					x3		
11	BH10A_0.5-0.65					x3		
12	BH11_0.2-0.3					x3		
13	BH11 0.9-1.0					x3		
14	BH25_0.0-0.2					x3		
N/R	BH25_0.9-1.0					x3		
15	QC4024					x3		
Total						x1		TS

Sampler: I attest that proper field sampling procedures in accordance with Senversa standard procedures and/or project specifications were used during the collection of these samples:

Sampler Name: Lucas Rzaglewski Signature: Date: 15/11/24

Relinquished By:		Method of Shipment (if applicable):	Received by:	
Name/Signature: Lucas Rzaglewski	Date: 15/11/24	Carrier / Reference #:	Name/Signature: Katherine Olivier	Date: 15/11/24
Of:	Time:	Date/Time:	Of: ES SYD	Time: ~~1400~~ 1330
Name/Signature:	Date:	Carrier / Reference #:	Name/Signature:	Date:
Of:	Time:	Date/Time:	Of:	Time:
Name/Signature:	Date:	Carrier / Reference #:	Name/Signature:	Date:
Of:	Time:	Date/Time:	Of:	Time:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Acid (HNO_3) Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide (NaOH)/Cadmium (Cd) Preserved; S = Sodium Hydroxide Preserved Plastic; STH = Sodium thiosulfate preserved plastic; V = VOA Vial Hydochloric Acid (HCl) Preserved; VS = VOA Vial Sulphuric Preserved; VSA = Sulphuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation Bottle; SP = Sulphuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; UA = Unpreserved Amber Glass; L=Lugol's Iodine preserved white plastic bottle; SW= sulfuric acid preserved wide mouth glass jar

#366946
15/11/24
KC

senversa

Chain of Custody Documentation

Senversa Pty Ltd
www.senversa.com.au
ABN 89 132 231 380

Laboratory:
Address:
Contact: Sample Receipt
Phone:

Job Number:	**Purchase Order:**
Project Name:	**Quote No:**
Sampled By:	**Turn Around Time:**
Project Manager:	**Page:** of
Email Report To:	**Phone/Mobile:**

Sample Information					Container Information		Analysis Required											
Lab ID	**Sample ID**	**Matrix ***	**Date**	**Time**	**Type / Code**	**Total Bottles**											HOLD	**Comments**: e.g. Highly contaminated sample; hazardous materials present; trace LORs etc.
16	QC506					x1												TB
17	QC507					x1												TB PFAS
18	BH25_0.4-0.5	KC																
Total																		

Sampler: I attest that proper field sampling procedures in accordance with Senversa standard procedures and/or project specifications were used during the collection of these samples:	**Sampler Name:**	**Signature:**	**Date:**

Relinquished By:		**Method of Shipment (if applicable):**	**Received by:**	
Name/Signature:	Date:	Carrier / Reference #:	Name/Signature:	Date:
Of:	Time:	Date/Time:	Of:	Time:
Name/Signature:	Date:	Carrier / Reference #:	Name/Signature:	Date:
Of:	Time:	Date/Time:	Of:	Time:
Name/Signature:	Date:	Carrier / Reference #:	Name/Signature:	Date:
Of:	Time:	Date/Time:	Of:	Time:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Acid (HNO_3) Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide (NaOH)/Cadmium (Cd) Preserved; S = Sodium Hydroxide Preserved Plastic; STH = Sodium thiosulfate preserved plastic;
V = VOA Vial Hydochloric Acid (HCl) Preserved; VS = VOA Vial Sulphuric Preserved; VSA = Sulphuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation Bottle; SP = Sulphuric Preserved Plastic;
F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; UA = Unpreserved Amber Glass; L=Lugol's iodine preserved white plastic bottle; SW= sulfuric acid preserved wide mouth glass jar

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SAMPLE RECEIPT ADVICE

Client Details

Client	Senversa Pty Ltd
Attention	Zoe Smith

Sample Login Details

Your reference	52213, Mars Road DSI
Envirolab Reference	366546
Date Sample Received	15/11/2024
Date Instructions Received	15/11/2024
Date Results Expected to be Reported	On Hold

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	18 Soil
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	8
Cooling Method	None
Sampling Date Provided	

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:

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Sample ID	On Hold
BH04-0.2-4-0.3	✓
BH05-0.2-0.25	✓
BH06-0.2-0.203	✓
BH07-0.2-0.25	✓
BH08-0.13-0.16	✓
BH09-0.18-0.26	✓
BH10-0.2-0.3	✓
BH10-0.4-0.5	✓
BH10A-0.2-0.3	✓
BH10A-0.3-0.4	✓
BH10A-0.5-0.65	✓
BH11-0.2-0.3	✓
BH11-0.9-1.0	✓
BH25-0.0-0.2	✓
QC404	✓
QC506	✓
QC507	✓
BH25-0.4-0.5	✓

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.

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CERTIFICATE OF ANALYSIS 366546

Client Details

Client	Senversa Pty Ltd
Attention	Zoe Smith
Address	6/15 William St, Melbourne, VIC, 3000

Sample Details

Your Reference	**S22013, Mars Road DSI**
Number of Samples	18 Soil
Date samples received	15/11/2024
Date completed instructions received	18/11/2024

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.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	25/11/2024
Date of Issue	25/11/2024

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

Asbestos Approved By
Analysed by Asbestos Approved Analyst: Nyovan Moonean
Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By
Dragana Tomas, Senior Chemist
Giovanni Agosti, Group Technical Manager
Lucy Zhu, Asbestos Supervisor
Sean McAlary, Senior Chemist
Timothy Toll, Senior Chemist

Authorised By
Nancy Zhang, Laboratory Manager

VOCs in soil			
Our Reference		366546-6	366546-8
Your Reference	UNITS	BH09	BH10
Depth		0.18-0.26	0.4-0.5
Date Sampled		15/11/2024	15/11/2024
Type of sample		Soil	Soil
Date Extracted	-	20/11/2024	20/11/2024
Date Analysed	-	21/11/2024	21/11/2024
Dichlorodifluoromethane	mg/kg	<1	<1
Chloromethane	mg/kg	<1	<1
Vinyl Chloride	mg/kg	<1	<1
Bromomethane	mg/kg	<1	<1
Chloroethane	mg/kg	<1	<1
Trichlorofluoromethane	mg/kg	<1	<1
1,1-Dichloroethene	mg/kg	<1	<1
trans-1,2-Dichloroethene	mg/kg	<1	<1
1,1-Dichloroethane	mg/kg	<1	<1
cis-1,2-Dichloroethene	mg/kg	<1	<1
Bromochloromethane	mg/kg	<1	<1
Chloroform	mg/kg	<1	<1
2,2-Dichloropropane	mg/kg	<1	<1
1,2-Dichloroethane	mg/kg	<1	<1
1,1,1-Trichloroethane	mg/kg	<1	<1
1,1-Dichloropropene	mg/kg	<1	<1
Cyclohexane	mg/kg	<1	<1
Carbon Tetrachloride	mg/kg	<1	<1
Benzene	mg/kg	<0.2	<0.2
Dibromomethane	mg/kg	<1	<1
1,2-Dichloropropane	mg/kg	<1	<1
Trichloroethene	mg/kg	<1	<1
Bromodichloromethane	mg/kg	<1	<1
trans-1,3-Dichloropropene	mg/kg	<1	<1
cis-1,3-Dichloropropene	mg/kg	<1	<1
1,1,2-Trichloroethane	mg/kg	<1	<1
Toluene	mg/kg	<0.5	<0.5
1,3-Dichloropropane	mg/kg	<1	<1
Dibromochloromethane	mg/kg	<1	<1
1,2-Dibromoethane	mg/kg	<1	<1
Tetrachloroethene	mg/kg	<1	<1
1,1,1,2-Tetrachloroethane	mg/kg	<1	<1
Chlorobenzene	mg/kg	<1	<1

VOCs in soil			
Our Reference		366546-6	366546-8
Your Reference	UNITS	BH09	BH10
Depth		0.18-0.26	0.4-0.5
Date Sampled		15/11/2024	15/11/2024
Type of sample		Soil	Soil
Ethylbenzene	mg/kg	<1	<1
Bromoform	mg/kg	<1	<1
m+p-Xylene	mg/kg	<2	<2
Styrene	mg/kg	<1	<1
1,1,2,2-Tetrachloroethane	mg/kg	<1	<1
o-Xylene	mg/kg	<1	<1
1,2,3-Trichloropropane	mg/kg	<1	<1
Isopropylbenzene	mg/kg	<1	<1
Bromobenzene	mg/kg	<1	<1
n-Propylbenzene	mg/kg	<1	<1
2-Chlorotoluene	mg/kg	<1	<1
4-Chlorotoluene	mg/kg	<1	<1
1,3,5-Trimethylbenzene	mg/kg	<1	<1
tert-Butylbenzene	mg/kg	<1	<1
1,2,4-Trimethylbenzene	mg/kg	<1	<1
1,3-Dichlorobenzene	mg/kg	<1	<1
sec-Butylbenzene	mg/kg	<1	<1
1,4-Dichlorobenzene	mg/kg	<1	<1
4-Isopropyltoluene	mg/kg	<1	<1
1,2-Dichlorobenzene	mg/kg	<1	<1
n-Butylbenzene	mg/kg	<1	<1
1,2-Dibromo-3-chloropropane	mg/kg	<1	<1
1,2,4-Trichlorobenzene	mg/kg	<1	<1
Hexachlorobutadiene	mg/kg	<1	<1
1,2,3-Trichlorobenzene	mg/kg	<1	<1
Surrogate Dibromofluoromethane	%	102	102
Surrogate aaa-Trifluorotoluene	%	95	97
Surrogate Toluene-d_8	%	101	101
Surrogate 4-Bromofluorobenzene	%	95	95

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		366546-1	366546-2	366546-3	366546-4	366546-5
Your Reference	UNITS	BH04	BH05	BH06	BH07	BH08
Depth		0.24-0.3	0.2-0.25	0.2-0.23	0.21-0.25	0.13-0.16
Date Sampled		15/11/2024	15/11/2024	15/11/2024	15/11/2024	15/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024	21/11/2024	21/11/2024
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	97	100	93	99	99

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		366546-6	366546-8	366546-9	366546-13	366546-14
Your Reference	UNITS	BH09	BH10	BH10A	BH11	BH25
Depth		0.18-0.26	0.4-0.5	0.2-0.3	0.9-1.0	0.0-0.2
Date Sampled		15/11/2024	15/11/2024	15/11/2024	15/11/2024	15/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024	21/11/2024	21/11/2024
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	95	97	102	97	98

vTRH(C6-C10)/BTEXN in Soil		
Our Reference		366546-15
Your Reference	UNITS	QC404
Depth		-
Date Sampled		15/11/2024
Type of sample		Soil
Date extracted	-	20/11/2024
Date analysed	-	21/11/2024
Benzene	mg/kg	99%
Toluene	mg/kg	99%
Ethylbenzene	mg/kg	99%
m+p-xylene	mg/kg	98%
o-Xylene	mg/kg	99%
Surrogate aaa-Trifluorotoluene	%	93

svTRH (C10-C40) in Soil						
Our Reference		366546-1	366546-2	366546-3	366546-4	366546-5
Your Reference	UNITS	BH04	BH05	BH06	BH07	BH08
Depth		0.24-0.3	0.2-0.25	0.2-0.23	0.21-0.25	0.13-0.16
Date Sampled		15/11/2024	15/11/2024	15/11/2024	15/11/2024	15/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	100
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	120
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	120
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	240
Surrogate o-Terphenyl	%	89	85	87	84	89

svTRH (C10-C40) in Soil						
Our Reference		366546-6	366546-8	366546-9	366546-13	366546-14
Your Reference	UNITS	BH09	BH10	BH10A	BH11	BH25
Depth		0.18-0.26	0.4-0.5	0.2-0.3	0.9-1.0	0.0-0.2
Date Sampled		15/11/2024	15/11/2024	15/11/2024	15/11/2024	15/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	150	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	150	<50	<50
Surrogate o-Terphenyl	%	85	86	89	86	87

PAHs in Soil						
Our Reference		366546-1	366546-2	366546-3	366546-4	366546-5
Your Reference	UNITS	BH04	BH05	BH06	BH07	BH08
Depth		0.24-0.3	0.2-0.25	0.2-0.23	0.21-0.25	0.13-0.16
Date Sampled		15/11/2024	15/11/2024	15/11/2024	15/11/2024	15/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024
Naphthalene	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	0.7	<0.1	0.1	<0.1	<0.1
Anthracene	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	1.3	0.4	0.4	0.3	0.2
Pyrene	mg/kg	1.2	0.5	0.3	0.3	0.2
Benzo(a)anthracene	mg/kg	0.5	0.2	0.1	0.1	0.2
Chrysene	mg/kg	0.5	0.2	0.1	0.1	0.2
Benzo(b,j+k)fluoranthene	mg/kg	0.8	0.3	0.2	0.2	0.3
Benzo(a)pyrene	mg/kg	0.55	0.2	0.1	0.1	0.2
Indeno(1,2,3-c,d)pyrene	mg/kg	0.4	0.2	<0.1	0.1	0.2
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	0.3	0.2	<0.1	0.1	0.2
Total +ve PAH's	mg/kg	6.5	2.1	1.3	1.4	1.7
Benzo(a)pyrene TEQ calc (zero)	mg/kg	0.7	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	0.8	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	0.8	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	97	96	100	99	99

PAHs in Soil						
Our Reference		366546-6	366546-8	366546-9	366546-13	366546-14
Your Reference	UNITS	BH09	BH10	BH10A	BH11	BH25
Depth		0.18-0.26	0.4-0.5	0.2-0.3	0.9-1.0	0.0-0.2
Date Sampled		15/11/2024	15/11/2024	15/11/2024	15/11/2024	15/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024
Naphthalene	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	0.2	0.2	0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.4	0.4	0.5	<0.1	0.2
Pyrene	mg/kg	0.3	0.3	0.5	<0.1	0.2
Benzo(a)anthracene	mg/kg	0.2	0.1	0.2	<0.1	<0.1
Chrysene	mg/kg	0.2	0.1	0.2	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	0.3	<0.2	0.4	<0.2	0.2
Benzo(a)pyrene	mg/kg	0.2	0.1	0.3	<0.05	0.1
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	<0.1	0.2	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	0.1	0.1	0.2	<0.1	0.1
Total +ve PAH's	mg/kg	1.9	1.3	2.7	<0.05	0.90
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	95	93	96	96	97

Organochlorine Pesticides in soil						
Our Reference		366546-1	366546-2	366546-3	366546-4	366546-5
Your Reference	UNITS	BH04	BH05	BH06	BH07	BH08
Depth		0.24-0.3	0.2-0.25	0.2-0.23	0.21-0.25	0.13-0.16
Date Sampled		15/11/2024	15/11/2024	15/11/2024	15/11/2024	15/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total Positive Aldrin+Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	99	101	99	98	100

Organochlorine Pesticides in soil						
Our Reference		366546-6	366546-8	366546-9	366546-13	366546-14
Your Reference	UNITS	BH09	BH10	BH10A	BH11	BH25
Depth		0.18-0.26	0.4-0.5	0.2-0.3	0.9-1.0	0.0-0.2
Date Sampled		15/11/2024	15/11/2024	15/11/2024	15/11/2024	15/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total Positive Aldrin+Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	98	99	99	98	99

PCBs in Soil						
Our Reference		366546-1	366546-2	366546-3	366546-4	366546-5
Your Reference	UNITS	BH04	BH05	BH06	BH07	BH08
Depth		0.24-0.3	0.2-0.25	0.2-0.23	0.21-0.25	0.13-0.16
Date Sampled		15/11/2024	15/11/2024	15/11/2024	15/11/2024	15/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 2-Fluorobiphenyl	%	95	95	92	93	93

PCBs in Soil						
Our Reference		366546-6	366546-8	366546-9	366546-13	366546-14
Your Reference	UNITS	BH09	BH10	BH10A	BH11	BH25
Depth		0.18-0.26	0.4-0.5	0.2-0.3	0.9-1.0	0.0-0.2
Date Sampled		15/11/2024	15/11/2024	15/11/2024	15/11/2024	15/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 2-Fluorobiphenyl	%	90	92	91	90	92

Acid Extractable metals in soil						
Our Reference		366546-1	366546-2	366546-3	366546-4	366546-5
Your Reference	UNITS	BH04	BH05	BH06	BH07	BH08
Depth		0.24-0.3	0.2-0.25	0.2-0.23	0.21-0.25	0.13-0.16
Date Sampled		15/11/2024	15/11/2024	15/11/2024	15/11/2024	15/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024	21/11/2024	21/11/2024
Arsenic	mg/kg	<4	5	4	5	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	7	7	8	11	10
Copper	mg/kg	22	6	12	5	23
Lead	mg/kg	11	12	11	12	23
Mercury	mg/kg	<0.1	<0.1	0.2	<0.1	<0.1
Nickel	mg/kg	17	20	83	13	21
Zinc	mg/kg	23	17	27	23	50

Acid Extractable metals in soil						
Our Reference		366546-6	366546-8	366546-9	366546-13	366546-14
Your Reference	UNITS	BH09	BH10	BH10A	BH11	BH25
Depth		0.18-0.26	0.4-0.5	0.2-0.3	0.9-1.0	0.0-0.2
Date Sampled		15/11/2024	15/11/2024	15/11/2024	15/11/2024	15/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024	21/11/2024	21/11/2024
Arsenic	mg/kg	5	8	4	7	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	5	19	16	18	25
Copper	mg/kg	2	11	25	9	65
Lead	mg/kg	10	18	25	23	75
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	2	7	12	6	15
Zinc	mg/kg	29	28	46	24	150

Acid Extractable metals in soil		
Our Reference		366546-19
Your Reference	UNITS	BH04 - [TRIPLICATE]
Depth		0.24-0.3
Date Sampled		15/11/2024
Type of sample		Soil
Date prepared	-	20/11/2024
Date analysed	-	21/11/2024
Arsenic	mg/kg	<4
Cadmium	mg/kg	<0.4
Chromium	mg/kg	9
Copper	mg/kg	9
Lead	mg/kg	14
Mercury	mg/kg	<0.1
Nickel	mg/kg	8
Zinc	mg/kg	24

Moisture						
Our Reference		366546-1	366546-2	366546-3	366546-4	366546-5
Your Reference	UNITS	BH04	BH05	BH06	BH07	BH08
Depth		0.24-0.3	0.2-0.25	0.2-0.23	0.21-0.25	0.13-0.16
Date Sampled		15/11/2024	15/11/2024	15/11/2024	15/11/2024	15/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024	21/11/2024	21/11/2024
Moisture	%	14	15	21	11	16

Moisture						
Our Reference		366546-6	366546-8	366546-9	366546-13	366546-14
Your Reference	UNITS	BH09	BH10	BH10A	BH11	BH25
Depth		0.18-0.26	0.4-0.5	0.2-0.3	0.9-1.0	0.0-0.2
Date Sampled		15/11/2024	15/11/2024	15/11/2024	15/11/2024	15/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024	21/11/2024	21/11/2024
Moisture	%	16	14	12	18	11

Moisture		
Our Reference		366546-17
Your Reference	UNITS	QC507
Depth		-
Date Sampled		15/11/2024
Type of sample		Soil
Date prepared	-	20/11/2024
Date analysed	-	21/11/2024
Moisture	%	3.0

PFAS in Soils Short					
Our Reference		366546-6	366546-8	366546-14	366546-17
Your Reference	UNITS	BH09	BH10	BH25	QC507
Depth		0.18-0.26	0.4-0.5	0.0-0.2	-
Date Sampled		15/11/2024	15/11/2024	15/11/2024	15/11/2024
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Perfluorobutanesulfonic acid	µg/kg	<0.1	<0.1	<0.1	<0.1
Perfluorohexanesulfonic acid - PFHxS	µg/kg	<0.1	<0.1	<0.1	<0.1
Perfluorooctanesulfonic acid PFOS	µg/kg	0.4	<0.1	1.1	<0.1
Perfluorooctanoic acid PFOA	µg/kg	<0.1	<0.1	1	<0.1
6:2 FTS	µg/kg	<0.1	<0.1	<0.1	<0.1
8:2 FTS	µg/kg	<0.2	<0.2	<0.2	<0.2
Surrogate $^{13}C_8$ *PFOS*	%	101	97	102	100
Surrogate $^{13}C_2$ *PFOA*	%	99	102	103	104
Extracted ISTD $^{13}C_3$ *PFBS*	%	95	99	99	107
Extracted ISTD $^{18}O_2$ *PFHxS*	%	97	98	104	108
Extracted ISTD $^{13}C_4$ *PFOS*	%	94	100	99	105
Extracted ISTD $^{13}C_4$ *PFOA*	%	101	97	101	103
Extracted ISTD $^{13}C_2$ *6:2FTS*	%	103	105	122	111
Extracted ISTD $^{13}C_2$ *8:2FTS*	%	116	111	88	116
Total Positive PFHxS & PFOS	µg/kg	0.4	<0.1	1.1	<0.1
Total Positive PFOS & PFOA	µg/kg	0.4	<0.1	2.0	<0.1
Total Positive PFAS	µg/kg	0.4	<0.1	2.0	<0.1

Asbestos ID - soils NEPM - ASB-001						
Our Reference		366546-1	366546-2	366546-6	366546-8	366546-9
Your Reference	UNITS	BH04	BH05	BH09	BH10	BH10A
Depth		0.24-0.3	0.2-0.25	0.18-0.26	0.4-0.5	0.2-0.3
Date Sampled		15/11/2024	15/11/2024	15/11/2024	15/11/2024	15/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024
Sample mass tested	g	557.75	528.51	666.08	567.29	668.39
Sample Description	-	Beige fine-grained soil & rocks	Beige fine-grained soil & rocks	Beige fine-grained soil & rocks	Beige fine-grained soil & rocks	Beige fine-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	Chrysotile asbestos detected Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos[#1]	g/kg	<0.1	0.2946	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	See Above	No visible asbestos detected	No visible asbestos detected	Chrysotile
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	0.1557	–	–	0.0028
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	0.0295	<0.001	<0.001	<0.001
Asbestos comments	-	Nil	YES	Nil	Nil	YES

Asbestos ID - soils NEPM - ASB-001			
Our Reference		366546-13	366546-14
Your Reference	UNITS	BH11	BH25
Depth		0.9-1.0	0.0-0.2
Date Sampled		15/11/2024	15/11/2024
Type of sample		Soil	Soil
Date analysed	-	22/11/2024	22/11/2024
Sample mass tested	g	549.71	545.91
Sample Description	-	Beige fine-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected
Total Asbestos#1	g/kg	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–
FA and AF Estimation*	g	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001
Asbestos comments	-	Nil	Nil

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
ASB-001	Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit of 0.1g/kg (0.01% w/w) as per Australian Standard AS4964-2004. Results reported denoted with * are outside our scope of NATA accreditation. NOTE#1 Total Asbestos g/kg was analysed and reported as per Australian Standard AS4964 (This is the sum of ACM >7mm, <7mm and FA/AF relative to the sample mass tested) NOTE#2 The screening level of 0.001% w/w asbestos in soil for FA and AF only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres. Estimation = Estimated asbestos weight Results reported with "--" is equivalent to no visible asbestos identified using Polarised Light microscopy and Dispersion Staining Techniques.
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.

Method ID	Methodology Summary
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-021/022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD and/or GC-MS/GC-MSMS. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.
Org-022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS/GC-MSMS. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
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.
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.

Method ID	Methodology Summary
Org-029	Soil samples are extracted with basified Methanol. Waters and soil extracts are directly injected and/or concentrated/extracted using SPE. TCLPs/ASLP leachates are centrifuged, the supernatant is then analysed (including amendment with solvent) - as per the option in AS4439.3. Analysis is undertaken with LC-MS/MS. PFAS results include the sum of branched and linear isomers where applicable. Please note that PFAS results are corrected for Extracted Internal Standards (QSM 5.4 Table B-15 terminology), which are mass labelled analytes added prior to sample preparation to assess matrix effects and verify processing of the sample. PFAS analytes without a commercially available mass labelled analogue are corrected vs a closely eluting mass labelled PFAS compound. Surrogates are also reported, in this context they are mass labelled PFAS compounds added prior to extraction but are used as monitoring compounds only (not used for result correction). Envicarb (or similar) is used discretionally to remove interfering matrix components. Please contact the laboratory if estimates of Measurement Uncertainty are required as per WA DER.

QUALITY CONTROL: VOCs in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	366546-8
Date Extracted	-			20/11/2024	6	20/11/2024	20/11/2024		20/11/2024	20/11/2024
Date Analysed	-			21/11/2024	6	21/11/2024	21/11/2024		21/11/2024	21/11/2024
Dichlorodifluoromethane	mg/kg	1	Org-023	<1	6	<1	<1	0	[NT]	[NT]
Chloromethane	mg/kg	1	Org-023	<1	6	<1	<1	0	[NT]	[NT]
Vinyl Chloride	mg/kg	1	Org-023	<1	6	<1	<1	0	[NT]	[NT]
Bromomethane	mg/kg	1	Org-023	<1	6	<1	<1	0	[NT]	[NT]
Chloroethane	mg/kg	1	Org-023	<1	6	<1	<1	0	[NT]	[NT]
Trichlorofluoromethane	mg/kg	1	Org-023	<1	6	<1	<1	0	[NT]	[NT]
1,1-Dichloroethene	mg/kg	1	Org-023	<1	6	<1	<1	0	[NT]	[NT]
trans-1,2-Dichloroethene	mg/kg	1	Org-023	<1	6	<1	<1	0	[NT]	[NT]
1,1-Dichloroethane	mg/kg	1	Org-023	<1	6	<1	<1	0	110	107
cis-1,2-Dichloroethene	mg/kg	1	Org-023	<1	6	<1	<1	0	[NT]	[NT]
Bromochloromethane	mg/kg	1	Org-023	<1	6	<1	<1	0	[NT]	[NT]
Chloroform	mg/kg	1	Org-023	<1	6	<1	<1	0	115	109
2,2-Dichloropropane	mg/kg	1	Org-023	<1	6	<1	<1	0	[NT]	[NT]
1,2-Dichloroethane	mg/kg	1	Org-023	<1	6	<1	<1	0	109	106
1,1,1-Trichloroethane	mg/kg	1	Org-023	<1	6	<1	<1	0	108	104
1,1-Dichloropropene	mg/kg	1	Org-023	<1	6	<1	<1	0	[NT]	[NT]
Cyclohexane	mg/kg	1	Org-023	<1	6	<1	<1	0	[NT]	[NT]
Carbon Tetrachloride	mg/kg	1	Org-023	<1	6	<1	<1	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-023	<0.2	6	<0.2	<0.2	0	109	106
Dibromomethane	mg/kg	1	Org-023	<1	6	<1	<1	0	[NT]	[NT]
1,2-Dichloropropane	mg/kg	1	Org-023	<1	6	<1	<1	0	[NT]	[NT]
Trichloroethene	mg/kg	1	Org-023	<1	6	<1	<1	0	104	101
Bromodichloromethane	mg/kg	1	Org-023	<1	6	<1	<1	0	107	106
trans-1,3-Dichloropropene	mg/kg	1	Org-023	<1	6	<1	<1	0	[NT]	[NT]
cis-1,3-Dichloropropene	mg/kg	1	Org-023	<1	6	<1	<1	0	[NT]	[NT]
1,1,2-Trichloroethane	mg/kg	1	Org-023	<1	6	<1	<1	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-023	<0.5	6	<0.5	<0.5	0	110	107
1,3-Dichloropropane	mg/kg	1	Org-023	<1	6	<1	<1	0	[NT]	[NT]
Dibromochloromethane	mg/kg	1	Org-023	<1	6	<1	<1	0	101	100
1,2-Dibromoethane	mg/kg	1	Org-023	<1	6	<1	<1	0	[NT]	[NT]
Tetrachloroethene	mg/kg	1	Org-023	<1	6	<1	<1	0	101	98
1,1,1,2-Tetrachloroethane	mg/kg	1	Org-023	<1	6	<1	<1	0	[NT]	[NT]
Chlorobenzene	mg/kg	1	Org-023	<1	6	<1	<1	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-023	<1	6	<1	<1	0	110	107
Bromoform	mg/kg	1	Org-023	<1	6	<1	<1	0	[NT]	[NT]
m+p-Xylene	mg/kg	2	Org-023	<2	6	<2	<2	0	111	108
Styrene	mg/kg	1	Org-023	<1	6	<1	<1	0	[NT]	[NT]
1,1,2,2-Tetrachloroethane	mg/kg	1	Org-023	<1	6	<1	<1	0	[NT]	[NT]

QUALITY CONTROL: VOCs in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	366546-8
o-Xylene	mg/kg	1	Org-023	<1	6	<1	<1	0	112	109
1,2,3-Trichloropropane	mg/kg	1	Org-023	<1	6	<1	<1	0	[NT]	[NT]
Isopropylbenzene	mg/kg	1	Org-023	<1	6	<1	<1	0	[NT]	[NT]
Bromobenzene	mg/kg	1	Org-023	<1	6	<1	<1	0	[NT]	[NT]
n-Propylbenzene	mg/kg	1	Org-023	<1	6	<1	<1	0	[NT]	[NT]
2-Chlorotoluene	mg/kg	1	Org-023	<1	6	<1	<1	0	[NT]	[NT]
4-Chlorotoluene	mg/kg	1	Org-023	<1	6	<1	<1	0	[NT]	[NT]
1,3,5-Trimethylbenzene	mg/kg	1	Org-023	<1	6	<1	<1	0	[NT]	[NT]
tert-Butylbenzene	mg/kg	1	Org-023	<1	6	<1	<1	0	[NT]	[NT]
1,2,4-Trimethylbenzene	mg/kg	1	Org-023	<1	6	<1	<1	0	[NT]	[NT]
1,3-Dichlorobenzene	mg/kg	1	Org-023	<1	6	<1	<1	0	[NT]	[NT]
sec-Butylbenzene	mg/kg	1	Org-023	<1	6	<1	<1	0	[NT]	[NT]
1,4-Dichlorobenzene	mg/kg	1	Org-023	<1	6	<1	<1	0	[NT]	[NT]
4-Isopropyltoluene	mg/kg	1	Org-023	<1	6	<1	<1	0	[NT]	[NT]
1,2-Dichlorobenzene	mg/kg	1	Org-023	<1	6	<1	<1	0	[NT]	[NT]
n-Butylbenzene	mg/kg	1	Org-023	<1	6	<1	<1	0	[NT]	[NT]
1,2-Dibromo-3-chloropropane	mg/kg	1	Org-023	<1	6	<1	<1	0	[NT]	[NT]
1,2,4-Trichlorobenzene	mg/kg	1	Org-023	<1	6	<1	<1	0	[NT]	[NT]
Hexachlorobutadiene	mg/kg	1	Org-023	<1	6	<1	<1	0	[NT]	[NT]
1,2,3-Trichlorobenzene	mg/kg	1	Org-023	<1	6	<1	<1	0	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	102	6	102	101	1	99	98
Surrogate aaa-Trifluorotoluene	%		Org-023	106	6	95	97	2	100	93
Surrogate Toluene-d_8	%		Org-023	101	6	101	101	0	97	97
Surrogate 4-Bromofluorobenzene	%		Org-023	95	6	95	95	0	99	100

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	366546-8
Date extracted	-			20/11/2024	1	20/11/2024	20/11/2024		20/11/2024	20/11/2024
Date analysed	-			21/11/2024	1	21/11/2024	21/11/2024		21/11/2024	21/11/2024
TRH C_6 - C_9	mg/kg	25	Org-023	<25	1	<25	<25	0	110	107
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	1	<25	<25	0	110	107
Benzene	mg/kg	0.2	Org-023	<0.2	1	<0.2	<0.2	0	109	106
Toluene	mg/kg	0.5	Org-023	<0.5	1	<0.5	<0.5	0	110	107
Ethylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	110	107
m+p-xylene	mg/kg	2	Org-023	<2	1	<2	<2	0	111	108
o-Xylene	mg/kg	1	Org-023	<1	1	<1	<1	0	112	109
Naphthalene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	106	1	97	96	1	100	93

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	6	20/11/2024	20/11/2024		[NT]	[NT]
Date analysed	-			[NT]	6	21/11/2024	21/11/2024		[NT]	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	6	<25	<25	0	[NT]	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	6	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-023	[NT]	6	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-023	[NT]	6	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-023	[NT]	6	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-023	[NT]	6	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-023	[NT]	6	<1	<1	0	[NT]	[NT]
Naphthalene	mg/kg	1	Org-023	[NT]	6	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	6	95	97	2	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	366546-8
Date extracted	-			20/11/2024	1	20/11/2024	20/11/2024		20/11/2024	20/11/2024
Date analysed	-			20/11/2024	1	20/11/2024	20/11/2024		20/11/2024	20/11/2024
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	1	<50	<50	0	103	96
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	1	<100	<100	0	98	94
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	1	<100	<100	0	100	109
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	1	<50	<50	0	103	96
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	1	<100	<100	0	98	94
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	1	<100	<100	0	100	109
Surrogate o-Terphenyl	%		Org-020	86	1	89	89	0	91	86

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	6	20/11/2024	20/11/2024		[NT]	[NT]
Date analysed	-			[NT]	6	20/11/2024	20/11/2024		[NT]	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	6	<50	<50	0	[NT]	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	6	<100	<100	0	[NT]	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	6	<100	<100	0	[NT]	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	6	<50	<50	0	[NT]	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	6	<100	<100	0	[NT]	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	6	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-020	[NT]	6	85	84	1	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	366546-8
Date extracted	-			20/11/2024	1	20/11/2024	20/11/2024		20/11/2024	20/11/2024
Date analysed	-			22/11/2024	1	22/11/2024	22/11/2024		22/11/2024	22/11/2024
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	76	74
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	78	74
Fluorene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	76	74
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	1	0.7	0.4	55	78	62
Anthracene	mg/kg	0.1	Org-022/025	<0.1	1	0.2	<0.1	67	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	1	1.3	0.5	89	80	84
Pyrene	mg/kg	0.1	Org-022/025	<0.1	1	1.2	0.5	82	78	60
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	0.5	0.1	133	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	1	0.5	0.1	133	70	60
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	1	0.8	0.3	91	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	1	0.55	0.1	138	72	70
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	1	0.4	0.1	120	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	1	0.3	0.1	100	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	100	1	97	101	4	99	99

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	6	20/11/2024	20/11/2024		[NT]	[NT]
Date analysed	-			[NT]	6	22/11/2024	22/11/2024		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	6	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	6	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	6	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	6	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	6	0.2	0.1	67	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	6	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	6	0.4	0.3	29	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	6	0.3	0.3	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	6	0.2	0.1	67	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	6	0.2	0.2	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	6	0.3	0.3	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	6	0.2	0.2	0	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	6	0.1	0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	6	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	6	0.1	0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	6	95	93	2	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	366546-8
Date extracted	-			20/11/2024	1	20/11/2024	20/11/2024		20/11/2024	20/11/2024
Date analysed	-			22/11/2024	1	22/11/2024	22/11/2024		22/11/2024	22/11/2024
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	82	80
HCB	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	82	84
gamma-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	78	80
delta-BHC	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	66	60
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	84	84
gamma-Chlordane	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	76	78
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	84	84
Endrin	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	74	76
Endosulfan II	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	82	84
Endrin Aldehyde	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	84	84
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Mirex	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	102	1	99	101	2	102	101

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	6	20/11/2024	20/11/2024		[NT]	[NT]
Date analysed	-			[NT]	6	22/11/2024	22/11/2024		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	6	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-022/025	[NT]	6	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	6	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	6	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	6	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	6	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	6	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	6	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	6	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	6	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	6	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	6	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	6	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-022/025	[NT]	6	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	6	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	6	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	6	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	6	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	6	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	6	<0.1	<0.1	0	[NT]	[NT]
Mirex	mg/kg	0.1	Org-022/025	[NT]	6	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	[NT]	6	98	97	1	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	366546-8
Date extracted	-			20/11/2024	1	20/11/2024	20/11/2024		20/11/2024	20/11/2024
Date analysed	-			22/11/2024	1	22/11/2024	22/11/2024		22/11/2024	22/11/2024
Aroclor 1016	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	83	80
Aroclor 1260	mg/kg	0.1	Org-021/022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate 2-Fluorobiphenyl	%		Org-021/022/025	99	1	95	95	0	97	94

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	6	20/11/2024	20/11/2024		[NT]	[NT]
Date analysed	-			[NT]	6	22/11/2024	22/11/2024		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-021/022/025	[NT]	6	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021/022/025	[NT]	6	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021/022/025	[NT]	6	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021/022/025	[NT]	6	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021/022/025	[NT]	6	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021/022/025	[NT]	6	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-021/022/025	[NT]	6	<0.1	<0.1	0	[NT]	[NT]
Surrogate 2-Fluorobiphenyl	%		Org-021/022/025	[NT]	6	90	90	0	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	366546-8
Date prepared	-			20/11/2024	1	20/11/2024	20/11/2024		20/11/2024	20/11/2024
Date analysed	-			21/11/2024	1	21/11/2024	21/11/2024		21/11/2024	21/11/2024
Arsenic	mg/kg	4	Metals-020	<4	1	<4	5	22	103	96
Cadmium	mg/kg	0.4	Metals-020	<0.4	1	<0.4	<0.4	0	90	83
Chromium	mg/kg	1	Metals-020	<1	1	7	7	0	96	94
Copper	mg/kg	1	Metals-020	<1	1	22	8	93	99	110
Lead	mg/kg	1	Metals-020	<1	1	11	14	24	94	88
Mercury	mg/kg	0.1	Metals-021	<0.1	1	<0.1	<0.1	0	98	79
Nickel	mg/kg	1	Metals-020	<1	1	17	8	72	98	98
Zinc	mg/kg	1	Metals-020	<1	1	23	30	26	94	120

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	6	20/11/2024	20/11/2024		[NT]	[NT]
Date analysed	-			[NT]	6	21/11/2024	21/11/2024		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	6	5	6	18	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	6	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	6	5	5	0	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	6	2	4	67	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	6	10	11	10	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	6	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	6	2	4	67	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	6	29	20	37	[NT]	[NT]

QUALITY CONTROL: PFAS in Soils Short						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	[NT]
Date prepared	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Date analysed	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Perfluorobutanesulfonic acid	µg/kg	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	93	[NT]
Perfluorohexanesulfonic acid - PFHxS	µg/kg	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	92	[NT]
Perfluorooctanesulfonic acid PFOS	µg/kg	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	93	[NT]
Perfluorooctanoic acid PFOA	µg/kg	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	90	[NT]
6:2 FTS	µg/kg	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	89	[NT]
8:2 FTS	µg/kg	0.2	Org-029	<0.2	[NT]	[NT]	[NT]	[NT]	90	[NT]
Surrogate $^{13}C_8$ *PFOS*	%		Org-029	100	[NT]	[NT]	[NT]	[NT]	98	[NT]
Surrogate $^{13}C_2$ *PFOA*	%		Org-029	101	[NT]	[NT]	[NT]	[NT]	97	[NT]
Extracted ISTD $^{13}C_3$ *PFBS*	%		Org-029	103	[NT]	[NT]	[NT]	[NT]	102	[NT]
Extracted ISTD $^{18}O_2$ *PFHxS*	%		Org-029	103	[NT]	[NT]	[NT]	[NT]	103	[NT]
Extracted ISTD $^{13}C_4$ *PFOS*	%		Org-029	100	[NT]	[NT]	[NT]	[NT]	108	[NT]
Extracted ISTD $^{13}C_4$ *PFOA*	%		Org-029	105	[NT]	[NT]	[NT]	[NT]	108	[NT]
Extracted ISTD $^{13}C_2$ *6:2FTS*	%		Org-029	110	[NT]	[NT]	[NT]	[NT]	111	[NT]
Extracted ISTD $^{13}C_2$ *8:2FTS*	%		Org-029	121	[NT]	[NT]	[NT]	[NT]	116	[NT]

Result Definitions

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

Quality Control Definitions

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

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

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

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

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

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

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

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

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

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

Report Comments

Acid Extractable Metals in Soil:
- The laboratory RPD acceptance criteria has been exceeded for 366546-1 for Cu & Ni. Therefore a triplicate result has been issued as laboratory sample number 366546-19.

PAHs in Soil - The RPD for duplicate results is accepted due to the non homogenous nature of sample/s 366546-1,1d.

Asbestos-ID in soil: NEPM
This report is consistent with the reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013. This is reported outside our scope of NATA accreditation.

Factual description of asbestos identified in the soil samples: NEPM
Sample 366546-2; Chrysotile asbestos identified in 0.1946g of fibrous matted material
Sample 366546-9; Chrysotile asbestos identified in 0.0028g of loose fibre bundles

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DATA QUALITY ASSESSMENT SUMMARY

Report Details

Envirolab Report Reference	**366546**
Client ID	Senversa Pty Ltd
Project Reference	S22013, Mars Road DSI
Date Issued	25/11/2024

QC DATA

All laboratory QC data was within the Envirolab Group's specifications except:

QC Specification Exceptions

QC Type	Reference	Analysis	Comments
Precision (as %RPD)	366546-1	Benzo(a)pyrene	138% RPD fails internal acceptance criteria
Precision (as %RPD)	366546-1	Copper	93% RPD fails internal acceptance criteria
Precision (as %RPD)	366546-1	Fluoranthene	89% RPD fails internal acceptance criteria
Precision (as %RPD)	366546-1	Nickel	72% RPD fails internal acceptance criteria
Precision (as %RPD)	366546-1	Phenanthrene	55% RPD fails internal acceptance criteria
Precision (as %RPD)	366546-1	Pyrene	82% RPD fails internal acceptance criteria

See Report 366546-[R00] for QA/QC details

HOLDING TIME COMPLIANCE EVALUATION

All preservation / holding times (based on AS/ASPHA/ISO/NEPM/USEPA reference documents and standards) are compliant.

Certain analyses have had their recommended technical holding times elongated by filtering and/or freezing on receipt at the laboratory (e.g. BOD, chlorophyll/Pheophytin, nutrients and acid sulphate soil tests).

COMPLIANCE TO QC FREQUENCY (NEPM)

Internal laboratory QC rate complies with NEPM requirements (LCS/MB/MS 1 in 20, Duplicates 1 in 10 samples). Note, samples are batched together with other sample consignments in order to assign QC sample frequency.

QC Evaluation

Duplicate(s) was performed as per NEPM frequency	✓
Laboratory Control Sample(s) were analysed with the samples received	✓
A Method Blank was performed with the samples received	✓
Matrix spike(s) was performed as per NEPM frequency (Not Applicable for Air samples)	✓

Refer to Certificate of Analysis for all Quality Control data.

CoC Updated : 18/11/24, 1832

S22013 , Mars Road

	Sample Name	Lab Report	Comment	Date Time	Combo 1M	PFAS Shot Suite	BTEX	Combo 5AN	Combo 3	Combo 5	VOC	Asbestos ID	Asbestos NEPM	TCLP PFAS short suite	HOLD
1	BH26_0.1-0.35	366635	Sent this morning, yet to receive SRN	15/11/2024					X						
2	BH27_0.2-0.3	366635	Sent this morning, yet to receive SRN	15/11/2024					X						
3	PACM_04	366635	Incorrectly labelled PACM04, please update	15/11/2024								X			
4	PACM_05	366635	Incorrectly labelled PACM05, please update	15/11/2024								X			
5	QC304	366635	-	15/11/2024 0:00	X										

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 366635
Date Received: 18/11/24
Time Received: 1345
Received By: CH/SP
Temp: Cool/Ambient
Cooling: Ice/Icepack 4°C
Security: Intact/Broken/None

senversa

Chain of Custody Documentation

Senversa Pty Ltd
www.senversa.com.au
ABN 89 132 231 380

Laboratory: Envirolab
Address: 12 Ashley Rd Chatswood
Contact: Sample Receipt
Phone:

Job Number: S22013	Purchase Order:
Project Name: Mars Road	Quote No: 245X516V2
Sampled By: Lucas Dzalakowski	Turn Around Time: Standard
Project Manager: Zoe Smith	Page: 1 of 1
Email Report To: Zoe & Lucas	Phone/Mobile: 0488 211265

Sample Information					Container Information		Analysis Required											Comments: e.g. Highly contaminated sample; hazardous materials present; trace LORs etc.
Lab ID	Sample ID	Matrix *	Date	Time	Type / Code	Total Bottles	Combo 1 M	PFAS short Suite									HOLD	
1	BH26_01-035	S	15/11/24	PM													X	
2	BH27_02-03	↓	↓	↓													X	
3	PACM04	↓	↓	↓													X	
4	PACM05	↓	↓	↓													X	
5	QC304	W	↓	↓			X	X										
Total																		

Enviroplab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

ENVIROLAB

Job No: 366635
Date Received: 18/11/24
Time Received: 1345
Received By: CH
Temp: Cool/Ambient 4°C
Cooling: Ice/Icepack
Security: Intact/Broken/None

Sampler: I attest that proper field sampling procedures in accordance with Senversa standard procedures and/or project specifications were used during the collection of these samples:	Sampler Name: Lucas Dzalakowski	Signature:	Date: 15/11/24

Relinquished By:		Method of Shipment (if applicable):	Received by:	
Name/Signature: Zoe Smith	Date: 18/11/24	Carrier / Reference #:	Name/Signature: Christine Lo	Date: 18/11/24
Of: Senversa	Time: 10:30	Date/Time:	Of: ECS SYD	Time: 1345.
Name/Signature:	Date:	Carrier / Reference #:	Name/Signature:	Date:
Of:	Time:	Date/Time:	Of:	Time:
Name/Signature:	Date:	Carrier / Reference #:	Name/Signature:	Date:
Of:	Time:	Date/Time:	Of:	Time:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Acid (HNO_3) Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide (NaOH)/Cadmium (Cd) Preserved; S = Sodium Hydroxide Preserved Plastic; STH = Sodium thiosulfate preserved plastic; V = VOA Vial Hydochloric Acid (HCl) Preserved; VS = VOA Vial Sulphuric Preserved; VSA = Sulphuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation Bottle; SP = Sulphuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; UA = Unpreserved Amber Glass; L=Lugol's Iodine preserved white plastic bottle; SW= sulfuric acid preserved wide mouth glass jar

Completed by: _____
Checked by: _____

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	Senversa Pty Ltd
Attention	Zoe Smith

Sample Login Details

Your reference	S22013, Mars Road
Envirolab Reference	366635
Date Sample Received	18/11/2024
Date Instructions Received	18/11/2024
Date Results Expected to be Reported	25/11/2024

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	2 Soil, 2 Material, 1 Water
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	4
Cooling Method	Ice
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
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Sample ID	vTRH(C6-C10)/BTEXN in Water	svTRH (C10-C40) in Water	HM in water - dissolved	PFAS in Waters Short	On Hold
BH26_0.1-0.35					✓
BH27_0.2-0.3					✓
PACM04					✓
PACM05					✓
QC304	✓	✓	✓	✓	

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.

Envirolab Services Pty Ltd
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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 366635

Client Details

Client	Senversa Pty Ltd
Attention	Zoe Smith
Address	6/15 William St, Melbourne, VIC, 3000

Sample Details

Your Reference	**S22013, Mars Road**
Number of Samples	2 Soil, 2 Material, 1 Water
Date samples received	18/11/2024
Date completed instructions received	18/11/2024

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.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	25/11/2024
Date of Issue	25/11/2024

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

Asbestos Approved By
Analysed by Asbestos Approved Analyst: Lucy Zhu
Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By
Dragana Tomas, Senior Chemist
Giovanni Agosti, Group Technical Manager
Jack Wallis, Senior Chemist
Lucy Zhu, Asbestos Supervisor
Sean McAlary, Senior Chemist
Timothy Toll, Senior Chemist

Authorised By
Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil			
Our Reference		366635-1	366635-2
Your Reference	UNITS	BH26_0.1-0.35	BH27_0.2-0.3
Date Sampled		15/11/2024	15/11/2024
Type of sample		Soil	Soil
Date extracted	-	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024
TRH C_6 - C_9	mg/kg	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25
vTRH 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	<1	<1
Surrogate aaa-Trifluorotoluene	%	108	107

svTRH (C10-C40) in Soil			
Our Reference		366635-1	366635-2
Your Reference	UNITS	BH26_0.1-0.35	BH27_0.2-0.3
Date Sampled		15/11/2024	15/11/2024
Type of sample		Soil	Soil
Date extracted	-	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024
TRH C_{10} - C_{14}	mg/kg	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	680
TRH C_{29} - C_{36}	mg/kg	<100	470
Total +ve TRH (C10-C36)	mg/kg	<50	1,100
TRH >C_{10} -C_{16}	mg/kg	<50	53
TRH >C_{10} -C_{16} less Naphthalene (F2)	mg/kg	<50	53
TRH >C_{16} -C_{34}	mg/kg	<100	1,000
TRH >C_{34} -C_{40}	mg/kg	<100	250
Total +ve TRH (>C10-C40)	mg/kg	<50	1,300
Surrogate o-Terphenyl	%	89	129

PAHs in Soil			
Our Reference		366635-1	366635-2
Your Reference	UNITS	BH26_0.1-0.35	BH27_0.2-0.3
Date Sampled		15/11/2024	15/11/2024
Type of sample		Soil	Soil
Date extracted	-	20/11/2024	20/11/2024
Date analysed	-	25/11/2024	25/11/2024
Naphthalene	mg/kg	<0.1	0.4
Acenaphthylene	mg/kg	0.1	1.9
Acenaphthene	mg/kg	<0.1	0.3
Fluorene	mg/kg	<0.1	0.7
Phenanthrene	mg/kg	0.7	6.3
Anthracene	mg/kg	0.2	2.4
Fluoranthene	mg/kg	1.4	11
Pyrene	mg/kg	1.4	12
Benzo(a)anthracene	mg/kg	0.8	6.4
Chrysene	mg/kg	0.7	5.6
Benzo(b,j+k)fluoranthene	mg/kg	1	9.2
Benzo(a)pyrene	mg/kg	0.81	6.5
Indeno(1,2,3-c,d)pyrene	mg/kg	0.4	2.6
Dibenzo(a,h)anthracene	mg/kg	0.1	0.9
Benzo(g,h,i)perylene	mg/kg	0.4	3.2
Total +ve PAH's	mg/kg	8.4	70
Benzo(a)pyrene TEQ calc (zero)	mg/kg	1.2	9.3
Benzo(a)pyrene TEQ calc(half)	mg/kg	1.2	9.3
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	1.2	9.3
Surrogate p-Terphenyl-d14	%	107	93

Acid Extractable metals in soil			
Our Reference		366635-1	366635-2
Your Reference	UNITS	BH26_0.1-0.35	BH27_0.2-0.3
Date Sampled		15/11/2024	15/11/2024
Type of sample		Soil	Soil
Date prepared	-	20/11/2024	20/11/2024
Date analysed	-	22/11/2024	22/11/2024
Arsenic	mg/kg	<4	4
Cadmium	mg/kg	<0.4	<0.4
Chromium	mg/kg	7	11
Copper	mg/kg	11	16
Lead	mg/kg	180	390
Mercury	mg/kg	<0.1	0.1
Nickel	mg/kg	1	4
Zinc	mg/kg	97	150

Moisture			
Our Reference		366635-1	366635-2
Your Reference	UNITS	BH26_0.1-0.35	BH27_0.2-0.3
Date Sampled		15/11/2024	15/11/2024
Type of sample		Soil	Soil
Date prepared	-	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024
Moisture	%	4.0	9.6

Asbestos ID - materials			
Our Reference		366635-3	366635-4
Your Reference	UNITS	PACM_04	PACM_05
Date Sampled		15/11/2024	15/11/2024
Type of sample		Material	Material
Date analysed	-	19/11/2024	19/11/2024
Mass / Dimension of Sample	-	60x27x5mm	68x45x3mm
Sample Description	-	Grey fibre cement material	Grey cement-like material
Asbestos ID in materials	-	Chrysotile asbestos detected Amosite asbestos detected	No asbestos detected Organic fibres detected
Trace Analysis	-	[NT]	No asbestos detected

vTRH(C6-C10)/BTEXN in Water		
Our Reference	UNITS	366635-5
Your Reference		QC304
Date Sampled		15/11/2024
Type of sample		Water
Date extracted	-	19/11/2024
Date analysed	-	20/11/2024
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	%	97
Surrogate Toluene-d8	%	100
Surrogate 4-Bromofluorobenzene	%	112

svTRH (C10-C40) in Water		
Our Reference	UNITS	366635-5
Your Reference		QC304
Date Sampled		15/11/2024
Type of sample		Water
Date extracted	-	19/11/2024
Date analysed	-	20/11/2024
TRH C_{10} - C_{14}	µg/L	<50
TRH C_{15} - C_{28}	µg/L	<100
TRH C_{29} - C_{36}	µg/L	<100
Total +ve TRH (C10-C36)	µg/L	<50
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
Total +ve TRH (>C10-C40)	µg/L	<50
Surrogate o-Terphenyl	%	81

HM in water - dissolved		
Our Reference		366635-5
Your Reference	UNITS	QC304
Date Sampled		15/11/2024
Type of sample		Water
Date prepared	-	19/11/2024
Date analysed	-	19/11/2024
Arsenic-Dissolved	µg/L	<1
Cadmium-Dissolved	µg/L	<0.1
Chromium-Dissolved	µg/L	<1
Copper-Dissolved	µg/L	<1
Lead-Dissolved	µg/L	<1
Mercury-Dissolved	µg/L	<0.05
Nickel-Dissolved	µg/L	<1
Zinc-Dissolved	µg/L	<1

PFAS in Waters Short		
Our Reference		366635-5
Your Reference	UNITS	QC304
Date Sampled		15/11/2024
Type of sample		Water
Date prepared	-	19/11/2024
Date analysed	-	19/11/2024
Perfluorobutanesulfonic acid	µg/L	<0.01
Perfluorohexanesulfonic acid - PFHxS	µg/L	<0.01
Perfluorooctanesulfonic acid PFOS	µg/L	<0.01
Perfluorooctanoic acid PFOA	µg/L	<0.01
6:2 FTS	µg/L	<0.01
8:2 FTS	µg/L	<0.02
Surrogate $^{13}C_8$ *PFOS*	%	100
Surrogate $^{13}C_2$ *PFOA*	%	105
Extracted ISTD $^{13}C_3$ *PFBS*	%	108
Extracted ISTD $^{18}O_2$ *PFHxS*	%	108
Extracted ISTD $^{13}C_4$ *PFOS*	%	102
Extracted ISTD $^{13}C_4$ *PFOA*	%	99
Extracted ISTD $^{13}C_2$ *6:2FTS*	%	85
Extracted ISTD $^{13}C_2$ *8:2FTS*	%	91
Total Positive PFHxS & PFOS	µg/L	<0.01
Total Positive PFOA & PFOS	µg/L	<0.01
Total Positive PFAS	µg/L	<0.01

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
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.
Metals-022	Determination of various metals by ICP-MS. Please note for Bromine and Iodine, any forms of these elements that are present are included together in the one result reported for each of these two elements. Salt forms (e.g. FeO, PbO, ZnO) are determined stoichiometrically from the base metal concentration.
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).

Method ID	Methodology Summary
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	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.
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.
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.
Org-029	Soil samples are extracted with basified Methanol. Waters and soil extracts are directly injected and/or concentrated/extracted using SPE. TCLPs/ASLP leachates are centrifuged, the supernatant is then analysed (including amendment with solvent) - as per the option in AS4439.3. Analysis is undertaken with LC-MS/MS. PFAS results include the sum of branched and linear isomers where applicable. Please note that PFAS results are corrected for Extracted Internal Standards (QSM 5.4 Table B-15 terminology), which are mass labelled analytes added prior to sample preparation to assess matrix effects and verify processing of the sample. PFAS analytes without a commercially available mass labelled analogue are corrected vs a closely eluting mass labelled PFAS compound. Surrogates are also reported, in this context they are mass labelled PFAS compounds added prior to extraction but are used as monitoring compounds only (not used for result correction). Envicarb (or similar) is used discretionally to remove interfering matrix components. Please contact the laboratory if estimates of Measurement Uncertainty are required as per WA DER.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-7	[NT]
Date extracted	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Date analysed	-			21/11/2024	[NT]	[NT]	[NT]	[NT]	21/11/2024	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	116	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	116	[NT]
Benzene	mg/kg	0.2	Org-023	<0.2	[NT]	[NT]	[NT]	[NT]	114	[NT]
Toluene	mg/kg	0.5	Org-023	<0.5	[NT]	[NT]	[NT]	[NT]	115	[NT]
Ethylbenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	116	[NT]
m+p-xylene	mg/kg	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	117	[NT]
o-Xylene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	118	[NT]
Naphthalene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	109	[NT]	[NT]	[NT]	[NT]	105	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	[NT]
Date extracted	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Date analysed	-			21/11/2024	[NT]	[NT]	[NT]	[NT]	21/11/2024	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	90	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	91	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	86	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	90	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	91	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	86	[NT]
Surrogate o-Terphenyl	%		Org-020	88	[NT]	[NT]	[NT]	[NT]	88	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	[NT]
Date extracted	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Date analysed	-			25/11/2024	[NT]	[NT]	[NT]	[NT]	25/11/2024	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	78	[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]	86	[NT]
Fluorene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	80	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	80	[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]	78	[NT]
Pyrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	80	[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]	80	[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]	72	[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	106	[NT]	[NT]	[NT]	[NT]	108	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-6	[NT]
Date prepared	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Date analysed	-			22/11/2024	[NT]	[NT]	[NT]	[NT]	22/11/2024	[NT]
Arsenic	mg/kg	4	Metals-020	<4	[NT]	[NT]	[NT]	[NT]	120	[NT]
Cadmium	mg/kg	0.4	Metals-020	<0.4	[NT]	[NT]	[NT]	[NT]	103	[NT]
Chromium	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	109	[NT]
Copper	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	103	[NT]
Lead	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	105	[NT]
Mercury	mg/kg	0.1	Metals-021	<0.1	[NT]	[NT]	[NT]	[NT]	86	[NT]
Nickel	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	107	[NT]
Zinc	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	107	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W4	[NT]
Date extracted	-			19/11/2024	[NT]	[NT]	[NT]	[NT]	19/11/2024	[NT]
Date analysed	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
TRH C_6 - C_9	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	92	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	92	[NT]
Benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	89	[NT]
Toluene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	90	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	95	[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]	96	[NT]
Naphthalene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	93	[NT]	[NT]	[NT]	[NT]	97	[NT]
Surrogate Toluene-d8	%		Org-023	99	[NT]	[NT]	[NT]	[NT]	100	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-023	100	[NT]	[NT]	[NT]	[NT]	108	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			19/11/2024	[NT]	[NT]	[NT]	[NT]	19/11/2024	[NT]
Date analysed	-			19/11/2024	[NT]	[NT]	[NT]	[NT]	19/11/2024	[NT]
TRH C_{10} - C_{14}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	112	[NT]
TRH C_{15} - C_{28}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	108	[NT]
TRH C_{29} - C_{36}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	100	[NT]
TRH >C_{10} - C_{16}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	112	[NT]
TRH >C_{16} - C_{34}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	108	[NT]
TRH >C_{34} - C_{40}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	100	[NT]
Surrogate o-Terphenyl	%		Org-020	80	[NT]	[NT]	[NT]	[NT]	108	[NT]

QUALITY CONTROL: HM in water - dissolved						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W3	[NT]
Date prepared	-			21/11/2024	[NT]	[NT]	[NT]	[NT]	19/11/2024	[NT]
Date analysed	-			21/11/2024	[NT]	[NT]	[NT]	[NT]	19/11/2024	[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]	95	[NT]
Chromium-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	84	[NT]
Copper-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	87	[NT]
Lead-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	95	[NT]
Mercury-Dissolved	µg/L	0.05	Metals-021	<0.05	[NT]	[NT]	[NT]	[NT]	107	[NT]
Nickel-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	88	[NT]
Zinc-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	[NT]	[NT]	94	[NT]

QUALITY CONTROL: PFAS in Waters Short					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			19/11/2024	[NT]	[NT]	[NT]	[NT]	19/11/2024	[NT]
Date analysed	-			19/11/2024	[NT]	[NT]	[NT]	[NT]	19/11/2024	[NT]
Perfluorobutanesulfonic acid	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	102	[NT]
Perfluorohexanesulfonic acid - PFHxS	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	97	[NT]
Perfluorooctanesulfonic acid PFOS	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	103	[NT]
Perfluorooctanoic acid PFOA	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	101	[NT]
6:2 FTS	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	93	[NT]
8:2 FTS	µg/L	0.02	Org-029	<0.02	[NT]	[NT]	[NT]	[NT]	97	[NT]
Surrogate $^{13}C_8$ *PFOS*	%		Org-029	102	[NT]	[NT]	[NT]	[NT]	99	[NT]
Surrogate $^{13}C_2$ *PFOA*	%		Org-029	99	[NT]	[NT]	[NT]	[NT]	101	[NT]
Extracted ISTD $^{13}C_3$ *PFBS*	%		Org-029	102	[NT]	[NT]	[NT]	[NT]	101	[NT]
Extracted ISTD $^{18}O_2$ *PFHxS*	%		Org-029	110	[NT]	[NT]	[NT]	[NT]	114	[NT]
Extracted ISTD $^{13}C_4$ *PFOS*	%		Org-029	103	[NT]	[NT]	[NT]	[NT]	104	[NT]
Extracted ISTD $^{13}C_4$ *PFOA*	%		Org-029	103	[NT]	[NT]	[NT]	[NT]	103	[NT]
Extracted ISTD $^{13}C_2$ *6:2FTS*	%		Org-029	106	[NT]	[NT]	[NT]	[NT]	108	[NT]
Extracted ISTD $^{13}C_2$ *8:2FTS*	%		Org-029	107	[NT]	[NT]	[NT]	[NT]	104	[NT]

Result Definitions

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

Quality Control Definitions

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

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

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

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

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

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

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

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

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

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

Report Comments

Dissolved Metals: no filtered, preserved sample was received, therefore the unpreserved sample was filtered through 0.45µm filter at the lab.
Note: there is a possibility some elements may be underestimated.

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

DATA QUALITY ASSESSMENT SUMMARY

Report Details

Envirolab Report Reference	**366635**
Client ID	Senversa Pty Ltd
Project Reference	S22013, Mars Road
Date Issued	25/11/2024

QC DATA

All laboratory QC data was within the Envirolab Group's specifications.

HOLDING TIME COMPLIANCE EVALUATION

All preservation / holding times (based on AS/ASPHA/ISO/NEPM/USEPA reference documents and standards) are compliant.

Certain analyses have had their recommended technical holding times elongated by filtering and/or freezing on receipt at the laboratory (e.g. BOD, chlorophyll/Pheophytin, nutrients and acid sulphate soil tests).

COMPLIANCE TO QC FREQUENCY (NEPM)

Internal laboratory QC rate complies with NEPM requirements (LCS/MB/MS 1 in 20, Duplicates 1 in 10 samples). Note, samples are batched together with other sample consignments in order to assign QC sample frequency.

QC Evaluation

Duplicate(s) was performed as per NEPM frequency	✓
Laboratory Control Sample(s) were analysed with the samples received	✓
A Method Blank was performed with the samples received	✓
Matrix spike(s) was performed as per NEPM frequency (Not Applicable for Air samples)	✓

Refer to Certificate of Analysis for all Quality Control data.

Environmental Division
Sydney
Work Order Reference
ES2437730

senversa

Senversa Pty Ltd
www.senversa.com.au
ABN 89 132 231 380

Chain of Custody Documentation

Laboratory: ALS
Address:
Contact: Sample Receipt
Phone:

Telephone : + 61-2-8784 8555

Job Number: 822013	Purchase Order:
Project Name: Mars Road DSI	Quote No: 24545162
Sampled By: LD	Turn Around Time:
Project Manager: Zoe Smith	Page: 1 of 1
Email Report To: zoe.smith@senversa.com.au	Phone/Mobile: 0431 654 335

Sample Information					Container Information		Analysis											
Lab ID	Sample ID	Matrix *	Date	Time	Type / Code	Total Bottles										HOLD		
1	QC201	SOIL	15/11/24	PM	JAR/PTB	x2										X		
2	QC202					x1										X		
3	QC203					x2										X		
4	QC204					x1										X		
5	QC205					x2										X		
6	QC503					x1												TB PFAS
7	QC102					x1												TS
Total																		

minated
present; trace

Sampler: I attest that proper field sampling procedures in accordance with Senversa standard procedures and/or project specifications were used during the collection of these samples:	Sampler Name: Lucas Dziadkowski	Signature:	Date: 15 / 11 / 24

Relinquished By:		Method of Shipment (if applicable):	Received by:	
Name/Signature: Lucas Dziadkowski	Date: 15/11/24	Carrier / Reference #:	Name/Signature: Wills	Date: 15/11/24
Of:	Time:	Date/Time:	Of: ALS	Time: 1548
Name/Signature:	Date:	Carrier / Reference #:	Name/Signature:	Date:
Of:	Time:	Date/Time:	Of:	Time:
Name/Signature:	Date:	Carrier / Reference #:	Name/Signature:	Date:
Of:	Time:	Date/Time:	Of:	Time:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Acid (HNO_3) Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide (NaOH)/Cadmium (Cd) Preserved; S = Sodium Hydroxide Preserved Plastic; STH = Sodium thiosulfate preserved plastic; V = VOA Vial Hydochloric Acid (HCl) Preserved; VS = VOA Vial Sulphuric Preserved; VSA = Sulphuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation Bottle; SP = Sulphuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; UA = Unpreserved Amber Glass; L=Lugol's iodine preserved white plastic bottle; SW= sulfuric acid preserved wide mouth glass jar

Andrew Makar

From: Fadi Soro on behalf of Samples Sydney
Sent: Wednesday, 20 November 2024 3:00 PM
To: Andrew Makar
Cc: Andrew Wotherspoon; Jack Clifton
Subject: FW: [EXTERNAL] - RE: 22013 - SRN and requested analysis

Follow Up Flag: Follow up
Flag Status: Flagged

2:34pm

Andrew
20/11/24

Hey Andrew,

Please see below updated analysis for WO ES2437730

Kind Regards,

right solutions. right partner.

Fadi Soro
Sample Receipt Supervisor, Environmental
Sydney, NSW

O: +61 2 8784 8555
D: +61 2 8784 8536
fadi.soro@alsglobal.com
277-289 Woodpark Road
Smithfield NSW 2164 AUSTRALIA

alsglobal.com

From: Andrew Wotherspoon <andrew.wotherspoon@ALSGlobal.com>
Sent: Wednesday, November 20, 2024 2:39 PM
To: Samples Sydney <Samples.Sydney@alsglobal.com>
Cc: Jack Clifton <jack.clifton@ALSGlobal.com>
Subject: FW: [EXTERNAL] - RE: 22013 - SRN and requested analysis

Hi team,

Could I please grab some assistance with this query from Zoe –

I understand that Lucas sent a batch samples for project S22013 Mars Road to the lab last week, we are yet to receive an SRN for this WO. These samples were placed on hold, however, can you please undertake the following analysis on standard TAT on these samples.

Sample Name	*Lab Report*	*Date Time*	*PFAS Shot Suite*	*S-26*	*HOLD*

1	QC201	Unconfirmed	13/11/2024 0:00	X	X	
2	QC202	Unconfirmed	14/11/2024 0:00			X
3	QC203	Unconfirmed	14/11/2024 0:00		X	
4	QC204	Unconfirmed	14/11/2024 0:00			X
5	QC205	Unconfirmed	15/11/2024 0:00		X	

Could I please confirm if we have the above samples for this Senversa batch?

Thank you in advance!

Kind Regards,

Andrew Wotherspoon
Client Services Officer, Environmental
Sydney, NSW

O: +61 2 8784 8555
D: +61 2 8784 8514
andrew.wotherspoon@alsglobal.com
277-289 Woodpark Road
Smithfield NSW 2164 AUSTRALIA

alsglobal.com



EnviroMail 93 Australia Re-release – Laboratory quality assurance/quality control
EnviroMail 148 Australia – Interpreting TOP Assay
EnviroMail 149 Australia - Net Zero commitments and roadmap
EnviroMail 150 Australia - Spotlight on emerging contaminants - Triclosan
EnviroMail 151 Australia - Expanding the scope of PFAS analysis in soils and waters
EnviroMail 152 Australia – Analysing Air & Gas with Canisters

From: Zoe Smith <Zoe.Smith@senversa.com.au>
Sent: Wednesday, November 20, 2024 2:31 PM
To: ALSEnviro Sydney <ALSEnviro.Sydney@ALSGlobal.com>; Andrew Wotherspoon <andrew.wotherspoon@ALSGlobal.com>
Cc: Lucas Dzalakowski <Lucas.Dzalakowski@senversa.com.au>
Subject: [EXTERNAL] - RE: 22013 - SRN and requested analysis

CAUTION: This email originated from outside of ALS. Do not click links or open attachments unless you recognize the sender and are sure content is relevant to you.

Hi Andrew,

I am following up on the email below. We have not received an SRN for this workorder. Can you please assist in following up the request below.

Many thanks,
Zoe

Zoe Smith (she/her)
Senior Associate Environmental Scientist
M: +61 488 211 265
www.senversa.com.au
Level 24, 1 Market St,
Djubuguli, Eora Country
Sydney, NSW, 2000, Australia

From: Zoe Smith
Sent: Monday, 18 November 2024 6:38 PM
To: ALSEnviro Sydney <ALSEnviro.Sydney@ALSGlobal.com>
Cc: Lucas Dzalakowski <Lucas.Dzalakowski@senversa.com.au>
Subject: 22013 - SRN and requested analysis

Good evening,

I understand that Lucas sent a batch samples for project S22013 Mars Road to the lab last week, we are yet to receive an SRN for this WO. These samples were placed on hold, however, can you please undertake the following analysis on standard TAT on these samples.

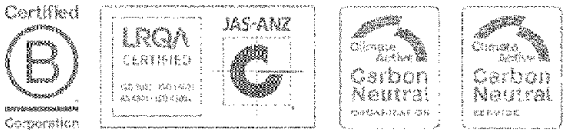
Sample Name	Lab Report	Date Time	PFAS Shot Suite	S-26	HOLD
QC201	Unconfirmed	13/11/2024 0:00	X	X	
QC202	Unconfirmed	14/11/2024 0:00			X
QC203	Unconfirmed	14/11/2024 0:00		X	
QC204	Unconfirmed	14/11/2024 0:00			X
QC205	Unconfirmed	15/11/2024 0:00		X	

Many thanks,
Zoe

Zoe Smith (she/her)
Senior Associate Environmental Scientist
M: +61 488 211 265
E: Zoe.Smith@senversa.com.au
www.senversa.com.au
Level 24, 1 Market St,
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Senversa acknowledges the traditional custodians of the lands and waters upon which we conduct our work, and pay our respect to the Elders, past, present and those to come


Certified
B
Corporation
LRQA
CERTIFIED
JAS-ANZ
Climate Active
Carbon Neutral
Climate Active
Carbon Neutral

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2437730**

Client	: **SENVERSA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: Zoe Smith	Contact	: Andrew Wotherspoon
Address	: Level 24, 1 Market St, SYDNEY NSW 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: Zoe.Smith@senversa.com.au	E-mail	: andrew.wotherspoon@alsglobal.com
Telephone	: 02 8252 0000	Telephone	: +61-2-8784 8555
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: S22013 Mars Road DSI	Page	: 1 of 2
Order number	: ----	Quote number	: EB2023SENVER0001 (EN/000)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: Lucas Dzalakowski		

Dates

Date Samples Received	: 15-Nov-2024 15:48	Issue Date	: 21-Nov-2024
Client Requested Due Date	: 27-Nov-2024	Scheduled Reporting Date	: **27-Nov-2024**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: 7.0'C, 6.5'C & 6.2'C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 7 / 3

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- 21/11/2024 - This is an updated SRN which indicates the new scheduled release date for this work order.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Volatile organic compound analysis may be compromised as sample containers 1 and 5 contained headspace. Please contact ALS for further information.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Unless otherwise stated, analytical work for this work order will be conducted at ALS Sydney, NATA accreditation no. 825, site no. 10911.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Samples have been placed on hold as per COC
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	(On Hold) SOIL No analysis requested	SOIL - EA055-103 Moisture Content	SOIL - EP231 (solids) PFAS - Short Suite (12 analytes)	SOIL - S-26 8 metals/TRH/BTEXN/PAH
ES2437730-001	13-Nov-2024 00:00	QC201		✓	✓	✓
ES2437730-002	14-Nov-2024 00:00	QC202	✓			
ES2437730-003	14-Nov-2024 00:00	QC203		✓		✓
ES2437730-004	14-Nov-2024 00:00	QC204	✓			
ES2437730-005	15-Nov-2024 00:00	QC205		✓		✓
ES2437730-006	15-Nov-2024 00:00	QC508	✓			
ES2437730-007	15-Nov-2024 00:00	QC404	✓			

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

SUPPLIER ACCOUNTS

- A4 - AU Tax Invoice (INV)	Email	supplieraccounts@senversa.com.au

Zoe Smith

- *AU Certificate of Analysis - NATA (COA)	Email	Zoe.Smith@senversa.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	Zoe.Smith@senversa.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	Zoe.Smith@senversa.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	Zoe.Smith@senversa.com.au
- A4 - AU Tax Invoice (INV)	Email	Zoe.Smith@senversa.com.au
- Chain of Custody (CoC) (COC)	Email	Zoe.Smith@senversa.com.au
- EDI Format - ESDAT (ESDAT)	Email	Zoe.Smith@senversa.com.au

CERTIFICATE OF ANALYSIS

Work Order	: **ES2437730**	Page	: 1 of 7
Client	: **SENVERSA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: Zoe Smith	Contact	: Andrew Wotherspoon
Address	: Level 24, 1 Market St, SYDNEY NSW 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: 02 8252 0000	Telephone	: +61-2-8784 8555
Project	: S22013 Mars Road DSI	Date Samples Received	: 15-Nov-2024 15:48
Order number	: ----	Date Analysis Commenced	: 21-Nov-2024
C-O-C number	: ----	Issue Date	: 26-Nov-2024 17:27
Sampler	: Lucas Dzalakowski		
Site	: ----		
Quote number	: EN/000		
No. of samples received	: 7		
No. of samples analysed	: 3		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration or as per USEPA 1633 limits where LISTED. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS and also conform to QSM 5.4 (US DoD) requirements.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	QC201	QC203	QC205	----	----
				Sampling date / time	13-Nov-2024 00:00	14-Nov-2024 00:00	15-Nov-2024 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2437730-001	ES2437730-003	ES2437730-005	--------	--------
					Result	Result	Result	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		**18.7**	**17.4**	**23.1**	----	----
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	**7**	<5	----	----
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	----	----
Chromium	7440-47-3	2	mg/kg		**15**	**24**	**4**	----	----
Copper	7440-50-8	5	mg/kg		**9**	<5	<5	----	----
Lead	7439-92-1	5	mg/kg		**20**	**10**	**10**	----	----
Nickel	7440-02-0	2	mg/kg		**10**	<2	**2**	----	----
Zinc	7440-66-6	5	mg/kg		**28**	<5	**19**	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	QC201	QC203	QC205	----	----
				Sampling date / time	13-Nov-2024 00:00	14-Nov-2024 00:00	15-Nov-2024 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2437730-001	ES2437730-003	ES2437730-005	--------	--------
					Result	Result	Result	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
^ **Benzo(a)pyrene TEQ (zero)**	----	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
^ **Benzo(a)pyrene TEQ (half LOR)**	----	0.5	mg/kg		**0.6**	**0.6**	**0.6**	----	----
^ **Benzo(a)pyrene TEQ (LOR)**	----	0.5	mg/kg		**1.2**	**1.2**	**1.2**	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	----	----
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	----	----
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	----	----
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	----	----
^ **C10 - C36 Fraction (sum)**	----	50	mg/kg		<50	<50	<50	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	10	mg/kg		<10	<10	<10	----	----
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	----	----
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	----	----
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	----	----
^ **>C10 - C40 Fraction (sum)**	----	50	mg/kg		<50	<50	<50	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	50	mg/kg		<50	<50	<50	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	<0.2	<0.2	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	QC201	QC203	QC205	----	----
				Sampling date / time	13-Nov-2024 00:00	14-Nov-2024 00:00	15-Nov-2024 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2437730-001	ES2437730-003	ES2437730-005	--------	--------
					Result	Result	Result	----	----
EP080: BTEXN - Continued									
^ **Total Xylenes**	----	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0021**	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	----	----	----	----
EP231P: PFAS Sums									
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0021**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0021**	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**82.0**	**82.4**	**80.7**	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		**85.0**	**95.0**	**84.6**	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	QC201	QC203	QC205	----	----
				Sampling date / time	13-Nov-2024 00:00	14-Nov-2024 00:00	15-Nov-2024 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2437730-001	ES2437730-003	ES2437730-005	--------	--------
					Result	Result	Result	----	----
EP075(SIM)S: Phenolic Compound Surrogates - Continued									
2.4.6-Tribromophenol	118-79-6	0.5	%		51.4	48.8	62.8	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		82.2	81.3	80.6	----	----
Anthracene-d10	1719-06-8	0.5	%		90.0	86.9	88.8	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		82.0	81.0	82.0	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		81.7	108	99.6	----	----
Toluene-D8	2037-26-5	0.2	%		77.6	106	99.2	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		82.0	110	105	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		108	----	----	----	----
13C8-PFOA	----	0.0002	%		110	----	----	----	----

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2.4.6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	63	125
Toluene-D8	2037-26-5	67	124
4-Bromofluorobenzene	460-00-4	66	131
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2437730**	Page	: 1 of 6
Client	: **SENVERSA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: Zoe Smith	Telephone	: +61-2-8784 8555
Project	: S22013 Mars Road DSI	Date Samples Received	: 15-Nov-2024
Site	: ----	Issue Date	: 26-Nov-2024
Sampler	: Lucas Dzalakowski	No. of samples received	: 7
Order number	: ----	No. of samples analysed	: 3

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, where applicable to the methodology, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055) QC201	**13-Nov-2024**	**----**	----	----	**21-Nov-2024**	27-Nov-2024	✓
Soil Glass Jar - Unpreserved (EA055) QC203	**14-Nov-2024**	**----**	----	----	**21-Nov-2024**	28-Nov-2024	✓
Soil Glass Jar - Unpreserved (EA055) QC205	**15-Nov-2024**	**----**	----	----	**21-Nov-2024**	29-Nov-2024	✓
EG005(ED093)T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T) QC201	**13-Nov-2024**	**21-Nov-2024**	12-May-2025	✓	**22-Nov-2024**	12-May-2025	✓
Soil Glass Jar - Unpreserved (EG005T) QC203	**14-Nov-2024**	**21-Nov-2024**	13-May-2025	✓	**22-Nov-2024**	13-May-2025	✓
Soil Glass Jar - Unpreserved (EG005T) QC205	**15-Nov-2024**	**21-Nov-2024**	14-May-2025	✓	**22-Nov-2024**	14-May-2025	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T) QC201	**13-Nov-2024**	**21-Nov-2024**	11-Dec-2024	✓	**23-Nov-2024**	11-Dec-2024	✓
Soil Glass Jar - Unpreserved (EG035T) QC203	**14-Nov-2024**	**21-Nov-2024**	12-Dec-2024	✓	**23-Nov-2024**	12-Dec-2024	✓
Soil Glass Jar - Unpreserved (EG035T) QC205	**15-Nov-2024**	**21-Nov-2024**	13-Dec-2024	✓	**23-Nov-2024**	13-Dec-2024	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM)) QC201	**13-Nov-2024**	**21-Nov-2024**	27-Nov-2024	✓	**21-Nov-2024**	31-Dec-2024	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) QC203	**14-Nov-2024**	**21-Nov-2024**	28-Nov-2024	✓	**21-Nov-2024**	31-Dec-2024	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) QC205	**15-Nov-2024**	**21-Nov-2024**	29-Nov-2024	✓	**21-Nov-2024**	31-Dec-2024	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080) QC201	**13-Nov-2024**	**21-Nov-2024**	27-Nov-2024	✓	**22-Nov-2024**	27-Nov-2024	✓
Soil Glass Jar - Unpreserved (EP080) QC203	**14-Nov-2024**	**21-Nov-2024**	28-Nov-2024	✓	**22-Nov-2024**	28-Nov-2024	✓
Soil Glass Jar - Unpreserved (EP080) QC205	**15-Nov-2024**	**21-Nov-2024**	29-Nov-2024	✓	**22-Nov-2024**	29-Nov-2024	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP080) QC201	**13-Nov-2024**	**21-Nov-2024**	27-Nov-2024	✓	**22-Nov-2024**	27-Nov-2024	✓
Soil Glass Jar - Unpreserved (EP080) QC203	**14-Nov-2024**	**21-Nov-2024**	28-Nov-2024	✓	**22-Nov-2024**	28-Nov-2024	✓
Soil Glass Jar - Unpreserved (EP080) QC205	**15-Nov-2024**	**21-Nov-2024**	29-Nov-2024	✓	**22-Nov-2024**	29-Nov-2024	✓
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080) QC201	**13-Nov-2024**	**21-Nov-2024**	27-Nov-2024	✓	**22-Nov-2024**	27-Nov-2024	✓
Soil Glass Jar - Unpreserved (EP080) QC203	**14-Nov-2024**	**21-Nov-2024**	28-Nov-2024	✓	**22-Nov-2024**	28-Nov-2024	✓
Soil Glass Jar - Unpreserved (EP080) QC205	**15-Nov-2024**	**21-Nov-2024**	29-Nov-2024	✓	**22-Nov-2024**	29-Nov-2024	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE Soil Jar (EP231X) QC201	**13-Nov-2024**	**21-Nov-2024**	12-May-2025	✓	**26-Nov-2024**	31-Dec-2024	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE Soil Jar (EP231X) QC201	**13-Nov-2024**	**21-Nov-2024**	12-May-2025	✓	**26-Nov-2024**	31-Dec-2024	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE Soil Jar (EP231X) QC201	**13-Nov-2024**	**21-Nov-2024**	12-May-2025	✓	**26-Nov-2024**	31-Dec-2024	✓
EP231P: PFAS Sums							
HDPE Soil Jar (EP231X) QC201	**13-Nov-2024**	**21-Nov-2024**	12-May-2025	✓	**26-Nov-2024**	31-Dec-2024	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	1	3	**33.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	1	6	**16.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	10	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	3	**33.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	3	**33.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	6	**16.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	13	**15.38**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3)
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015 Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM Schedule B(3).
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270. Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM Schedule B(3) amended.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.4, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

Preparation Methods	*Method*	*Matrix*	*Method Descriptions*
QuECheRS Extraction of Solids	ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.

QUALITY CONTROL REPORT

Work Order	: **ES2437730**	Page	: 1 of 8
Client	: **SENVERSA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: Zoe Smith	Contact	: Andrew Wotherspoon
Address	: Level 24, 1 Market St, SYDNEY NSW 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: 02 8252 0000	Telephone	: +61-2-8784 8555
Project	: S22013 Mars Road DSI	Date Samples Received	: 15-Nov-2024
Order number	: ----	Date Analysis Commenced	: 21-Nov-2024
C-O-C number	: ----	Issue Date	: 26-Nov-2024
Sampler	: Lucas Dzalakowski		
Site	: ----		
Quote number	: EN/000		
No. of samples received	: 7		
No. of samples analysed	: 3		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC
* = The final LOR has been raised due to dilution or other sample specific cause; adjusted LOR is shown in brackets. The duplicate ranges for Acceptable RPD% are applied to the final LOR where applicable.

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 6204735)									
ES2437730-001	QC201	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	15	12	20.2	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	10	5	61.3	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	9	10	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	20	29	37.2	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	28	30	9.0	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 6204738)									
ES2437730-001	QC201	EA055: Moisture Content	----	0.1 (1.0)*	%	18.7	20.7	10.1	0% - 20%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 6204736)									
ES2437730-001	QC201	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 6203254)									
EW2405390-001	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 6203254) - continued									
EW2405390-001	Anonymous	EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 6203255)									
EW2405390-001	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 6204150)									
ES2437674-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES2437674-002	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 6203255)									
EW2405390-001	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 6204150)									
ES2437674-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES2437674-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080: BTEXN (QC Lot: 6204150)									
ES2437674-001	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
ES2437674-002	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP080: BTEXN (QC Lot: 6204150) - continued									
ES2437674-002	Anonymous	EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 6204062)									
ES2437540-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0054	0.0055	0.0	0% - 20%
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 6204062)									
ES2437540-001	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	0.0003	0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	0.0003	0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	0.0009	0.0008	13.3	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 6204062)									
ES2437540-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 6204735)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	93.9	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	114	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	19.6 mg/kg	108	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	99.5	89.0	111
EG005T: Lead	7439-92-1	5	mg/kg	<5	60.8 mg/kg	92.6	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.3 mg/kg	94.4	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	139.3 mg/kg	88.5	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 6204736)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	87.6	70.0	125
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 6203254)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	96.5	77.0	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	93.9	72.0	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	96.6	73.0	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	97.2	72.0	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	92.1	75.0	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	94.1	77.0	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	89.1	73.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	91.8	74.0	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	89.7	69.0	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	96.6	75.0	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	94.3	68.0	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	101	74.0	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	89.4	70.0	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	83.7	61.0	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	84.4	62.0	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	82.2	63.0	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6203255)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	99.2	75.0	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	102	77.0	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	106	71.0	129

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6204150)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	80.7	72.2	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6203255)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	101	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	103	74.0	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	106	63.0	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6204150)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	76.1	72.4	133
EP080: BTEXN (QCLot: 6204150)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	106	76.0	124
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	110	78.5	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	109	77.4	121
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	109	78.2	121
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	108	81.3	121
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	105	78.8	122
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6204062)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.00125 mg/kg	88.7	72.0	128
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	85.0	67.0	130
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	85.7	68.0	136
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6204062)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	97.4	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	87.9	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	90.6	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	105	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	87.9	69.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6204062)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00125 mg/kg	103	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00125 mg/kg	85.6	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.00125 mg/kg	110	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.00125 mg/kg	93.2	69.2	143

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 6204735)							
ES2437730-001	QC201	EG005T: Arsenic	7440-38-2	50 mg/kg	100	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	118	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	95.7	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	99.9	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	103	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	92.0	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	98.6	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 6204736)							
ES2437730-001	QC201	EG035T: Mercury	7439-97-6	5 mg/kg	89.2	70.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 6203254)							
EW2405390-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	96.8	70.0	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	100	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6203255)							
EW2405390-001	Anonymous	EP071: C10 - C14 Fraction	----	480 mg/kg	81.0	73.0	137
		EP071: C15 - C28 Fraction	----	3100 mg/kg	65.6	53.0	131
		EP071: C29 - C36 Fraction	----	2060 mg/kg	73.2	52.0	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6204150)							
ES2437674-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	81.6	60.4	142
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6203255)							
EW2405390-001	Anonymous	EP071: >C10 - C16 Fraction	----	860 mg/kg	75.4	73.0	137
		EP071: >C16 - C34 Fraction	----	4320 mg/kg	68.9	53.0	131
		EP071: >C34 - C40 Fraction	----	890 mg/kg	76.1	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6204150)							
ES2437674-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	77.1	61.1	142
EP080: BTEXN (QCLot: 6204150)							
ES2437674-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	90.1	62.1	122
		EP080: Toluene	108-88-3	2.5 mg/kg	93.6	66.6	119
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	93.4	67.4	123
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	90.4	66.4	121
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	89.6	70.7	121
		EP080: Naphthalene	91-20-3	2.5 mg/kg	96.0	61.1	115
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6204062)							
ES2437540-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.00125 mg/kg	98.3	72.0	128
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00125 mg/kg	99.0	67.0	130
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00125 mg/kg	82.4	68.0	136

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6204062)							
ES2437540-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	101	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	91.4	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	107	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	110	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	91.9	69.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6204062)							
ES2437540-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00125 mg/kg	97.0	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00125 mg/kg	87.8	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.00125 mg/kg	109	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.00125 mg/kg	79.0	69.2	143

COC: 21/11/24, 1448

senversa

Chain of Custody Documentation

Senversa Pty Ltd
www.senversa.com.au
ABN 89 132 231 380

Laboratory: Envirolab Services NSW
Address:
Contact: Sample Receipt
Phone:

Job Number:	S22013	**Purchase Order:**	
Project Name:	Mars Road DSI	**Quote No:**	24SY516v2
Sampled By:	Lucas Dzalakowski	**Turn Around Time:**	standard
Project Manager:	Zoe Smith	**Page:**	1 of 1
Email Report To:	@senversa.com.au lucas.dzalakowski@senver	**Phone/Mobile:**	0431 659 835

	Sample Information				Container Information		Analysis Required											
Lab ID	**Sample ID**	**Matrix ***	**Date**	**Time**	**Type / Code**	**Total Bottles**	8 heavy metals	BTEXN	TRH	VOC's	PFAS						HOLD	Comments: e.g. Highly contaminated sample; hazardous materials present; trace LORs etc.
1	MW01	Water	21/11/2024	12:53pm	vials, bottles	7	X	X	X	X	X							
2	MW02	Water	21/11/2024	8:15am	vials, bottles	7	X	X	X	X	X							
3	MW03	Water	21/11/2024	9:33am	vials, bottles	7	X	X	X	X	X							
4	MW04	Water	21/11/2024	10:50am	vials, bottles	7	X	X	X	X	X							
5	MW05	Water	21/11/2024	11:40am	vials, bottles	7	X	X	X	X	X							
6	QC305	Water	21/11/2024	1:45pm	vials, bottles	7	X	X	X		X							
7	QC405	Water	21/11/2024	_	vial	1		X										TS
8	QC509	Water	21/11/2024	_	vial	1					X							TB
Total						44												

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 367014

Date Received: 21/11/24
~~Time Received:~~ 1520
Received By: DH
Temp: Cool/Ambient
Cooling: Ice/Icepack 4°c
~~Security: Intact/Broken/None~~

Sampler: I attest that proper field sampling procedures in accordance with Senversa standard procedures and/or project specifications were used during the collection of these samples:	**Sampler Name:** Lucas Dzalakowski	**Signature:**	**Date:** 21/11/2024

Relinquished By:			**Method of Shipment (if applicable):**	**Received by:**	
Name/Signature:	Lucas Dzalakowski	Date: 21/11/24	Carrier / Reference #:	Name/Signature: Danielle Lobb	Date: 21/11/24
Of:		Time:	Date/Time:	Of: ES 540	Time: 1520
Name/Signature:		Date:	Carrier / Reference #:	Name/Signature:	Date:
Of:		Time:	Date/Time:	Of:	Time:
Name/Signature:		Date:	Carrier / Reference #:	Name/Signature:	Date:
Of:		Time:	Date/Time:	Of:	Time:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Acid (HNO_3) Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide (NaOH)/Cadmium (Cd) Preserved; S = Sodium Hydroxide Preserved Plastic; STH = Sodium thiosulfate preserved plastic; V = VOA Vial Hydochloric Acid (HCl) Preserved; VS = VOA Vial Sulphuric Preserved; VSA = Sulphuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation Bottle; SP = Sulphuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; UA = Unpreserved Amber Glass; L=Lugol's iodine preserved white plastic bottle; SW= sulfuric acid preserved wide mouth glass jar

Completed by: _____
Checked by: _____

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	Senversa Pty Ltd
Attention	Zoe Smith

Sample Login Details

Your reference	S22013 Mars Road DSI
Envirolab Reference	367014
Date Sample Received	21/11/2024
Date Instructions Received	21/11/2024
Date Results Expected to be Reported	28/11/2024

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	8 Water
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	21
Cooling Method	Ice
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	VOCs in water	vTRH(C6-C10)/BTEXN in Water	svTRH (C10-C40) in Water	HM in water - dissolved	PFAS in Waters Short
MW01	✓	✓	✓	✓	✓
MW02	✓	✓	✓	✓	✓
MW03	✓	✓	✓	✓	✓
MW04	✓	✓	✓	✓	✓
MW05	✓	✓	✓	✓	✓
QC305		✓	✓	✓	✓
QC405		✓			
QC509					✓

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.

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
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CERTIFICATE OF ANALYSIS 367014

Client Details

Client	Senversa Pty Ltd
Attention	Zoe Smith
Address	6/15 William St, Melbourne, VIC, 3000

Sample Details

Your Reference	**S22013 Mars Road DSI**
Number of Samples	8 Water
Date samples received	21/11/2024
Date completed instructions received	21/11/2024

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.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	28/11/2024
Date of Issue	28/11/2024

NATA Accreditation Number 2901. This document shall not be reproduced except in full.

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

Results Approved By
Giovanni Agosti, Group Technical Manager
Liam Timmins, Organics Supervisor
Sean McAlary, Senior Chemist
Timothy Toll, Senior Chemist

Authorised By
Nancy Zhang, Laboratory Manager

VOCs in water						
Our Reference		367014-1	367014-2	367014-3	367014-4	367014-5
Your Reference	UNITS	MW01	MW02	MW03	MW04	MW05
Date Sampled		21/11/2024	21/11/2024	21/11/2024	21/11/2024	21/11/2024
Type of sample		Water	Water	Water	Water	Water
Date Extracted	-	22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024
Date Analysed	-	22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024
Dichlorodifluoromethane	µg/L	<10	<10	<10	<10	<10
Chloromethane	µg/L	<10	<10	<10	<10	<10
Vinyl Chloride	µg/L	<10	<10	<10	<10	<10
Bromomethane	µg/L	<10	<10	<10	<10	<10
Chloroethane	µg/L	<10	<10	<10	<10	<10
Trichlorofluoromethane	µg/L	<10	<10	<10	<10	<10
1,1-Dichloroethene	µg/L	<1	<1	<1	<1	<1
Trans-1,2-dichloroethene	µg/L	<1	<1	<1	<1	<1
1,1-dichloroethane	µg/L	<1	<1	<1	<1	<1
Cis-1,2-dichloroethene	µg/L	<1	<1	<1	<1	<1
Bromochloromethane	µg/L	<1	<1	<1	<1	<1
Chloroform	µg/L	<1	<1	<1	<1	<1
2,2-dichloropropane	µg/L	<1	<1	<1	<1	<1
1,2-dichloroethane	µg/L	<1	<1	<1	<1	<1
1,1,1-trichloroethane	µg/L	<1	<1	<1	<1	<1
1,1-dichloropropene	µg/L	<1	<1	<1	<1	<1
Cyclohexane	µg/L	<1	<1	<1	<1	<1
Carbon tetrachloride	µg/L	<1	<1	<1	<1	<1
Benzene	µg/L	<1	<1	<1	<1	<1
Dibromomethane	µg/L	<1	<1	<1	<1	<1
1,2-dichloropropane	µg/L	<1	<1	<1	<1	<1
Trichloroethene	µg/L	<1	<1	<1	<1	<1
Bromodichloromethane	µg/L	<1	<1	<1	<1	<1
trans-1,3-dichloropropene	µg/L	<1	<1	<1	<1	<1
cis-1,3-dichloropropene	µg/L	<1	<1	<1	<1	<1
1,1,2-trichloroethane	µg/L	<1	<1	<1	<1	<1
Toluene	µg/L	<1	<1	<1	6	1
1,3-dichloropropane	µg/L	<1	<1	<1	<1	<1
Dibromochloromethane	µg/L	<1	<1	<1	<1	<1
1,2-dibromoethane	µg/L	<1	<1	<1	<1	<1
Tetrachloroethene	µg/L	<1	<1	<1	<1	<1
1,1,1,2-tetrachloroethane	µg/L	<1	<1	<1	<1	<1
Chlorobenzene	µg/L	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1

VOCs in water						
Our Reference		367014-1	367014-2	367014-3	367014-4	367014-5
Your Reference	UNITS	MW01	MW02	MW03	MW04	MW05
Date Sampled		21/11/2024	21/11/2024	21/11/2024	21/11/2024	21/11/2024
Type of sample		Water	Water	Water	Water	Water
Bromoform	µg/L	<1	<1	<1	<1	<1
m+p-xylene	µg/L	<2	<2	<2	<2	<2
Styrene	µg/L	<1	<1	<1	<1	<1
1,1,2,2-tetrachloroethane	µg/L	<1	<1	<1	<1	<1
o-xylene	µg/L	<1	<1	<1	<1	<1
1,2,3-trichloropropane	µg/L	<1	<1	<1	<1	<1
Isopropylbenzene	µg/L	<1	<1	<1	<1	<1
Bromobenzene	µg/L	<1	<1	<1	<1	<1
n-propyl benzene	µg/L	<1	<1	<1	<1	<1
2-chlorotoluene	µg/L	<1	<1	<1	<1	<1
4-chlorotoluene	µg/L	<1	<1	<1	<1	<1
1,3,5-trimethyl benzene	µg/L	<1	<1	<1	<1	<1
Tert-butyl benzene	µg/L	<1	<1	<1	<1	<1
1,2,4-trimethyl benzene	µg/L	<1	<1	<1	<1	<1
1,3-dichlorobenzene	µg/L	<1	<1	<1	<1	<1
Sec-butyl benzene	µg/L	<1	<1	<1	<1	<1
1,4-dichlorobenzene	µg/L	<1	<1	<1	<1	<1
4-isopropyl toluene	µg/L	<1	<1	<1	<1	<1
1,2-dichlorobenzene	µg/L	<1	<1	<1	<1	<1
n-butyl benzene	µg/L	<1	<1	<1	<1	<1
1,2-dibromo-3-chloropropane	µg/L	<1	<1	<1	<1	<1
1,2,4-trichlorobenzene	µg/L	<1	<1	<1	<1	<1
Hexachlorobutadiene	µg/L	<1	<1	<1	<1	<1
1,2,3-trichlorobenzene	µg/L	<1	<1	<1	<1	<1
Surrogate Dibromofluoromethane	%	105	100	106	102	105
Surrogate Toluene-d8	%	100	99	100	101	99
Surrogate 4-Bromofluorobenzene	%	98	94	102	94	99

vTRH(C6-C10)/BTEXN in Water						
Our Reference		367014-1	367014-2	367014-3	367014-4	367014-5
Your Reference	UNITS	MW01	MW02	MW03	MW04	MW05
Date Sampled		21/11/2024	21/11/2024	21/11/2024	21/11/2024	21/11/2024
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024
Date analysed	-	22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024
TRH C_6 - C_9	µg/L	<10	<10	<10	<10	<10
TRH C_6 - C_{10}	µg/L	<10	<10	<10	<10	<10
TRH C_6 - C_{10} less BTEX (F1)	µg/L	<10	<10	<10	<10	<10
Benzene	µg/L	<1	<1	<1	<1	<1
Toluene	µg/L	<1	<1	<1	6	1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1
m+p-xylene	µg/L	<2	<2	<2	<2	<2
o-xylene	µg/L	<1	<1	<1	<1	<1
Naphthalene	µg/L	<1	<1	<1	<1	<1
Surrogate Dibromofluoromethane	%	105	100	106	102	105
Surrogate Toluene-d8	%	100	99	100	101	99
Surrogate 4-Bromofluorobenzene	%	98	94	102	94	99

vTRH(C6-C10)/BTEXN in Water			
Our Reference		367014-6	367014-7
Your Reference	UNITS	QC305	QC405
Date Sampled		21/11/2024	21/11/2024
Type of sample		Water	Water
Date extracted	-	22/11/2024	22/11/2024
Date analysed	-	22/11/2024	22/11/2024
TRH C_6 - C_9	µg/L	<10	[NA]
TRH C_6 - C_{10}	µg/L	<10	[NA]
TRH C_6 - C_{10} less BTEX (F1)	µg/L	<10	[NA]
Benzene	µg/L	<1	100%
Toluene	µg/L	<1	102%
Ethylbenzene	µg/L	<1	102%
m+p-xylene	µg/L	<2	100%
o-xylene	µg/L	<1	103%
Naphthalene	µg/L	<1	[NA]
Surrogate Dibromofluoromethane	%	101	106
Surrogate Toluene-d8	%	102	102
Surrogate 4-Bromofluorobenzene	%	95	100

svTRH (C10-C40) in Water						
Our Reference		367014-1	367014-2	367014-3	367014-4	367014-5
Your Reference	UNITS	MW01	MW02	MW03	MW04	MW05
Date Sampled		21/11/2024	21/11/2024	21/11/2024	21/11/2024	21/11/2024
Type of sample		Water	Water	Water	Water	Water
Date extracted	-	22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024
Date analysed	-	23/11/2024	23/11/2024	23/11/2024	23/11/2024	23/11/2024
TRH C_{10} - C_{14}	µg/L	100	<50	<50	<50	<50
TRH C_{15} - C_{28}	µg/L	100	<100	<100	<100	<100
TRH C_{29} - C_{36}	µg/L	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	µg/L	200	<50	<50	<50	<50
TRH >C_{10} - C_{16}	µg/L	120	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	µg/L	120	<50	<50	<50	<50
TRH >C_{16} - C_{34}	µg/L	<100	<100	<100	<100	<100
TRH >C_{34} - C_{40}	µg/L	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	µg/L	120	<50	<50	<50	<50
Surrogate o-Terphenyl	%	92	100	96	90	92

svTRH (C10-C40) in Water		
Our Reference		367014-6
Your Reference	UNITS	QC305
Date Sampled		21/11/2024
Type of sample		Water
Date extracted	-	22/11/2024
Date analysed	-	23/11/2024
TRH C_{10} - C_{14}	µg/L	<50
TRH C_{15} - C_{28}	µg/L	<100
TRH C_{29} - C_{36}	µg/L	<100
Total +ve TRH (C10-C36)	µg/L	<50
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
Total +ve TRH (>C10-C40)	µg/L	<50
Surrogate o-Terphenyl	%	96

HM in water - dissolved						
Our Reference		367014-1	367014-2	367014-3	367014-4	367014-5
Your Reference	UNITS	MW01	MW02	MW03	MW04	MW05
Date Sampled		21/11/2024	21/11/2024	21/11/2024	21/11/2024	21/11/2024
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024
Date analysed	-	22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024
Arsenic-Dissolved	µg/L	4	<1	<1	<1	<1
Cadmium-Dissolved	µg/L	0.2	<0.1	<0.1	<0.1	<0.1
Chromium-Dissolved	µg/L	<1	1	<1	<1	<1
Copper-Dissolved	µg/L	1	6	4	3	2
Lead-Dissolved	µg/L	<1	3	4	<1	<1
Mercury-Dissolved	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Nickel-Dissolved	µg/L	41	19	5	10	10
Zinc-Dissolved	µg/L	340	62	24	36	39

HM in water - dissolved		
Our Reference		367014-6
Your Reference	UNITS	QC305
Date Sampled		21/11/2024
Type of sample		Water
Date prepared	-	22/11/2024
Date analysed	-	22/11/2024
Arsenic-Dissolved	µg/L	<1
Cadmium-Dissolved	µg/L	<0.1
Chromium-Dissolved	µg/L	<1
Copper-Dissolved	µg/L	<1
Lead-Dissolved	µg/L	<1
Mercury-Dissolved	µg/L	<0.05
Nickel-Dissolved	µg/L	<1
Zinc-Dissolved	µg/L	2

PFAS in Waters Short						
Our Reference		367014-1	367014-2	367014-3	367014-4	367014-5
Your Reference	UNITS	MW01	MW02	MW03	MW04	MW05
Date Sampled		21/11/2024	21/11/2024	21/11/2024	21/11/2024	21/11/2024
Type of sample		Water	Water	Water	Water	Water
Date prepared	-	22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024
Date analysed	-	22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024
Perfluorobutanesulfonic acid	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorohexanesulfonic acid - PFHxS	µg/L	<0.01	0.01	0.04	0.02	0.01
Perfluorooctanesulfonic acid PFOS	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorooctanoic acid PFOA	µg/L	<0.01	<0.01	<0.01	0.01	<0.01
6:2 FTS	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
8:2 FTS	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Surrogate $^{13}C_8$ *PFOS*	%	91	88	89	92	87
Surrogate $^{13}C_2$ *PFOA*	%	98	101	98	100	102
Extracted ISTD $^{13}C_3$ *PFBS*	%	97	99	93	103	100
Extracted ISTD $^{18}O_2$ *PFHxS*	%	95	91	94	96	91
Extracted ISTD $^{13}C_4$ *PFOS*	%	92	96	96	99	100
Extracted ISTD $^{13}C_4$ *PFOA*	%	94	91	93	94	94
Extracted ISTD $^{13}C_2$ *6:2FTS*	%	81	74	80	80	80
Extracted ISTD $^{13}C_2$ *8:2FTS*	%	78	79	84	80	80
Total Positive PFHxS & PFOS	µg/L	<0.01	0.01	0.04	0.02	0.01
Total Positive PFOA & PFOS	µg/L	<0.01	<0.01	<0.01	0.01	<0.01
Total Positive PFAS	µg/L	<0.01	0.01	0.04	0.03	0.01

PFAS in Waters Short			
Our Reference		367014-6	367014-8
Your Reference	UNITS	QC305	QC509
Date Sampled		21/11/2024	21/11/2024
Type of sample		Water	Water
Date prepared	-	22/11/2024	22/11/2024
Date analysed	-	22/11/2024	22/11/2024
Perfluorobutanesulfonic acid	µg/L	<0.01	<0.01
Perfluorohexanesulfonic acid - PFHxS	µg/L	<0.01	<0.01
Perfluorooctanesulfonic acid PFOS	µg/L	<0.01	<0.01
Perfluorooctanoic acid PFOA	µg/L	<0.01	<0.01
6:2 FTS	µg/L	<0.01	<0.01
8:2 FTS	µg/L	<0.02	<0.02
Surrogate $^{13}C_8$ *PFOS*	%	94	94
Surrogate $^{13}C_2$ *PFOA*	%	99	101
Extracted ISTD $^{13}C_3$ *PFBS*	%	98	99
Extracted ISTD $^{18}O_2$ *PFHxS*	%	88	92
Extracted ISTD $^{13}C_4$ *PFOS*	%	96	98
Extracted ISTD $^{13}C_4$ *PFOA*	%	94	93
Extracted ISTD $^{13}C_2$ *6:2FTS*	%	78	80
Extracted ISTD $^{13}C_2$ *8:2FTS*	%	81	83
Total Positive PFHxS & PFOS	µg/L	<0.01	<0.01
Total Positive PFOA & PFOS	µg/L	<0.01	<0.01
Total Positive PFAS	µg/L	<0.01	<0.01

Method ID	Methodology Summary
Metals-021	Determination of Mercury by Cold Vapour AAS.
Metals-022	Determination of various metals by ICP-MS. Please note for Bromine and Iodine, any forms of these elements that are present are included together in the one result reported for each of these two elements. Salt forms (e.g. FeO, PbO, ZnO) are determined stoichiometrically from the base metal concentration.
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.
Org-029	Soil samples are extracted with basified Methanol. Waters and soil extracts are directly injected and/or concentrated/extracted using SPE. TCLPs/ASLP leachates are centrifuged, the supernatant is then analysed (including amendment with solvent) - as per the option in AS4439.3. Analysis is undertaken with LC-MS/MS. PFAS results include the sum of branched and linear isomers where applicable. Please note that PFAS results are corrected for Extracted Internal Standards (QSM 5.4 Table B-15 terminology), which are mass labelled analytes added prior to sample preparation to assess matrix effects and verify processing of the sample. PFAS analytes without a commercially available mass labelled analogue are corrected vs a closely eluting mass labelled PFAS compound. Surrogates are also reported, in this context they are mass labelled PFAS compounds added prior to extraction but are used as monitoring compounds only (not used for result correction). Envicarb (or similar) is used discretionally to remove interfering matrix components. Please contact the laboratory if estimates of Measurement Uncertainty are required as per WA DER.

QUALITY CONTROL: VOCs in water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W4	[NT]
Date Extracted	-			22/11/2024	[NT]	[NT]	[NT]	[NT]	22/11/2024	[NT]
Date Analysed	-			22/11/2024	[NT]	[NT]	[NT]	[NT]	22/11/2024	[NT]
Dichlorodifluoromethane	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chloromethane	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Vinyl Chloride	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromomethane	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chloroethane	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Trichlorofluoromethane	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1-Dichloroethene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Trans-1,2-dichloroethene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1-dichloroethane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	103	[NT]
Cis-1,2-dichloroethene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromochloromethane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chloroform	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	98	[NT]
2,2-dichloropropane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichloroethane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	100	[NT]
1,1,1-trichloroethane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	104	[NT]
1,1-dichloropropene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Cyclohexane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Carbon tetrachloride	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Dibromomethane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichloropropane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Trichloroethene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	118	[NT]
Bromodichloromethane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	100	[NT]
trans-1,3-dichloropropene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
cis-1,3-dichloropropene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1,2-trichloroethane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Toluene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	100	[NT]
1,3-dichloropropane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibromochloromethane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	100	[NT]
1,2-dibromoethane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Tetrachloroethene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	100	[NT]
1,1,1,2-tetrachloroethane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chlorobenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	96	[NT]
Bromoform	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
m+p-xylene	µg/L	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	96	[NT]
Styrene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1,2,2-tetrachloroethane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]

QUALITY CONTROL: VOCs in water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W4	[NT]
o-xylene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	97	[NT]
1,2,3-trichloropropane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Isopropylbenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromobenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
n-propyl benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2-chlorotoluene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
4-chlorotoluene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3,5-trimethyl benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Tert-butyl benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,4-trimethyl benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3-dichlorobenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Sec-butyl benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,4-dichlorobenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
4-isopropyl toluene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichlorobenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
n-butyl benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dibromo-3-chloropropane	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,4-trichlorobenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Hexachlorobutadiene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,3-trichlorobenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	106	[NT]	[NT]	[NT]	[NT]	104	[NT]
Surrogate Toluene-d8	%		Org-023	99	[NT]	[NT]	[NT]	[NT]	103	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-023	101	[NT]	[NT]	[NT]	[NT]	100	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W4	[NT]
Date extracted	-			22/11/2024	[NT]	[NT]	[NT]	[NT]	22/11/2024	[NT]
Date analysed	-			22/11/2024	[NT]	[NT]	[NT]	[NT]	22/11/2024	[NT]
TRH C_6 - C_9	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	98	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	98	[NT]
Benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Toluene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	96	[NT]
m+p-xylene	µg/L	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	96	[NT]
o-xylene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	97	[NT]
Naphthalene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	106	[NT]	[NT]	[NT]	[NT]	104	[NT]
Surrogate Toluene-d8	%		Org-023	99	[NT]	[NT]	[NT]	[NT]	103	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-023	101	[NT]	[NT]	[NT]	[NT]	100	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			22/11/2024	[NT]	[NT]	[NT]	[NT]	22/11/2024	[NT]
Date analysed	-			23/11/2024	[NT]	[NT]	[NT]	[NT]	23/11/2024	[NT]
TRH C_{10} - C_{14}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	115	[NT]
TRH C_{15} - C_{28}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	120	[NT]
TRH C_{29} - C_{36}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	114	[NT]
TRH >C_{10} - C_{16}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	115	[NT]
TRH >C_{16} - C_{34}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	120	[NT]
TRH >C_{34} - C_{40}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	114	[NT]
Surrogate o-Terphenyl	%		Org-020	97	[NT]	[NT]	[NT]	[NT]	122	[NT]

QUALITY CONTROL: HM in water - dissolved						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	367014-2
Date prepared	-			26/11/2024	1	22/11/2024	22/11/2024		22/11/2024	26/11/2024
Date analysed	-			26/11/2024	1	22/11/2024	22/11/2024		22/11/2024	26/11/2024
Arsenic-Dissolved	µg/L	1	Metals-022	<1	1	4	4	0	87	93
Cadmium-Dissolved	µg/L	0.1	Metals-022	<0.1	1	0.2	0.2	0	82	98
Chromium-Dissolved	µg/L	1	Metals-022	<1	1	<1	<1	0	81	94
Copper-Dissolved	µg/L	1	Metals-022	<1	1	1	1	0	81	89
Lead-Dissolved	µg/L	1	Metals-022	<1	1	<1	<1	0	85	91
Mercury-Dissolved	µg/L	0.05	Metals-021	<0.05	1	<0.05	[NT]		106	[NT]
Nickel-Dissolved	µg/L	1	Metals-022	<1	1	41	39	5	83	92
Zinc-Dissolved	µg/L	1	Metals-022	<1	1	340	330	3	89	92

QUALITY CONTROL: HM in water - dissolved						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	3	22/11/2024	22/11/2024		[NT]	[NT]
Date analysed	-			[NT]	3	22/11/2024	22/11/2024		[NT]	[NT]
Arsenic-Dissolved	µg/L	1	Metals-022	[NT]	3	<1	[NT]		[NT]	[NT]
Cadmium-Dissolved	µg/L	0.1	Metals-022	[NT]	3	<0.1	[NT]		[NT]	[NT]
Chromium-Dissolved	µg/L	1	Metals-022	[NT]	3	<1	[NT]		[NT]	[NT]
Copper-Dissolved	µg/L	1	Metals-022	[NT]	3	4	[NT]		[NT]	[NT]
Lead-Dissolved	µg/L	1	Metals-022	[NT]	3	4	[NT]		[NT]	[NT]
Mercury-Dissolved	µg/L	0.05	Metals-021	[NT]	3	<0.05	<0.05	0	[NT]	[NT]
Nickel-Dissolved	µg/L	1	Metals-022	[NT]	3	5	[NT]		[NT]	[NT]
Zinc-Dissolved	µg/L	1	Metals-022	[NT]	3	24	[NT]		[NT]	[NT]

QUALITY CONTROL: PFAS in Waters Short						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	367014-6
Date prepared	-			22/11/2024	5	22/11/2024	22/11/2024		22/11/2024	22/11/2024
Date analysed	-			22/11/2024	5	22/11/2024	22/11/2024		22/11/2024	22/11/2024
Perfluorobutanesulfonic acid	µg/L	0.01	Org-029	<0.01	5	<0.01	<0.01	0	102	101
Perfluorohexanesulfonic acid - PFHxS	µg/L	0.01	Org-029	<0.01	5	0.01	0.01	0	109	109
Perfluorooctanesulfonic acid PFOS	µg/L	0.01	Org-029	<0.01	5	<0.01	<0.01	0	94	97
Perfluorooctanoic acid PFOA	µg/L	0.01	Org-029	<0.01	5	<0.01	<0.01	0	98	98
6:2 FTS	µg/L	0.01	Org-029	<0.01	5	<0.01	<0.01	0	104	106
8:2 FTS	µg/L	0.02	Org-029	<0.02	5	<0.02	<0.02	0	102	107
Surrogate $^{13}C_8$ *PFOS*	%		Org-029	96	5	87	91	4	89	94
Surrogate $^{13}C_2$ *PFOA*	%		Org-029	97	5	102	99	3	99	101
Extracted ISTD $^{13}C_3$ *PFBS*	%		Org-029	97	5	100	102	2	102	99
Extracted ISTD $^{18}O_2$ *PFHxS*	%		Org-029	98	5	91	95	4	94	90
Extracted ISTD $^{13}C_4$ *PFOS*	%		Org-029	100	5	100	99	1	103	99
Extracted ISTD $^{13}C_4$ *PFOA*	%		Org-029	98	5	94	94	0	97	94
Extracted ISTD $^{13}C_2$ *6:2FTS*	%		Org-029	83	5	80	79	1	92	91
Extracted ISTD $^{13}C_2$ *8:2FTS*	%		Org-029	85	5	80	82	2	96	92

Result Definitions

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

Quality Control Definitions

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

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

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

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

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

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

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

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

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

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

Report Comments

Dissolved Metals: no filtered, preserved sample was received for #6, therefore the unpreserved sample was filtered through 0.45µm filter at the lab.
Note: there is a possibility some elements may be underestimated.

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

DATA QUALITY ASSESSMENT SUMMARY

Report Details

Envirolab Report Reference	**367014**
Client ID	Senversa Pty Ltd
Project Reference	S22013 Mars Road DSI
Date Issued	28/11/2024

QC DATA

All laboratory QC data was within the Envirolab Group's specifications.

HOLDING TIME COMPLIANCE EVALUATION

All preservation / holding times (based on AS/ASPHA/ISO/NEPM/USEPA reference documents and standards) are compliant.

Certain analyses have had their recommended technical holding times elongated by filtering and/or freezing on receipt at the laboratory (e.g. BOD, chlorophyll/Pheophytin, nutrients and acid sulphate soil tests).

COMPLIANCE TO QC FREQUENCY (NEPM)

Internal laboratory QC rate complies with NEPM requirements (LCS/MB/MS 1 in 20, Duplicates 1 in 10 samples). Note, samples are batched together with other sample consignments in order to assign QC sample frequency.

QC Evaluation

Duplicate(s) was performed as per NEPM frequency	✓
Laboratory Control Sample(s) were analysed with the samples received	✓
A Method Blank was performed with the samples received	✓
Matrix spike(s) was performed as per NEPM frequency (Not Applicable for Air samples)	✓

Refer to Certificate of Analysis for all Quality Control data.

Environmental Division
Sydney
Work Order Reference
ES2438247

Telephone : +61-2-8784 8555

senversa

Chain of Custody Documentation

Senversa Pty Ltd
www.senversa.com.au
ABN 89 132 231 380

Laboratory: ALS NSW
Address:
Contact: Sample Receipt
Phone:

Job Number:	S22013	Purchase Order:	
Project Name:	Mars Road DSI	Quote No:	24SY516v2
Sampled By:	Lucas Dzalakowski	Turn Around Time:	standard
Project Manager:	Zoe Smith	Page:	1 of 1
Email Report To:	@senversa.com.au, lucas.dzalakowski@senve	Phone/Mobile:	0431 659 835

Sample Information					Container Information		Analysis Required											
Lab ID	Sample ID	Matrix *	Date	Time	Type / Code	Total Bottles	8 heavy metals	BTEXN	TRH	VOC's	PFAS						HOLD	Comments: e.g. Highly contaminated sample; hazardous materials present; trace LORs etc.
1	QC206	Water	21/11/2024	8:15am	vials, bottles	7	X	X	X	X	X							
Total						7												

Sampler: I attest that proper field sampling procedures in accordance with Senversa standard procedures and/or project specifications were used during the collection of these samples:	Sampler Name: Lucas Dzalakowski	Signature:	Date: 21/11/2024

Relinquished By:			Method of Shipment (if applicable):	Received by:	
Name/Signature:	Lucas Dzalakowski	Date: 21/11/24	Carrier / Reference #:	Name/Signature:	Date:
Of:		Time:	Date/Time:	Of:	Time:
Name/Signature:		Date:	Carrier / Reference #:	Name/Signature:	Date:
Of:		Time:	Date/Time:	Of:	Time:
Name/Signature:		Date:	Carrier / Reference #:	Name/Signature:	Date:
Of:		Time:	Date/Time:	Of:	Time:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Acid (HNO_3) Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide (NaOH)/Cadmium (Cd) Preserved; S = Sodium Hydroxide Preserved Plastic; STH = Sodium thiosulfate preserved plastic; V = VOA Vial Hydochloric Acid (HCl) Preserved; VS = VOA Vial Sulphuric Preserved; VSA = Sulphuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation Bottle; SP = Sulphuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; UA = Unpreserved Amber Glass; L=Lugol's iodine preserved white plastic bottle; SW= sulfuric acid preserved wide mouth glass jar

Rec: 21/15:40

Completed by:
Checked by:

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2438247**

Client	: **SENVERSA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: Zoe Smith	Contact	: Andrew Wotherspoon
Address	: Level 24, 1 Market St, SYDNEY NSW 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: Zoe.Smith@senversa.com.au	E-mail	: andrew.wotherspoon@alsglobal.com
Telephone	: 02 8252 0000	Telephone	: +61-2-8784 8555
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: S22013 Mars Road DSI	Page	: 1 of 2
Order number	: ----	Quote number	: ES2024SENVER0009 (NSW Custom Quote)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: Lucas Dzalakowski		

Dates

Date Samples Received	: 21-Nov-2024 15:40	Issue Date	: 23-Nov-2024
Client Requested Due Date	: 29-Nov-2024	Scheduled Reporting Date	: **28-Nov-2024**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 1	Temperature	: 10.3'C, 9.2'C, 9.8'C - Ice Bricks present
Receipt Detail	:	No. of samples received / analysed	: 1 / 1

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Unless otherwise stated, analytical work for this work order will be conducted at ALS Sydney, NATA accreditation no. 825, site no. 10911.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP074 (water) minus BTEXN Volatile Organic Compounds (minus BTEXN)	WATER - EP231X PFAS - Full Suite (31 analytes)	WATER - W-05 TRH/BTEXN/8 Metals
ES2438247-001	21-Nov-2024 08:15	QC206	✓	✓	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

Lucas Dzalakowski

- *AU Certificate of Analysis - NATA (COA)	Email	lucas.Dzalakowski@senversa.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	lucas.Dzalakowski@senversa.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	lucas.Dzalakowski@senversa.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	lucas.Dzalakowski@senversa.com.au
- Chain of Custody (CoC) (COC)	Email	lucas.Dzalakowski@senversa.com.au
- EDI Format - ESDAT (ESDAT)	Email	lucas.Dzalakowski@senversa.com.au

SUPPLIER ACCOUNTS

- A4 - AU Tax Invoice (INV)	Email	supplieraccounts@senversa.com.au

Zoe Smith

- *AU Certificate of Analysis - NATA (COA)	Email	Zoe.Smith@senversa.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	Zoe.Smith@senversa.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	Zoe.Smith@senversa.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	Zoe.Smith@senversa.com.au
- A4 - AU Tax Invoice (INV)	Email	Zoe.Smith@senversa.com.au
- Chain of Custody (CoC) (COC)	Email	Zoe.Smith@senversa.com.au
- EDI Format - ESDAT (ESDAT)	Email	Zoe.Smith@senversa.com.au

CERTIFICATE OF ANALYSIS

Work Order	: **ES2438247**	Page	: 1 of 9
Client	: **SENVERSA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: Zoe Smith	Contact	: Andrew Wotherspoon
Address	: Level 24, 1 Market St, SYDNEY NSW 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: 02 8252 0000	Telephone	: +61-2-8784 8555
Project	: S22013 Mars Road DSI	Date Samples Received	: 21-Nov-2024 15:40
Order number	: ----	Date Analysis Commenced	: 25-Nov-2024
C-O-C number	: ----	Issue Date	: 28-Nov-2024 16:12
Sampler	: Lucas Dzalakowski		
Site	: ----		
Quote number	: NSW Custom Quote		
No. of samples received	: 1		
No. of samples analysed	: 1		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20mL or 125mL bottles have been tested in accordance with the QSM5.4 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene at or above the LOR.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration or as per tables in USEPA 1633 where listed. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS and also conform to QSM 5.4 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QC206	----	----	----	----
				Sampling date / time	21-Nov-2024 08:15	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2438247-001	--------	--------	--------	--------
					Result	----	----	----	----
EG020F: Dissolved Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L		**0.001**	----	----	----	----
Copper	7440-50-8	0.001	mg/L		**0.006**	----	----	----	----
Nickel	7440-02-0	0.001	mg/L		**0.021**	----	----	----	----
Lead	7439-92-1	0.001	mg/L		**0.002**	----	----	----	----
Zinc	7440-66-6	0.005	mg/L		**0.064**	----	----	----	----
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons									
Styrene	100-42-5	5	µg/L		<5	----	----	----	----
Isopropylbenzene	98-82-8	5	µg/L		<5	----	----	----	----
n-Propylbenzene	103-65-1	5	µg/L		<5	----	----	----	----
1.3.5-Trimethylbenzene	108-67-8	5	µg/L		<5	----	----	----	----
sec-Butylbenzene	135-98-8	5	µg/L		<5	----	----	----	----
1.2.4-Trimethylbenzene	95-63-6	5	µg/L		<5	----	----	----	----
tert-Butylbenzene	98-06-6	5	µg/L		<5	----	----	----	----
p-Isopropyltoluene	99-87-6	5	µg/L		<5	----	----	----	----
n-Butylbenzene	104-51-8	5	µg/L		<5	----	----	----	----
EP074B: Oxygenated Compounds									
Vinyl Acetate	108-05-4	50	µg/L		<50	----	----	----	----
2-Butanone (MEK)	78-93-3	50	µg/L		<50	----	----	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L		<50	----	----	----	----
2-Hexanone (MBK)	591-78-6	50	µg/L		<50	----	----	----	----
EP074C: Sulfonated Compounds									
Carbon disulfide	75-15-0	5	µg/L		<5	----	----	----	----
EP074D: Fumigants									

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QC206	----	----	----	----
				Sampling date / time	21-Nov-2024 08:15	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2438247-001	--------	--------	--------	--------
					Result	----	----	----	----
EP074D: Fumigants - Continued									
2.2-Dichloropropane	594-20-7	5	µg/L		<5	----	----	----	----
1.2-Dichloropropane	78-87-5	5	µg/L		<5	----	----	----	----
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L		<5	----	----	----	----
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L		<5	----	----	----	----
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L		<5	----	----	----	----
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	50	µg/L		<50	----	----	----	----
Chloromethane	74-87-3	50	µg/L		<50	----	----	----	----
Vinyl chloride	75-01-4	50	µg/L		<50	----	----	----	----
Bromomethane	74-83-9	50	µg/L		<50	----	----	----	----
Chloroethane	75-00-3	50	µg/L		<50	----	----	----	----
Trichlorofluoromethane	75-69-4	50	µg/L		<50	----	----	----	----
1.1-Dichloroethene	75-35-4	5	µg/L		<5	----	----	----	----
Iodomethane	74-88-4	5	µg/L		<5	----	----	----	----
trans-1.2-Dichloroethene	156-60-5	5	µg/L		<5	----	----	----	----
1.1-Dichloroethane	75-34-3	5	µg/L		<5	----	----	----	----
cis-1.2-Dichloroethene	156-59-2	5	µg/L		<5	----	----	----	----
1.1.1-Trichloroethane	71-55-6	5	µg/L		<5	----	----	----	----
1.1-Dichloropropylene	563-58-6	5	µg/L		<5	----	----	----	----
Carbon Tetrachloride	56-23-5	5	µg/L		<5	----	----	----	----
1.2-Dichloroethane	107-06-2	5	µg/L		<5	----	----	----	----
Trichloroethene	79-01-6	5	µg/L		<5	----	----	----	----
Dibromomethane	74-95-3	5	µg/L		<5	----	----	----	----
1.1.2-Trichloroethane	79-00-5	5	µg/L		<5	----	----	----	----
1.3-Dichloropropane	142-28-9	5	µg/L		<5	----	----	----	----
Tetrachloroethene	127-18-4	5	µg/L		<5	----	----	----	----
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L		<5	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QC206	----	----	----	----
				Sampling date / time	21-Nov-2024 08:15	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2438247-001	--------	--------	--------	--------
					Result	----	----	----	----
EP074E: Halogenated Aliphatic Compounds - Continued									
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L		<5	----	----	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L		<5	----	----	----	----
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L		<5	----	----	----	----
1.2.3-Trichloropropane	96-18-4	5	µg/L		<5	----	----	----	----
Pentachloroethane	76-01-7	5	µg/L		<5	----	----	----	----
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L		<5	----	----	----	----
Hexachlorobutadiene	87-68-3	5	µg/L		<5	----	----	----	----
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	5	µg/L		<5	----	----	----	----
Bromobenzene	108-86-1	5	µg/L		<5	----	----	----	----
2-Chlorotoluene	95-49-8	5	µg/L		<5	----	----	----	----
4-Chlorotoluene	106-43-4	5	µg/L		<5	----	----	----	----
1.3-Dichlorobenzene	541-73-1	5	µg/L		<5	----	----	----	----
1.4-Dichlorobenzene	106-46-7	5	µg/L		<5	----	----	----	----
1.2-Dichlorobenzene	95-50-1	5	µg/L		<5	----	----	----	----
1.2.4-Trichlorobenzene	120-82-1	5	µg/L		<5	----	----	----	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L		<5	----	----	----	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	5	µg/L		<5	----	----	----	----
Bromodichloromethane	75-27-4	5	µg/L		<5	----	----	----	----
Dibromochloromethane	124-48-1	5	µg/L		<5	----	----	----	----
Bromoform	75-25-2	5	µg/L		<5	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	----	----	----	----
C10 - C14 Fraction	----	50	µg/L		<50	----	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	----	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QC206	----	----	----	----
				Sampling date / time	21-Nov-2024 08:15	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2438247-001	--------	--------	--------	--------
					Result	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons - Continued									
^ **C10 - C36 Fraction (sum)**	----	50	µg/L		<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	----	----	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	20	µg/L		<20	----	----	----	----
>C10 - C16 Fraction	----	100	µg/L		<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	----	----	----	----
^ **>C10 - C40 Fraction (sum)**	----	100	µg/L		<100	----	----	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	100	µg/L		<100	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	----	----	----	----
Toluene	108-88-3	2	µg/L		<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	----	----	----	----
^ **Total Xylenes**	----	2	µg/L		<2	----	----	----	----
^ **Sum of BTEX**	----	1	µg/L		<1	----	----	----	----
Naphthalene	91-20-3	5	µg/L		<5	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		<0.02	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L		<0.01	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		<0.01	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	QC206	----	----	----	----
			Sampling date / time	21-Nov-2024 08:15	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2438247-001	--------	--------	--------	--------
				Result	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids - Continued								
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	----	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QC206	----	----	----	----
				Sampling date / time	21-Nov-2024 08:15	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2438247-001	--------	--------	--------	--------
					Result	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	----	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	----	----	----	----
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	5	%		**102**	----	----	----	----
Toluene-D8	2037-26-5	5	%		**98.9**	----	----	----	----
4-Bromofluorobenzene	460-00-4	5	%		**102**	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**96.8**	----	----	----	----
Toluene-D8	2037-26-5	2	%		**89.7**	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		**102**	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		**107**	----	----	----	----
13C8-PFOA	----	0.02	%		**102**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	78	133
Toluene-D8	2037-26-5	79	129
4-Bromofluorobenzene	460-00-4	81	124
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	72	143
Toluene-D8	2037-26-5	75	131
4-Bromofluorobenzene	460-00-4	73	137
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2438247**	Page	: 1 of 6
Client	: **SENVERSA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: Zoe Smith	Telephone	: +61-2-8784 8555
Project	: S22013 Mars Road DSI	Date Samples Received	: 21-Nov-2024
Site	: ----	Issue Date	: 28-Nov-2024
Sampler	: Lucas Dzalakowski	No. of samples received	: 1
Order number	: ----	No. of samples analysed	: 1

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, where applicable to the methodology, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)						
TRH - Semivolatile Fraction	EP071	0	10	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
TRH - Semivolatile Fraction	EP071	0	10	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / *Container* / Client Sample ID(s)	*Sample Date*	*Extraction / Preparation*			*Analysis*		
		Date extracted	*Due for extraction*	*Evaluation*	*Date analysed*	*Due for analysis*	*Evaluation*
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)							
QC206	**21-Nov-2024**	**----**	----	----	**25-Nov-2024**	20-May-2025	✓
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)							
QC206	**21-Nov-2024**	**----**	----	----	**26-Nov-2024**	19-Dec-2024	✓
EP074A: Monocyclic Aromatic Hydrocarbons							
Amber VOC Vial - Sulfuric Acid (EP074)							
QC206	**21-Nov-2024**	**26-Nov-2024**	05-Dec-2024	✓	**28-Nov-2024**	05-Dec-2024	✓
EP074B: Oxygenated Compounds							
Amber VOC Vial - Sulfuric Acid (EP074)							
QC206	**21-Nov-2024**	**26-Nov-2024**	05-Dec-2024	✓	**28-Nov-2024**	05-Dec-2024	✓
EP074C: Sulfonated Compounds							
Amber VOC Vial - Sulfuric Acid (EP074)							
QC206	**21-Nov-2024**	**26-Nov-2024**	05-Dec-2024	✓	**28-Nov-2024**	05-Dec-2024	✓
EP074D: Fumigants							
Amber VOC Vial - Sulfuric Acid (EP074)							
QC206	**21-Nov-2024**	**26-Nov-2024**	05-Dec-2024	✓	**28-Nov-2024**	05-Dec-2024	✓
EP074E: Halogenated Aliphatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074)							
QC206	**21-Nov-2024**	**26-Nov-2024**	05-Dec-2024	✓	**28-Nov-2024**	05-Dec-2024	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP074F: Halogenated Aromatic Compounds							
Amber VOC Vial - Sulfuric Acid (EP074)							
QC206	**21-Nov-2024**	**26-Nov-2024**	05-Dec-2024	✓	**28-Nov-2024**	05-Dec-2024	✓
EP074G: Trihalomethanes							
Amber VOC Vial - Sulfuric Acid (EP074)							
QC206	**21-Nov-2024**	**26-Nov-2024**	05-Dec-2024	✓	**28-Nov-2024**	05-Dec-2024	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071)							
QC206	**21-Nov-2024**	**26-Nov-2024**	28-Nov-2024	✓	**27-Nov-2024**	05-Jan-2025	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
QC206	**21-Nov-2024**	**26-Nov-2024**	05-Dec-2024	✓	**28-Nov-2024**	05-Dec-2024	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071)							
QC206	**21-Nov-2024**	**26-Nov-2024**	28-Nov-2024	✓	**27-Nov-2024**	05-Jan-2025	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
QC206	**21-Nov-2024**	**26-Nov-2024**	05-Dec-2024	✓	**28-Nov-2024**	05-Dec-2024	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080)							
QC206	**21-Nov-2024**	**26-Nov-2024**	05-Dec-2024	✓	**28-Nov-2024**	05-Dec-2024	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
QC206	**21-Nov-2024**	**25-Nov-2024**	20-May-2025	✓	**27-Nov-2024**	20-May-2025	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
QC206	**21-Nov-2024**	**25-Nov-2024**	20-May-2025	✓	**27-Nov-2024**	20-May-2025	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
QC206	**21-Nov-2024**	**25-Nov-2024**	20-May-2025	✓	**27-Nov-2024**	20-May-2025	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
QC206	**21-Nov-2024**	**25-Nov-2024**	20-May-2025	✓	**27-Nov-2024**	20-May-2025	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
QC206	**21-Nov-2024**	**25-Nov-2024**	20-May-2025	✓	**27-Nov-2024**	20-May-2025	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Dissolved Mercury by FIMS	EG035F	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	11	**18.18**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	10	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	6	**16.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Dissolved Mercury by FIMS	EG035F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Dissolved Mercury by FIMS	EG035F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Dissolved Mercury by FIMS	EG035F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	10	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015 The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM Schedule B(3)
Volatile Organic Compounds	EP074	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.4, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.

Preparation Methods	*Method*	*Matrix*	*Method Descriptions*
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

QUALITY CONTROL REPORT

Work Order	: **ES2438247**	Page	: 1 of 14
Client	: **SENVERSA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: Zoe Smith	Contact	: Andrew Wotherspoon
Address	: Level 24, 1 Market St, SYDNEY NSW 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: 02 8252 0000	Telephone	: +61-2-8784 8555
Project	: S22013 Mars Road DSI	Date Samples Received	: 21-Nov-2024
Order number	: ----	Date Analysis Commenced	: 25-Nov-2024
C-O-C number	: ----	Issue Date	: 28-Nov-2024
Sampler	: Lucas Dzalakowski		
Site	: ----		
Quote number	: NSW Custom Quote		
No. of samples received	: 1		
No. of samples analysed	: 1		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020F: Dissolved Metals by ICP-MS (QC Lot: 6210193)									
ES2437888-002	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.008	0.008	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.007	0.007	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	0.005	0.005	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.022	0.022	0.0	0% - 20%
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.129	0.131	1.3	0% - 20%
EW2405426-004	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.011	0.011	0.0	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 6210188)									
EN2415291-002	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.1 µg/L	<0.0001	0.0	No Limit
EN2415308-001	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 6212153)									
ES2438153-001	Anonymous	EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 6212153) - continued									
ES2438153-001	Anonymous	EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
ES2438263-001	Anonymous	EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
EP074B: Oxygenated Compounds (QC Lot: 6212153)									
ES2438153-001	Anonymous	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
ES2438263-001	Anonymous	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit
EP074C: Sulfonated Compounds (QC Lot: 6212153)									
ES2438153-001	Anonymous	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
ES2438263-001	Anonymous	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
EP074D: Fumigants (QC Lot: 6212153)									
ES2438153-001	Anonymous	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
ES2438263-001	Anonymous	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP074E: Halogenated Aliphatic Compounds (QC Lot: 6212153)									
ES2438153-001	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
ES2438263-001	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP074E: Halogenated Aliphatic Compounds (QC Lot: 6212153) - continued									
ES2438263-001	Anonymous	EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 6212153)									
ES2438153-001	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
ES2438263-001	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP074G: Trihalomethanes (QC Lot: 6212153)									
ES2438153-001	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
ES2438263-001	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 6212154)									
ES2438263-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 6212154)									
ES2438263-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP080: BTEXN (QC Lot: 6212154)									
ES2438263-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 6212312)									
ES2438247-001	QC206	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
ES2438092-001	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	0.01	0.01	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 6212312)									
ES2438247-001	QC206	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 6212312) - continued									
ES2438247-001	QC206	EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
ES2438092-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 6212312)									
ES2438247-001	QC206	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
ES2438092-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 6212312) - continued									
ES2438092-001	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 6212312)									
ES2438247-001	QC206	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
ES2438092-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 6212312)									
ES2438247-001	QC206	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit
ES2438092-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	0.01	0.01	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 6210193)								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	97.7	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	93.0	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	95.4	85.0	111
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	97.3	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	95.7	83.0	111
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	96.2	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	99.6	81.0	117
EG035F: Dissolved Mercury by FIMS (QCLot: 6210188)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	88.9	83.0	105
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 6212153)								
EP074: Styrene	100-42-5	5	µg/L	<5	10 µg/L	94.2	73.0	119
EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	10 µg/L	96.9	76.0	118
EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	10 µg/L	88.4	69.0	119
EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	10 µg/L	89.8	74.0	116
EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	10 µg/L	88.5	73.0	119
EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	10 µg/L	89.9	74.0	116
EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	10 µg/L	91.7	72.0	116
EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	10 µg/L	91.4	71.0	119
EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	10 µg/L	86.3	65.0	123
EP074B: Oxygenated Compounds (QCLot: 6212153)								
EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	100 µg/L	96.1	61.4	134
EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	100 µg/L	89.6	73.6	130
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	100 µg/L	92.1	66.0	132
EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	100 µg/L	91.8	65.0	137
EP074C: Sulfonated Compounds (QCLot: 6212153)								
EP074: Carbon disulfide	75-15-0	5	µg/L	<5	10 µg/L	108	72.8	127
EP074D: Fumigants (QCLot: 6212153)								
EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	88.8	68.0	122
EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	10 µg/L	93.1	76.0	118
EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	10 µg/L	92.1	62.0	120

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP074D: Fumigants (QCLot: 6212153) - continued								
EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	10 µg/L	90.4	60.0	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	10 µg/L	102	69.0	117
EP074E: Halogenated Aliphatic Compounds (QCLot: 6212153)								
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	100 µg/L	108	60.6	138
EP074: Chloromethane	74-87-3	50	µg/L	<50	100 µg/L	104	67.4	130
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	100 µg/L	97.4	69.4	129
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	91.8	56.0	140
EP074: Chloroethane	75-00-3	50	µg/L	<50	100 µg/L	86.9	61.0	139
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	100 µg/L	84.6	69.0	131
EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	99.0	70.0	124
EP074: Iodomethane	74-88-4	5	µg/L	<5	10 µg/L	116	70.2	128
EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	10 µg/L	89.0	74.0	118
EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	91.7	74.0	120
EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	10 µg/L	90.9	77.0	119
EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	90.9	67.0	119
EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	88.1	73.0	119
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	90.0	62.0	120
EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	10 µg/L	93.3	73.0	123
EP074: Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	93.6	76.0	118
EP074: Dibromomethane	74-95-3	5	µg/L	<5	10 µg/L	97.6	73.0	119
EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	102	72.0	126
EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	98.4	71.0	129
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	99.4	72.0	124
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	99.3	66.0	114
EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	90.7	60.0	120
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	89.9	70.6	128
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	102	70.0	124
EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	104	74.0	126
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	10 µg/L	96.8	71.8	126
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	10 µg/L	102	66.4	136
EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	10 µg/L	94.9	58.0	130
EP074F: Halogenated Aromatic Compounds (QCLot: 6212153)								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	10 µg/L	100	79.0	117
EP074: Bromobenzene	108-86-1	5	µg/L	<5	10 µg/L	95.9	76.0	116

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP074F: Halogenated Aromatic Compounds (QCLot: 6212153) - continued								
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	10 µg/L	90.7	73.0	119
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	10 µg/L	89.5	73.0	119
EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	10 µg/L	96.0	75.0	117
EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	10 µg/L	94.1	74.0	118
EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	10 µg/L	96.6	75.0	117
EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	10 µg/L	95.7	61.0	125
EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	99.7	67.0	123
EP074G: Trihalomethanes (QCLot: 6212153)								
EP074: Chloroform	67-66-3	5	µg/L	<5	10 µg/L	93.9	72.0	120
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	92.4	64.0	118
EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	10 µg/L	101	65.0	115
EP074: Bromoform	75-25-2	5	µg/L	<5	10 µg/L	101	73.5	126
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6210445)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	72.0	53.7	97.0
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	89.8	63.3	107
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	71.8	58.3	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6212154)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	87.8	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6210445)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	81.5	53.9	95.5
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	78.7	57.8	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	57.5	50.5	115
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6212154)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	83.7	75.0	127
EP080: BTEXN (QCLot: 6212154)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	86.8	68.3	119
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	86.4	73.5	120
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	85.6	73.8	122
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	83.0	73.0	122
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	88.7	76.4	123
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	105	75.5	124
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6212312)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	88.8	72.0	130

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6212312) - continued								
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.25 µg/L	85.2	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	85.9	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.25 µg/L	100	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	93.7	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.25 µg/L	89.4	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6212312)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	89.3	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	89.6	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	95.5	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	109	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	90.3	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	97.6	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	99.9	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	94.8	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	105	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	89.2	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	113	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6212312)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	94.6	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	97.2	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	95.8	62.6	147
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	99.2	66.0	145
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	100.0	57.6	145
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	107	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	93.1	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6212312)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	90.9	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.25 µg/L	81.6	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.25 µg/L	82.8	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	80.9	71.4	144

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 6210193)							
ES2438247-001	QC206	EG020A-F: Arsenic	7440-38-2	1 mg/L	100	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	98.0	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	105	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	103	70.0	130
		EG020A-F: Lead	7439-92-1	1 mg/L	103	70.0	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	104	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	104	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 6210188)							
EN2415291-001	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	93.7	70.0	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 6212153)							
ES2438153-001	Anonymous	EP074: 1.1-Dichloroethene	75-35-4	25 µg/L	109	70.0	130
		EP074: Trichloroethene	79-01-6	25 µg/L	101	70.0	130
EP074F: Halogenated Aromatic Compounds (QCLot: 6212153)							
ES2438153-001	Anonymous	EP074: Chlorobenzene	108-90-7	25 µg/L	99.9	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6212154)							
ES2438263-001	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	73.2	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6212154)							
ES2438263-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	75.4	70.0	130
EP080: BTEXN (QCLot: 6212154)							
ES2438263-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	88.5	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	88.3	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	88.7	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	86.4	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	91.0	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	99.4	70.0	130
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6212312)							
ES2437701-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.25 µg/L	85.6	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.25 µg/L	86.3	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.25 µg/L	94.2	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.25 µg/L	104	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.25 µg/L	97.2	65.0	140

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6212312) - continued							
ES2437701-001	Anonymous	EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.25 µg/L	91.6	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6212312)							
ES2437701-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	88.3	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	86.3	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	95.4	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	105	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	89.2	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	92.2	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	98.3	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	92.7	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	103	72.0	134
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	89.6	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	112	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 6212312)							
ES2437701-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	96.8	67.0	137
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	102	68.0	141
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	90.9	62.6	147
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	93.9	66.0	145
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	97.2	57.6	145
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	100	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	89.8	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6212312)							
ES2437701-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.25 µg/L	83.3	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.25 µg/L	89.2	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.25 µg/L	88.2	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.25 µg/L	83.7	71.4	144

Appendix G: Data Validation

Appendix G: Quality Assurance / Quality Control

The data quality assurance and control (QA/QC) procedures adopted by Senversa provide a consistent approach to evaluation of whether the data quality objectives (DQOs) required by the project have been achieved. The process focuses on assessment of the useability of the data in terms of accuracy and reliability in forming conclusions on the condition of the element of the environment being investigated. The approach is generally based on guidance from the following sources:

- Australian Standard (AS) 4482.1-2005: Guide to the investigation and sampling of sites with potentially contaminated soil, Part 1: Non-volatile and semi-volatile compounds.
- National Environment Protection Council (NEPC), National Environment Protection (Assessment of Site Contamination) Amendment Measure No. 1 2013 (NEPM), Schedule B2: Guideline on Site Characterisation.
- NEPC – National Environment Protection (Assessment of Site Contamination) Amendment Measure No. 1 2013 (NEPM), Schedule B3: Guideline on Laboratory Analysis of Potentially Contaminated Soils.
- United States Environmental Protection Agency (USEPA) – Guidance on Systematic Planning Using the Data Quality Objectives Process (EPA QA/G-4).
- USEPA – Guidance on Environmental Data Verification and Data Validation (EPA QA/G-8).

Quality Assurance Procedure

The following data quality objectives, measures and acceptance criteria were adopted to verify compliance with the planned QA procedures:

Quality Assurance Process	Data Quality Element	Objectives and Measure	Acceptance Criteria
Standard Procedures	Comparability, Reproducibility, Representativeness.	Standard field sampling procedures and forms used.	No deviation from standard procedure and forms used.
Equipment Calibration	Accuracy.	All equipment calibrated in accordance with manufacturers specifications.	All equipment calibrated in accordance with manufacturers specifications.
Testing Method Accreditation	Accuracy and Comparability.	NATA accredited methods used for all analyses determined.	Primary and secondary laboratories to use NATA accredited methods for all analytes determined.
Quality Control Sampling Frequency	Precision and Repeatability.	Field QC sampling frequency in accordance with AS4482.1-2005.	Field Duplicates – ≥ 1 in 20 primary samples. Secondary Duplicates – ≥ 1 in 20 primary samples. Rinsate Blanks – ≥ 1 per day, per matrix per equipment. Trip Blanks – ≥ 1 per esky containing samples for volatile analyses.

Quality Assurance Process	Data Quality Element	Objectives and Measure	Acceptance Criteria
	Accuracy, Precision and Comparability.	Laboratory QC analysis frequency in accordance with NEPC (2013), Schedule B3.	Laboratory Duplicates – at least 1 in 10 analyses or one per process batch. Method Blanks – at least 1 per process batch. Surrogate Recoveries – all samples spiked where appropriate (e.g. chromatographic analysis of organics) Laboratory Control Samples – at least 1 per process batch. Matrix Spikes – at least 1 per matrix type per process batch.
Sample Preservation, Handling and Holding Times	Accuracy.	Samples appropriately preserved upon collection , stored and transported, and analysed within holding times.	Sample containers, holding times and preservation in accordance laboratory specific method requirements.
Data Management	Accuracy.	No errors in data transcription.	Entry of field data verified by peer.
Data Useability	Completeness.	Limits of reporting less than adopted beneficial use investigation levels. Sample volumes and analytical methods selected to enable required limits of reporting to be achieved.	Limits of reporting less than investigation levels.

Quality Control Sampling and Analysis

The following data quality objectives, measures and acceptance criteria were adopted to evaluate the validity of the analytical data produced.

Quality Control Process	Data Quality Element	Objectives and Measure	Acceptance Criteria
Field Duplicate Sampling and Analysis	Precision and Field Repeatability.	Field duplicate samples used assess the variability in analyte concentration between samples collected from the sample location and the reproducibility of the laboratory analysis. Where required, resubmission of previously analysed samples for chemicals within their holding times may be undertaken to further assess level of precision.	Analysed for same chemicals as primary sample. RPD1 <30% of mean concentration where both concentrations >20 x limit of reporting. RPD <50% of mean concentration where higher concentration 10 – 20 x limit of reporting. RPD - No limit where both concentrations < 10 x limit of reporting.
Secondary Duplicate Sampling and Analysis	Accuracy.	Results are accurate and free from laboratory error. Secondary duplicate samples sent to a secondary laboratory to assess the accuracy of the analyte concentrations reported by the primary laboratory.	Analysed for same chemicals as primary sample. RPD <30% of mean concentration where both concentrations >20 x limit of reporting. RPD <50% of mean concentration where higher concentration 10 – 20 x limit of reporting. RPD - No limit where both concentrations < 10 x limit of reporting.

[1] Relative Percent Difference (%): Calculated as: (Result No.1 – Result No. 2/Mean Result)*100

Quality Control Process	Data Quality Element	Objectives and Measure	Acceptance Criteria
Field Rinsate Blank Preparation and Analysis	Accuracy and Representativeness.	Cross contamination of samples does not occur between sampling locations due to carry-over from sampling equipment. Rinsate blank samples prepared for each sampling procedure. Where possible the rinsate blanks are prepared immediately after sampling locations known to contain concentrations of the chemicals of concern above the limit of quantification and / or before sampling locations where the chemicals being targeted in the laboratory analysis are to be compared to investigation levels near the limit of quantification of the chemical.	Analyte concentrations below limits of reporting.
Trip Blank Sampling and Analysis	Accuracy and Representativeness.	Cross contamination between samples does not occur in transit or as an artefact of the sample handling procedure. Trip blank samples prepared by the laboratory which accompany the empty sampling containers from the laboratory to the sampling site, and return with the samples to the laboratory to assess whether cross contamination occurs between samples or as an artefact of the sampling procedure.	Analyte concentrations below limits of reporting.
Laboratory QC Analysis	Laboratory Precision and Accuracy.	Laboratory duplicates.	As specified by the laboratory.
		Laboratory control spike.	Dynamic recovery limits as specified by the laboratory.
		Certified reference material.	As specified by the laboratory (generally dynamic recovery limits).
		Surrogate recovery.	Dynamic recovery limits as specified by the laboratory.
		Matrix spike recovery.	Recovery 70% – 130% or dynamic recovery limits specified by laboratory. However note that recovery of phenols is generally significantly lower and a recovery in the range 20% to 130% is considered acceptable by most laboratories.
		Matrix spike recovery duplicate.	RPD < 30%, or as specified by the laboratory.

Data Verification and Validation

The data validation process involved the checking of analytical procedure compliance with acceptance criteria and an assessment of the accuracy and precision of analytical data from the range of quality control indicators generated from both the sampling and analytical programmes.

The checks undertaken are summarised in the attached data validation checklist tables. Field replicate and field blank analytical results relevant to the project are summarised in the following tables:

- **Table QAQC-2**: Soil RPDs.
- **Table QAQC-3**: Water RPDs.
- **Table QAQC-4**: Soil Blanks.
- **Table QAQC-5**: Water Blanks.
- **Table QAQC-6**: Trip Spikes.

Instances where the data quality acceptance criteria were not achieved are discussed below.

Intra-laboratory Duplicate Analysis

Intra-laboratory RPD exceedances within soil occurred for:

- BH18_0.25-0.3 and QC100 for chromium (53%), copper (152%), lead (114%) and zinc (132%).
- BH17_0.7-0.8 and QC103 for chromium (49%).
- BH01_0.4-0.5 and QC104 for chromium (46%) and lead (65%).

These RPD exceedances are considered to be a result of the heterogenous nature of fill analysed for these samples. To be conservative, the highest value was used for assessment purposes.

Inter-laboratory Duplicate Analysis

Inter-laboratory RPD exceedances in soil occurred for:

- BH09_0.18-0.26 and QC205 for zinc (42%).

Again, these RPD exceedances are considered to be a result of the heterogenous nature of fill analysed for these samples. To be conservative, the highest value was used for assessment purposes.

Laboratory Duplicate Analysis

Laboratory duplicate RPD exceedances for the soil sampling program were reported within:

- Batch 366197 in BH30_0.0-0.1 for TRH >C16-C34 Fraction (89%).
- Batch 366546 in BH04_0.24-0.3 for copper (93%), nickel (72%), benzo(a)pyrene (138%), fluoranthene (89%), phenanthrene (55%) and pyrene (82%).

The laboratory reported that these exceedances were a result of heterogeneity of the fill analysed. Additional laboratory triplicate samples were analysed for metals.

Additionally, laboratory duplicate RPD for TRH - Semivolatile Fraction was not analysed at the expected frequency in batch ES2438247 for the groundwater sampling program, this was a result of the low number of primary samples within this workorder. Given that all other laboratory duplicate RPDs were analysed at the expected rate and within acceptable limits, this is not considered to impact the quality of the data.

Laboratory Matrix Spike

Spike recoveries failed internal acceptance criteria within:

- Batch 366472 for lead, TRH >C34-C40 Fraction and TRH C29-C36 Fraction. The lab stated that the percent recovery was not possible to report due to the high concentration of the element/s in the sample/s. However, an acceptable recovery was obtained for the LCS.
- Batch ES2438247 for TRH – Semivolatile Fraction. The lab stated that the matrix spike was not analysed at the expected rate. Given that the laboratory matrix spike for all other analytes were analysed at the expected frequency and within acceptable limits, this is not considered to significantly impact the quality of the data.

Rinsate Blank Sample Analysis

Concentrations of zinc (0.002 mg/L) were reported above the laboratory limit of reporting (LOR) (0.001 mg/L) in rinsate sample QC305. Given that all other analytes were non-detect, and that concentrations were only marginally above the LOR (0.001 mg/L), this is not considered to impact the quality of the data.

QC Sample Frequency

Soil - All QC samples were analysed at the required frequencies except for trip blanks which were analysed at a rate of 1 per 1.25 days (total of four trip blank samples across the five sampling days). Given that the frequency is only marginally less than the acceptance criteria, and that all trip blank results were non-detect, this is not considered to significantly impact the quality of the data.

Groundwater - An intra-laboratory duplicate was not analysed as part of the groundwater sampling program due to the low number of primary samples. However, given that all inter-laboratory duplicate results were within the acceptance criteria, this is not considered to significantly impact the quality of the data.

Sample Preservation, Handling and Holding Times

Samples were extracted and analysed within recommended holding times, with the following exceptions:

- Holding time for svTRH (C10-C40) analysis was exceeded for rinsate samples QC301 in batch 366197 and QC300 in batch 366091.

Sample receipt temperatures were within the recommended range (≤6°C) in all batches with the exception of:

- 366472 was received at 8°C with ice present.
- 366546 was received at 8°C without ice present.
- 367014 was received at 21°C with ice present.
- ES2437730 was received at 6.2°C, 6.5°C and 7.0°C with ice present.
- ES2438247 was received at 9.2°C, 9.8°C and 10.3°C with ice present.

This is considered due to samples not having sufficient time to cool before arrival at the laboratory. Samples were kept on ice in all batches except for 366546. Given that the sample temperatures were only marginally above the acceptance criteria, this is not considered to significantly impact the quality of the data.

Data Suitability

While a small number of QC results were outside specified acceptance criteria, these were not considered to significantly impact on the quality or representativeness of the data, and majority of results indicated that the precision and accuracy of the data was within acceptable limits. The results are therefore considered to be representative of chemical concentrations in the environmental media sampled at the time of sampling, and to be suitable to be used for their intended purpose in forming conclusions relating to the contamination status of soil and groundwater at the site.

Sampling Data Validation Checklist

senversa

Project Name: Detailed Site Investigation **Project Number:** S22013

Sampling Information

		Sample Type	No.	Frequency			DQI Compliant?
Sample Media:	Soil	Primary:	47	-			
Date Sampled:	11-15 November 2024	Intra-laboratory Duplicate:	3	1 per	15.67	primary samples	Yes
Days of Sampling:	5	Inter-laboratory Duplicate:	3	1 per	15.67	primary samples	Yes
Sampling Personnel:	LD, HY	Trip Blank:	4	1 per	1.25	day	Substantial
Primary Laboratory:	Envirolab	Rinsate Blank:	5	1 per	1	day	Yes
Secondary Laboratory:	ALS	Trip Spike:	5	1 per	1	day	Yes
No. Batches:	6 primary, 1 secondary	Other: Laboratory Triplicate	2				-
Batch IDs:	366091, 366197, 366346, 366472, 366546, 366635, ES2437730						

Precision

Intra-laboratory Duplicate analyses

Analyte Group	Primary ID	Duplicate ID	DQI Compliant?	Comments
Metals	BH18_0.25-0.3	QC100	Substantial	RPDs for chromium (53%), copper (152%), lead (114%) and zinc (132%) were above acceptable limits (30%).
Metals	BH17_0.7-0.8	QC103	Substantial	RPD for chromium (49%) was above acceptable limits (30%).
Metals	BH01_0.4-0.5	QC104	Substantial	RPDs for chromium (46%) and lead (65%) were above acceptable limits (30%).

Inter-laboratory Duplicate analyses

Analyte Group	Primary ID	Duplicate ID	DQI Compliant?	Comments
Metals, TRH, BTEX, PAH, PFAS	BH02_0.2-0.3	QC201	Yes	All RPDs were within acceptable limits.
Metals, TRH, BTEX, PAH, PFAS	BH17_1.6-1.7	QC203	Yes	All RPDs were within acceptable limits.
Metals	BH09_0.18-0.26	QC205	Substantial	RPD for zinc (42%) was above acceptable limits (30%).

Laboratory Duplicate analyses

Analyte Group	Batch No.	DQI Compliant?	Comments
Metals, TRH, BTEX, PAH, VOCs, PCB, OCP, PFAS	366091	Yes	All laboratory duplicate RPDs were within acceptable limits.
TRH	366197	Substantial	RPD for TRH >C16-C34 Fraction (89%) was above acceptable limits (30%). The RPD was accepted by the laboratory due to the non-homogenous nature of the samples.
Metals, TRH, BTEX, PAH, VOCs, PCB, OCP, PFAS	366346	Yes	All laboratory duplicate RPDs were within acceptable limits.
Metals, TRH, BTEX, PAH, VOCs, PCB, OCP, PFAS	366472	Yes	All laboratory duplicate RPDs were within acceptable limits.
Metals, PAH	366546	Substantial	RPDs for copper (93%), nickel (72%), benzo(a)pyrene (138%), fluoranthene (89%), phenanthrene (55%) and pyrene (82%) were above acceptable limits (30%). The PAH RPDs were accepted by the laboratory due to the non-homogenous nature of the samples. As a result of the elevated metals RPDs, a triplicate result was issued by the laboratory.
Metals, TRH, BTEX, PAH, VOCs, PCB, OCP, PFAS	366635	Yes	All laboratory duplicate RPDs were within acceptable limits.
Metals, TRH, BTEX, PAH, VOCs, PCB, OCP, PFAS	ES2437730	Yes	All laboratory duplicate RPDs were within acceptable limits.

Accuracy

Laboratory Control Sample (LCS) analyses

Batch No.(s)	DQI Compliant?	Comments
All as above	Yes	

Surrogate Compound or Reference analyses

Batch No.(s)	DQI Compliant?	Comments
All as above	Yes	

Spike Samples

Type	Analyte Group	DQI Compliant?	Comments
Laboratory matrix spike (MS)	Metals, TRH, BTEX, PAH, VOCs, PCB, OCP, PFAS	Substantial	Percent recovery for the lead, TRH >C34-C40 Fraction and TRH C29-C36 Fraction matrix spikes in batch 366472 were not possible to report as the high concentration of analytes in the sample caused interference.
Trip Spike (TS)	BTEX	Yes	

Blank Samples

Type	Analyte Group	DQI Compliant?	Comments
Laboratory Blank (LB):	Metals, TRH, BTEX, PAH, VOCs, PCB, OCP, PFAS	Yes	
Trip Blank (TB):	PFAS	Yes	
Rinsate Blank (RB):	Metals, TRH, BTEXN, PFAS	Yes	

Sampling Data Validation Checklist

senversa

Project Name:	Detailed Site Investigation	**Project Number:**	S22013

Sampling Information

Sample Media:	Soil
Date Sampled:	11-15 November 2024
Days of Sampling:	5
Sampling Personnel:	LD, HY
Primary Laboratory:	Envirolab
Secondary Laboratory:	ALS
No. Batches:	6 primary, 1 secondary
Batch IDs:	366091, 366197, 366346, 366472, 366546, 366635, ES2437730

Sample Type	No.	Frequency			DQI Compliant?
Primary:	47	-			
Intra-laboratory Duplicate:	3	1 per	15.67	primary samples	Yes
Inter-laboratory Duplicate:	3	1 per	15.67	primary samples	Yes
Trip Blank:	4	1 per	1.25	day	Substantial
Rinsate Blank:	5	1 per	1	day	Yes
Trip Spike:	5	1 per	1	day	Yes
Other: Laboratory Triplicate	2				-

Field equipment calibration

Equipment	Calibrated?	Record?	Equipment	Calibrated?	Record?
PID	Yes	Yes			

Representativeness

	DQI Compliant?	Comments
Appropriate & standard sampling methods used for media/CoPC?	Yes	
Appropriate decontamination procedures carried out?	Yes	
Samples collected in appropriate containers / preservatives?	Yes	
Samples received at appropriate temperature / or with ice present?	Substantial	Elevated receipt temperatures noted for batches 366472 (8°C), 366546 (8°C) and ES2437730 (6.2-7°C). Ice was present within all eskies except for those in batch 366546.
Samples extracted / analysed within holding times?	Substantial	Rinsate blank samples QC301 and QC300 in batches 366197 and 366091, respectively, exceeded the holding time for svTRH (C10-C40).
Samples analysed using appropriate NATA accredited methods?	Yes	

Comparability

	DQI Compliant?	Comments
Consistent sampling methods used?	Yes	
Sampler(s) appropriately trained?	Yes	
Consistent site conditions and field scientist(s)?	Yes	
Consistent analytical methods used?	Yes	

Completeness

	DQI Compliant?	Comments
Field records / logs complete and retained?	Yes	
Frequency of QC samples adequate per sampling plan?	Substantial	All QC samples were analysed at the required frequencies except for trip blanks which were analysed at a rate of 1 per 1.25 days (total of four trip blank samples across the five sampling days). Given that the frequency is only marginally less than the acceptance criteria, and that all trip blank results were non-detect, this is not considered to significantly impact the quality of the data.
Requested analyses completed per sampling plan?	Yes	
Appropriate PQLs? (relative to adopted criteria; available)	Yes	
Chain-of-custody forms complete and correct?	Yes	
QC check of data tables (against field records / laboratory reports)?	Yes	

Data Use Suitability

	Yes / No	
Data from critical samples considered of suitable quality?	Yes	
Data considered suitable for the objective of the assessment?	Yes	

Overall Comments: While a small number of QC results were outside specified acceptance criteria, these were not considered to significantly impact on the quality or representativeness of the data, and majority of results indicated that the precision and accuracy of the data was within acceptable limits. The results are therefore considered to be representative of chemical concentrations in the environmental media sampled at the time of sampling, and to be suitable to be used for their intended purpose in forming conclusions relating to the contamination status of soil at the site.

Performed By:	Megan Ferguson	Checked By:	Zoe Smith
Date:	18/12/2024	Date:	21/01/2025

Sampling Data Validation Checklist

senversa

Project Name: Detailed Site Investigation **Project Number:** S22013

Sampling Information

Sample Media:	Water
Date Sampled:	21/11/2024
Days of Sampling:	1
Sampling Personnel:	LD
Primary Laboratory:	Envirolab
Secondary Laboratory:	ALS
No. Batches:	1 primary, 1 secondary
Batch IDs:	367014, ES2438247

Sample Type	No.	Frequency			DQI Compliant?
Primary:	5	-			
Intra-laboratory Duplicate:	0	1 per	NA	primary samples	Substantial
Inter-laboratory Duplicate:	1	1 per	5	primary samples	Yes
Trip Blank:	1	1 per	1	day / batch	Yes
Rinsate Blank:	1	1 per	1	day / batch	Yes
Trip Spike:	1	1 per	1	day / batch	Yes

Precision

Intra-laboratory Duplicate analyses

Analyte Group	Primary ID	Duplicate ID	DQI Compliant?	Comments
			-	Intra-laboratory duplicates were not analysed.

Inter-laboratory Duplicate analyses

Analyte Group	Primary ID	Duplicate ID	DQI Compliant?	Comments
Metals, TRH, BTEXN, VOCs, PFAS	MW02	QC206	Yes	All RPDs were within acceptable limits (30%).

Laboratory Duplicate analyses

Analyte Group	Batch No.	DQI Compliant?	Comments
Metals, TRH, BTEXN, VOCs, PFAS	367014	Yes	
TRH	ES2438247	Substantial	Laboratory duplicate RPD for TRH - Semi volatile Fraction was not analysed at the expected frequency. Laboratory duplicate RPDs for all other analytes were analysed at the expected rate and within acceptable limits.

Accuracy

Laboratory Control Sample (LCS) analyses

Batch No.(s)	DQI Compliant?	Comments
All as above	Yes	

Surrogate Compound or Reference analyses

Batch No.(s)	DQI Compliant?	Comments
All as above	Yes	

Spike Samples

Type	Analyte Group	DQI Compliant?	Comments
Laboratory matrix spike (MS)	Metals, TRH, BTEXN, VOCs, PFAS	Yes	Laboratory matrix spikes for analytes within batch 367014 were analysed at the expected rate and within acceptable limits.
Laboratory matrix spike (MS)	Metals, TRH, BTEXN, VOCs, PFAS	Substantial	Laboratory matrix spike sample was not analysed at the expected rate for TRH - Semi volatile Fraction in batch ES2438247. Matrix spikes for all other analytes were analysed at the expected rate and within acceptable limits.
Trip Spike (TS)	BTEX	Yes	

Blank Samples

Type	Analyte Group	DQI Compliant?	Comments
Laboratory Blank (LB):	Metals, TRH, BTEXN, VOCs, PFAS	Yes	
Trip Blank (TB):	PFAS	Yes	
Rinsate Blank (RB):	Metals, TRH, BTEXN, PFAS	Substantial	Concentrations of zinc (0.002 mg/L) were reported above the LOR (0.001 mg/L) in rinsate sample QC305. Given that all other analytes were non-detect, and that concentrations were only marginally above the LOR, this is not considered to impact the quality of the data.

Field equipment calibration

Equipment	Calibrated?	Record?	Equipment	Calibrated?	Record?
PID	Yes	Yes	WQM	Yes	Yes
IP	Yes	Yes	Peristaltic Pump	Yes	Yes

Represent-ativeness

	DQI Compliant?	Comments
Appropriate & standard sampling methods used for media/CoPC?	Yes	
Appropriate decontamination procedures carried out?	Yes	
Samples collected in appropriate containers / preservatives?	Yes	
Samples received at appropriate temperature / or with ice present?	Substantial	Elevated receipt temperatures noted for batches 367014 (21°C) and ES2438247 (9.2-10.3°C). Ice was present within all eskies.
Samples extracted / analysed within holding times?	Yes	
Samples analysed using appropriate NATA accredited methods?	Yes	

Compar-ability

	DQI Compliant?	Comments
Consistent sampling methods used?	Yes	
Sampler(s) appropriately trained?	Yes	
Consistent site conditions and field scientist(s)?	Yes	
Consistent analytical methods used?	Yes	

Completeness

	DQI Compliant?	Comments
Field records / logs complete and retained?	Yes	
Frequency of QC samples adequate per sampling plan?	Substantial	An intra-laboratory duplicate was not analysed as part of the groundwater sampling program. However, given that all inter-laboratory duplicate results were within the acceptance criteria, this is not considered to significantly impact the quality of the data.
Requested analyses completed per sampling plan?	Yes	
Appropriate PQLs? (relative to adopted criteria; available)	Yes	
Chain-of-custody forms complete and correct?	Yes	
QC check of data tables (against field records / laboratory reports)?	Yes	

Data Use Suitability

	Yes / No	Comments
Data from critical samples considered of suitable quality?	Yes	
Data considered suitable for the objective of the assessment?	Yes	

Overall Comments: While a small number of QC results were outside specified acceptance criteria, these were not considered to significantly impact on the quality or representativeness of the data, and majority of results indicated that the precision and accuracy of the data was within acceptable limits. The results are therefore considered to be representative of chemical concentrations in the environmental media sampled at the time of sampling, and to be suitable to be used for their intended purpose in forming conclusions relating to the contamination status of groundwater at the site.

Performed By:	Megan Ferguson	Checked By:	Zoe Smith
Date:	19/12/2024	Date:	21/01/2025

Table QAQC T2: Soil RPD Results
12 Mars road
Goodman Property Services (Aust) Pty Ltd
S22013

		Location Code	BH18	BH18		BH02	BH02		BH01	BH01		BH17	BH17		BH17	BH17		BH09	BH09	
		Field ID	BH18_0.25-0.3	QC100		BH02_0.2-0.3	QC201		BH01_0.4-0.5	QC104		BH17_0.7-0.8	QC103		BH17_1.6-1.7	QC203		BH09_0.18-0.26	QC205	
		Date	12/11/2024	12/11/2024		13/11/2024	13/11/2024		14/11/2024	14/11/2024		14/11/2024	14/11/2024		14/11/2024	14/11/2024		15/11/2024	15/11/2024	
		Sample Type	Primary	Field_D		Primary	Interlab_D		Primary	Field_D		Primary	Field_D		Primary	Interlab_D		Primary	Interlab_D	
		Lab Report No.	366197	366197	RPD	366346	ES2437730	RPD	366472	366472	RPD	366472	366472	RPD	366472	ES2437730	RPD	366546	ES2437730	RPD
	Unit	LOR																		
Metals																				
Arsenic	mg/kg	4	<4	<4	0	<4	<5	0	6	5	18	6	5	18	<4	7	55	5	<5	0
Cadmium	mg/kg	0.4	<0.4	<0.4	0	<0.4	<1	0	<0.4	<0.4	0	<0.4	<0.4	0	<0.4	<1	0	<0.4	<1	0
Chromium	mg/kg	1	18	31	**53**	16	15	6	24	15	**46**	14	23	**49**	22	24	9	5	4	22
Copper	mg/kg	1	3	22	**152**	10	9	11	13	10	26	4	4	0	3	<5	0	2	<5	0
Lead	mg/kg	1	8	29	**114**	14	20	35	43	22	**65**	14	12	15	10	10	0	10	10	0
Mercury	mg/kg	0.1	<0.1	0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0
Nickel	mg/kg	1	6	3	67	9	10	11	13	9	36	5	4	22	1	<2	0	2	2	0
Zinc	mg/kg	1	8	39	**132**	31	28	10	43	32	29	18	14	25	4	<5	0	29	19	**42**
BTEX																				
Benzene	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.2	0
Toluene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Ethylbenzene	mg/kg	0.5	<1	<1	0	<1	<0.5	0	<1	<1	0	<1	<1	0	<1	<0.5	0	<1	<0.5	0
Xylene (m & p)	mg/kg	0.5	<2	<2	0	<2	<0.5	0	<2	<2	0	<2	<2	0	<2	<0.5	0	<2	<0.5	0
Xylene (o)	mg/kg	0.5	<1	<1	0	<1	<0.5	0	<1	<1	0	<1	<1	0	<1	<0.5	0	<1	<0.5	0
Total Xylene	mg/kg	0.5	<1	<1	0	<1	<0.5	0	<1	<1	0	<1	<1	0	<1	<0.5	0	<1	<0.5	0
Total Petroleum Hydrocarbons																				
C6-C9 Fraction	mg/kg	10	<25	<25	0	<25	<10	0	<25	<25	0	<25	<25	0	<25	<10	0	<25	<10	0
C10-C14 Fraction	mg/kg	50	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0
C15-C28 Fraction	mg/kg	100	<100	110	10	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0
C29-C36 Fraction	mg/kg	100	<100	130	26	<100	<100	0	<100	<100	0	110	150	31	<100	<100	0	<100	<100	0
C10-C36 Fraction (Sum)	mg/kg	50	<50	240	131	<50	<50	0	<50	<50	0	110	150	31	<50	<50	0	<50	<50	0
Total Recoverable Hydrocarbons																				
C6-C10 Fraction	mg/kg	10	<25	<25	0	<25	<10	0	<25	<25	0	<25	<25	0	<25	<10	0	<25	<10	0
C6-C10 Fraction minus BTEX (F1)	mg/kg	10	<25	<25	0	<25	<10	0	<25	<25	0	<25	<25	0	<25	<10	0	<25	<10	0
>C10-C16 Fraction	mg/kg	50	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0
>C10-C16 Fraction minus naphthalene (F2)	mg/kg	50	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0
>C16-C34 Fraction	mg/kg	100	<100	190	62	<100	<100	0	<100	100	0	<100	160	46	<100	<100	0	<100	<100	0
>C34-C40 Fraction	mg/kg	100	<100	<100	0	<100	<100	0	<100	<100	0	<100	150	40	<100	<100	0	<100	<100	0
>C10-C40 Fraction (Sum)	mg/kg	50	<50	190	117	<50	<50	0	<50	100	67	<50	310	144	<50	<50	0	<50	<50	0
PAHs																				
Acenaphthene	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.5	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.5	0	<0.1	<0.5	0
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.5	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.5	0	<0.1	<0.5	0
Anthracene	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.5	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.5	0	<0.1	<0.5	0
Benz(a)anthracene	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.5	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.5	0	0.2	<0.5	0
Benzo(a)pyrene	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.5	0	0.06	0.08	29	<0.05	<0.05	0	<0.05	<0.5	0	0.2	<0.5	0
Benzo(g,h,i)perylene	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.5	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.5	0	0.1	<0.5	0
Benzo(b+j+k)fluoranthene	mg/kg	0.2	<0.2	<0.2	0	<0.2	-	-	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	-	-	0.3	-	-
Chrysene	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.5	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.5	0	0.2	<0.5	0
Dibenz(a,h)anthracene	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.5	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.5	0	<0.1	<0.5	0
Fluoranthene	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.5	0	0.1	0.2	67	<0.1	<0.1	0	<0.1	<0.5	0	0.4	<0.5	0
Fluorene	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.5	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.5	0	<0.1	<0.5	0
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.5	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.5	0	0.1	<0.5	0
Naphthalene	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.5	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.5	0	<0.1	<0.5	0
Naphthalene (VOC)	mg/kg	1	<1	<1	0	<1	<1	0	<1	<1	0	<1	<1	0	<1	<1	0	<1	<1	0
Phenanthrene	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.5	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.5	0	0.2	<0.5	0
Pyrene	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.5	0	0.1	0.2	67	<0.1	<0.1	0	<0.1	<0.5	0	0.3	<0.5	0
Benzo(a)pyrene TEQ (Zero)	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0
Sum of Polycyclic aromatic hydrocarbons (PAH)	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.5	0	0.3	0.4	29	<0.05	<0.05	0	<0.05	<0.5	0	1.9	<0.5	0
(n:2) Fluorotelomer Sulfonic Acids																				
6:2 Fluorotelomer Sulfonate (6:2 FtS)	mg/kg	0.0001	<0.0001	<0.0001	0	<0.0001	<0.0005	0	-	-	-	-	-	-	-	-	-	<0.0001	-	-
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	mg/kg	0.0002	<0.0002	<0.0002	0	<0.0002	<0.0005	0	-	-	-	-	-	-	-	-	-	<0.0002	-	-
Perfluoroalkane Carboxylic Acids																				
Perfluorooctanoic acid (PFOA)	mg/kg	0.0001	<0.0001	<0.0001	0	0.0002	<0.0002	0	-	-	-	-	-	-	-	-	-	<0.0001	-	-
Perfluoroalkane Sulfonic Acids																				
Perfluorooctanesulfonic acid (PFOS)	mg/kg	0.0001	<0.0001	<0.0001	0	0.0019	0.0021	10	-	-	-	-	-	-	-	-	-	0.0004	-	-
Perfluorohexane sulfonic acid (PFHxS)	mg/kg	0.0001	<0.0001	<0.0001	0	<0.0001	<0.0002	0	-	-	-	-	-	-	-	-	-	<0.0001	-	-
Perfluorobutane sulfonic acid (PFBS)	mg/kg	0.0001	<0.0001	<0.0001	0	<0.0001	<0.0002	0	-	-	-	-	-	-	-	-	-	<0.0001	-	-
Sum of PFHxS and PFOS	mg/kg	0.0001	<0.0001	<0.0001	0	0.0019	0.0021	10	-	-	-	-	-	-	-	-	-	0.0004	-	-
PFAS																				
Sum of US EPA PFAS (PFOS + PFOA)	mg/kg	0.0001	<0.0001	<0.0001	0	0.0021	-	-	-	-	-	-	-	-	-	-	-	0.0004	-	-
Sum of PFAS	mg/kg	0.0001	<0.0001	<0.0001	0	0.0021	-	-	-	-	-	-	-	-	-	-	-	0.0004	-	-

***RPDs have only been considered where a concentration is greater than 1 times the LOR.**
****Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each LOR multiplier range are: 1000 (1 - 10 x LOR); 50 (10 - 20 x LOR); 30 (> 20 x LOR))**
*****Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory**

Table QAQC T3: Water RPD Results
12 Mars road
Goodman Property Services (Aust) Pty Ltd
S22013

	Location Code		MW02	MW02	
	Field ID		MW02	QC206	
	Date		21/11/2024	21/11/2024	
	Sample Type		Normal	Interlab_D	
	Lab Report Number		367014	ES2438247	RPD
	Unit	LOR			
Metals					
Arsenic (filtered)	mg/L	0.001	<0.001	<0.001	0
Cadmium (filtered)	mg/L	0.0001	<0.0001	<0.0001	0
Chromium (filtered)	mg/L	0.001	0.001	0.001	0
Copper (filtered)	mg/L	0.001	0.006	0.006	0
Lead (filtered)	mg/L	0.001	0.003	0.002	40
Mercury (filtered)	mg/L	0.00005	<0.00005	<0.0001	0
Nickel (filtered)	mg/L	0.001	0.019	0.021	10
Zinc (filtered)	mg/L	0.001	0.062	0.064	3
BTEX					
Benzene	µg/L	1	<1	<1	0
Toluene	µg/L	1	<1	<2	0
Ethylbenzene	µg/L	1	<1	<2	0
Xylene (m & p)	µg/L	2	<2	<2	0
Xylene (o)	µg/L	1	<1	<2	0
Total Petroleum Hydrocarbons					
C6-C9 Fraction	µg/L	10	<10	<20	0
C10-C14 Fraction	µg/L	50	<50	<50	0
C15-C28 Fraction	µg/L	100	<100	<100	0
C29-C36 Fraction	µg/L	50	<100	<50	0
C10-C36 Fraction (Sum)	µg/L	50	<50	<50	0
Total Recoverable Hydrocarbons					
C6-C10 Fraction	µg/L	10	<10	<20	0
C6-C10 Fraction minus BTEX (F1)	µg/L	10	<10	<20	0
>C10-C16 Fraction	µg/L	50	<50	<100	0
>C10-C16 Fraction minus naphthalene (F2)	µg/L	50	<50	<100	0
>C16-C34 Fraction	µg/L	100	<100	<100	0
>C34-C40 Fraction	µg/L	100	<100	<100	0
>C10-C40 Fraction (Sum)	µg/L	50	<50	<100	0
PAHs					
Naphthalene (VOC)	µg/L	1	<1	<5	0
MAH					
1,2,4-Trimethylbenzene	µg/L	1	<1	<5	0
1,3,5-Trimethylbenzene	µg/L	1	<1	<5	0
Isopropylbenzene	µg/L	1	<1	<5	0
n-Butylbenzene	µg/L	1	<1	<5	0
n-Propylbenzene	µg/L	1	<1	<5	0
p-Isopropyltoluene	µg/L	1	<1	<5	0
sec-Butylbenzene	µg/L	1	<1	<5	0
tert-Butylbenzene	µg/L	1	<1	<5	0
Styrene	µg/L	1	<1	<5	0
Halogenated Benzenes					
1,2,3-Trichlorobenzene	µg/L	1	<1	<5	0
1,2-Dichlorobenzene	µg/L	1	<1	<5	0
1,2,4-Trichlorobenzene	µg/L	1	<1	<5	0
1,3-Dichlorobenzene	µg/L	1	<1	<5	0
2-Chlorotoluene	µg/L	1	<1	<5	0
1,4-Dichlorobenzene	µg/L	1	<1	<5	0
4-Chlorotoluene	µg/L	1	<1	<5	0
Bromobenzene	µg/L	1	<1	<5	0
Chlorobenzene	µg/L	1	<1	<5	0
Halogenated Hydrocarbons					
1,2-Dibromoethane	µg/L	1	<1	<5	0
Bromomethane	µg/L	10	<10	<50	0
Dichlorodifluoromethane	µg/L	10	<10	<50	0
Trichlorofluoromethane	µg/L	10	<10	<50	0
Chlorinated Hydrocarbons					
1,1-Dichloropropene	µg/L	1	<1	<5	0
1,1-Dichloroethane	µg/L	1	<1	<5	0
1,1-Dichloroethene	µg/L	1	<1	<5	0
1,1,1,2-Tetrachloroethane	µg/L	1	<1	<5	0
1,1,1-Trichloroethane	µg/L	1	<1	<5	0
1,2-Dibromo-3-chloropropane	µg/L	1	<1	<5	0
1,1,2-Trichloroethane	µg/L	1	<1	<5	0
1,1,2,2-Tetrachloroethane	µg/L	1	<1	<5	0
1,2,3-Trichloropropane	µg/L	1	<1	<5	0
1,2-Dichloroethane	µg/L	1	<1	<5	0
1,3-Dichloropropane	µg/L	1	<1	<5	0
1,2-Dichloropropane	µg/L	1	<1	<5	0
2,2-Dichloropropane	µg/L	1	<1	<5	0
Bromodichloromethane	µg/L	1	<1	<5	0
Bromoform	µg/L	1	<1	<5	0
Carbon Tetrachloride	µg/L	1	<1	<5	0
Chlorodibromomethane	µg/L	1	<1	<5	0
Chloroethane	µg/L	10	<10	<50	0
Chloroform	µg/L	1	<1	<5	0
Chloromethane	µg/L	10	<10	<50	0
cis-1,2-Dichloroethene	µg/L	1	<1	<5	0
Dibromomethane	µg/L	1	<1	<5	0
cis-1,3-Dichloropropene	µg/L	1	<1	<5	0
Hexachlorobutadiene	µg/L	1	<1	<5	0
Tetrachloroethene	µg/L	1	<1	<5	0
trans-1,2-Dichloroethene	µg/L	1	<1	<5	0
trans-1,3-Dichloropropene	µg/L	1	<1	<5	0
Trichloroethene	µg/L	1	<1	<5	0
Vinyl Chloride	µg/L	10	<10	<50	0
(n:2) Fluorotelomer Sulfonic Acids					
6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	0.01	<0.01	<0.05	0
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	µg/L	0.02	<0.02	<0.05	0
Perfluoroalkane Carboxylic Acids					
Perfluorooctanoic acid (PFOA)	µg/L	0.01	<0.01	<0.01	0
Perfluoroalkane Sulfonic Acids					
Perfluorooctanesulfonic acid (PFOS)	µg/L	0.01	<0.01	<0.01	0
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	0.01	<0.01	0
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.01	<0.01	<0.02	0
Sum of PFHxS and PFOS	µg/L	0.01	0.01	<0.01	0
PFAS					
Sum of PFAS	µg/L	0.01	0.01	<0.01	0

***RPDs have only been considered where a concentration is greater than 1 times the LOR.**
****Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each LOR multiplier range are: 1000 (1 - 10 x LOR); 50 (10 - 20 x LOR); 30 (> 20 x LOR))**
*****Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory**

Table QAQC T4: Soil Trip Blank Results
12 Mars road
Goodman Property Services (Aust) Pty Ltd
S22013

		Field ID	QC500	QC503	QC505	QC507
		Date	12/11/2024	13/11/2024	14/11/2024	15/11/2024
		Sample Type	Trip Blank	Trip Blank	Trip Blank	Trip Blank
		Lab Report No.	366197	366346	366472	366546
	Unit	LOR				
(n:2) Fluorotelomer Sulfonic Acids						
6:2 Fluorotelomer Sulfonate (6:2 FtS)	mg/kg	0.0001	<0.0001	<0.0001	<0.0001	<0.0001
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	mg/kg	0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroalkane Carboxylic Acids						
Perfluorooctanoic acid (PFOA)	mg/kg	0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Perfluoroalkane Sulfonic Acids						
Perfluorooctanesulfonic acid (PFOS)	mg/kg	0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Perfluorohexane sulfonic acid (PFHxS)	mg/kg	0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Perfluorobutane sulfonic acid (PFBS)	mg/kg	0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Sum of PFHxS and PFOS	mg/kg	0.0001	<0.0001	<0.0001	<0.0001	<0.0001
PFAS						
Sum of US EPA PFAS (PFOS + PFOA)	mg/kg	0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Sum of PFAS	mg/kg	0.0001	<0.0001	<0.0001	<0.0001	<0.0001

Table QAQC T5: Water Rinsate Blank Results
12 Mars road
Goodman Property Services (Aust) Pty Ltd
S22013

		Field ID	QC300	QC301	QC302	QC303	QC304	QC305	QC509
		Date	11/11/2024	12/11/2024	13/11/2024	14/11/2024	15/11/2024	21/11/2024	21/11/2024
		Sample Type	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Rinsate	Trip Blank
		Lab Report No.	366091	366197	366346	366472	366635	367014	367014
	Unit	LOR							
Metals									
Arsenic	mg/L	0.001	<0.05	<0.05	<0.05	<0.05	<0.001	<0.001	-
Cadmium	mg/L	0.0001	<0.01	<0.01	<0.01	<0.01	<0.0001	<0.0001	-
Chromium	mg/L	0.001	<0.01	<0.01	<0.01	<0.01	<0.001	<0.001	-
Copper	mg/L	0.001	<0.01	<0.01	<0.01	<0.01	<0.001	<0.001	-
Mercury	mg/L	0.00005	<0.0005	<0.0005	<0.0005	<0.0005	<0.00005	<0.00005	-
Nickel	mg/L	0.001	<0.02	<0.02	<0.02	<0.02	<0.001	<0.001	-
Zinc	mg/L	0.001	<0.02	<0.02	<0.02	<0.02	<0.001	0.002	-
BTEX									
Benzene	µg/L	1	<1	<1	<1	<1	<1	<1	-
Toluene	µg/L	1	<1	<1	<1	<1	<1	<1	-
Ethylbenzene	µg/L	1	<1	<1	<1	<1	<1	<1	-
Xylene (m & p)	µg/L	2	<2	<2	<2	<2	<2	<2	-
Xylene (o)	µg/L	1	<1	<1	<1	<1	<1	<1	-
Total Petroleum Hydrocarbons									
C6-C9 Fraction	µg/L	10	<10	<10	<10	<10	<10	<10	-
C10-C14 Fraction	µg/L	50	<50	<50	<50	<50	<50	<50	-
C15-C28 Fraction	µg/L	100	<100	<100	<100	<100	<100	<100	-
C29-C36 Fraction	µg/L	100	<100	<100	<100	<100	<100	<100	-
C10-C36 Fraction (Sum)	µg/L	50	<50	<50	<50	<50	<50	<50	-
Total Recoverable Hydrocarbons									
C6-C10 Fraction	µg/L	10	<10	<10	<10	<10	<10	<10	-
C6-C10 Fraction minus BTEX (F1)	µg/L	10	<10	<10	<10	<10	<10	<10	-
>C10-C16 Fraction	µg/L	50	<50	<50	<50	<50	<50	<50	-
>C10-C16 Fraction minus naphthalene (F2)	µg/L	50	<50	<50	<50	<50	<50	<50	-
>C16-C34 Fraction	µg/L	100	<100	<100	<100	<100	<100	<100	-
>C34-C40 Fraction	µg/L	100	<100	<100	<100	<100	<100	<100	-
>C10-C40 Fraction (Sum)	µg/L	50	<50	<50	<50	<50	<50	<50	-
PAHs									
Naphthalene (VOC)	µg/L	1	<1	<1	<1	<1	<1	<1	-
(n:2) Fluorotelomer Sulfonic Acids									
6:2 Fluorotelomer Sulfonate (6:2 FtS)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroalkane Carboxylic Acids									
Perfluorooctanoic acid (PFOA)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluoroalkane Sulfonic Acids									
Perfluorooctanesulfonic acid (PFOS)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sum of PFHxS and PFOS	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PFAS									
Sum of US EPA PFAS (PFOS + PFOA)	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Sum of PFAS	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

Table QAQC T6: Trip Spike Results
12 Mars road
Goodman Property Services (Aust) Pty Ltd
S22013

	Field ID	QC400	QC401	QC402	QC403	QC404	QC405
	Date	11/11/2024	12/11/2024	13/11/2024	14/11/2024	15/11/2024	21/11/2024
	Sample Type	Trip Spike	Trip Spike	Trip Spike	Trip Spike	Trip Spike	Trip Spike
	Lab Report No.	366091	366197	366346	366472	366546	367014
	Unit						
BTEX							
Benzene	% Recovery	102	90	100	97	99	100
Toluene	% Recovery	101	92	99	98	99	102
Ethylbenzene	% Recovery	102	93	94	98	99	102
Xylene (m & p)	% Recovery	102	92	95	98	98	100
Xylene (o)	% Recovery	102	92	94	97	99	103

Appendix H: Photo Log



Photo 1.



Photo 2.



Photo 3.

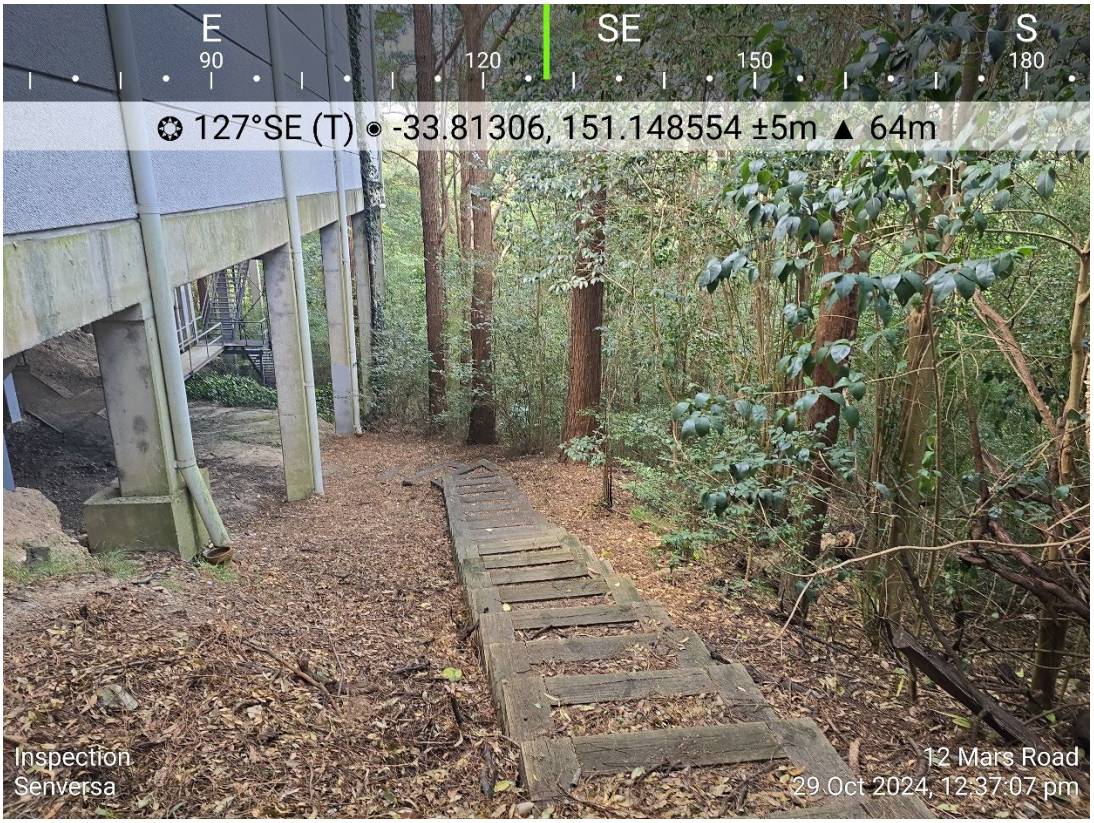


Photo 4.



Photo 5.



Photo 6.



Photo 7.



Photo 8.

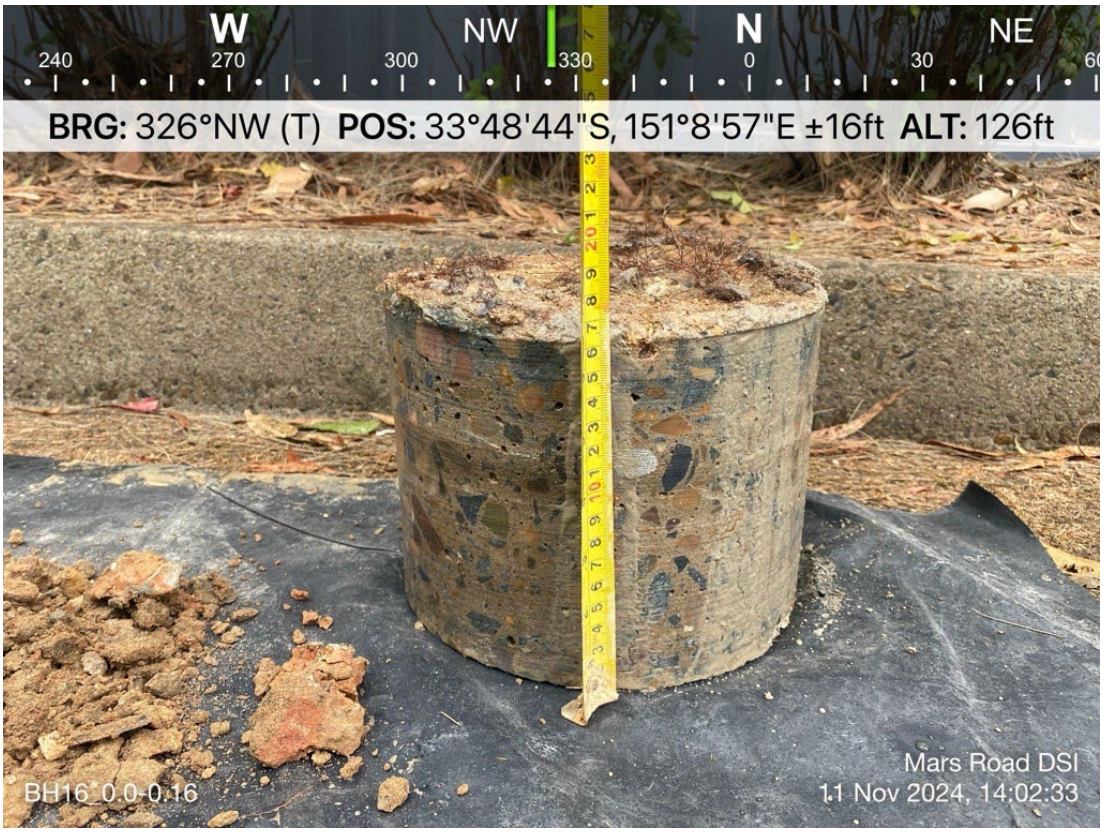


Photo 9.



Photo 10.



Photo 11.



Photo 12.



Photo 13.



Photo 14.

Appendix I: Waste Classification Letter

Senversa Pty Ltd
Level 24, 1 Market St, Sydney 2000
ABN 89 132 231 380 www.senversa.com.au

20 December 2024

Athena Vercoe
Project Administrator
Goodman Property Services (Aust) Pty Ltd
1-11 Hayes Road
ROSEBERY NSW 2018

Dear Athena,

Re: Drum Waste Classification – Soil and Groundwater
12 Mars Road, Lane Cove West, NSW

1.0 Introduction

Senversa Pty Ltd (Senversa) was engaged by Goodman Property Services (Aust) Pty Ltd (GPSA) to undertake a detailed site investigation (DSI[1]) to assess the contamination conditions at the property located at 12 Mars Road, Lane Cove West, NSW (the site).

The DSI involved drilling soil bores to collect environmental soil samples, as well as the installation, development and sampling of groundwater monitoring wells (locations presented on **Figure 1**). These activities generated surplus soil and groundwater which have been stored in 205 litre (L) drums at a secure location on the site. The materials in these drums require disposal to an appropriately licensed facility.

2.0 Objective

The objective of this letter is to classify the four waste soil drums and two wastewater drums generated as part of the DSI in accordance with the NSW EPA (2014) *Waste Classification Guidelines: Part 1 – Classifying Waste* to inform the off-site disposal to a licensed waste facility.

[1] Senversa (2025). *Detailed Site Investigation, 12 Mars Road, NSW 2066*. S22013_003_RPT_Rev0, dated January 2025.

3.0 Scope of Work

In order to achieve the objective, Senversa completed the following scope of works:

- Collection of the following samples from locations which resulted in surplus material:
  - 15 primary soil samples.
  - One intra-laboratory duplicate soil sample.
  - One inter-laboratory duplicate soil sample.
  - Five primary groundwater samples.
  - One inter-laboratory duplicate groundwater sample.
- Analysis of all samples by a National Association of Testing Authorities (NATA) accredited laboratory (Envirolab) using toxicity characteristic leaching procedure (TCLP) for per- and polyfluoroalkyl substances (PFAS) analysis.
- Completion of this waste classification report.

4.0 Waste Sampling

4.1 Waste Source

Surplus soil was generated during drilling of soil bores at five investigation locations on-site (BH02/MW01, BH14/MW02, BH16/MW03, BH18/MW04 and BH21/MW05). The soil comprises predominantly fill followed by natural clay and sandstone from between ground level and the maximum target depth of 9 metres below ground level (m bgl).

Surplus water was generated during groundwater well development and sampling of the newly installed wells on-site (MW01 to MW05).

The waste was stored in six labelled 205 L drums located in a secure area of the site. These were inclusive of four waste soil drums and two wastewater drums as listed in **Table 4.1** below.

Table 4.1: Waste Drum Details

Drum Number	Source	Material Type
1	BH02/MW01 and BH21/MW05	Soil
2	BH14/MW02	Soil
3	BH16/MW03	Soil
4	BH18/MW04	Soil
5	Monitoring well development and sampling at MW01 to MW05	Groundwater
6	Monitoring well development and sampling at MW01 to MW05	Groundwater

4.2 Approach and Methodology

The works were undertaken in general accordance with the following guideline documents:

- *Waste Classification Guidelines,* NSW EPA, November 2014.
- *National Environment Protection Council – National Environment Protection (Assessment of Site Contamination) Measure 1999* (Amendment No.1 in 2013).

Table 4.2 details the methodology for the field program.

Table 4.2: Waste Sampling Methodology

Item	Soil	Groundwater
Date	11, 12 and 13 November 2024	21 November 2024
Soil Inspection	The waste classification involved visual inspections by a suitably qualified Senversa environmental scientist to assess for the potential presence of contamination. No asbestos was observed within the soil placed in the drums. Additionally, asbestos was not detected in samples submitted for laboratory analysis.	-
Sampling	Soil data collected as part of the DSI were utilised for waste classification. This is considered appropriate as there was a high sampling density and all soil bores were sampled using consistent methods. The data were assessed as part of the DSI to be of suitable quality of use – i.e. use of these data is considered to provide a reasonable assessment of the quality of the soil at the time of sampling. The sampling was conducted by suitably qualified Senversa environmental scientists. Soil samples were collected from hand auger, solid flight auger, push tube or air hammer sampling at regular intervals, changes in lithology and where visual or olfactory indicators of contamination were observed during drilling. The samples were collected using disposable nitrile gloves. Samples were placed into laboratory supplied sample containers appropriate for the analytes. Samples were stored in a chilled cooler and transported to a NATA accredited laboratory under chain of custody (COC) protocols for analysis.	Groundwater data collected as part of the DSI were utilised for waste classification. This is considered appropriate as all wells were sampled using the same method, and these data were assessed as part of the DSI to be of suitable quality of use – i.e. use of these data is considered to provide a reasonable assessment of the quality of the water at the time of sampling. The sampling was conducted by a suitably qualified Senversa environmental scientist. Water samples were collected using a low-flow method and dedicated sampling equipment. Samples were placed into laboratory supplied sample containers appropriate for the analytes. Samples were stored in a chilled cooler and transported to a NATA accredited laboratory under COC protocols for analysis.
Analysis	Soil samples were analysed at a NATA accredited laboratory for heavy metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc), total recoverable hydrocarbons (TRH), benzene, toluene, ethylbenzene, xylenes, naphthalene (BTEXN), PAH, volatile organic compounds (VOCs), polychlorinated biphenyls (PCBs), PFAS and asbestos. The leachability of selected samples (based on their total concentrations) was analysed by TCLP for perfluorooctanoic acid (PFOA) and sum of Perfluorohexanesulfonic acid (PFHxS) and Perfluorooctanesulfonic acid (PFOS).	Water samples were analysed at a NATA accredited laboratory for heavy metals, TRH, BTEXN, VOCs and PFAS.

4.3 Sampling Results

4.3.1 Field Observations

A summary description of field observations made during sampling at the site is provided in **Table 4.3**.

Table 4.3: Site Lithology

Lithology*	Approximate Depths (m bgl)	Description
Concrete	0-0.2	FILL: CONCRETE, good condition.
Fill	0.2-0.5	FILL: Clayey Gravelly SAND: poorly graded, fine to coarse, sub-rounded to sub-angular sand, low plasticity clay, fine to coarse, sub-rounded to sub-angular gravel, grey to brown or pale orange, dry, anthropogenic material including concrete fragments, glass (<5% each), no odour, no staining.
Clay	0.5-2.0	Sandy CLAY: low to high plasticity clay, poorly graded, medium to coarse, sub-rounded to sub-angular sand, pale grey mottled red to orange, firm to stiff, moist, near plastic limit, no odour, no staining.
Sandstone	>2.0	SANDSTONE: inferred low to medium strength, inferred moderately to highly weathered, pale orange to pale grey, dry to wet.

Notes * - lithology varied across the site. Depths provided represent the approximate depth range of each lithology. Borehole logs associated with the waste classification assessment are provided in **Attachment A**.

4.3.2 Soil Analytical Results

The soil sampling analytical results are presented in laboratory analytical certificates provided in **Attachment B**, with a summary of key relevant results compared to the waste classification criteria in **Table 1**. The laboratory reports in **Attachment B** include analytical results from sampling conducted at other locations in the investigation area – these data are not relevant to this waste classification. Only data relevant to the waste within the drums from locations identified in **Section 4.1** have been discussed within this letter.

All analytes were reported at concentrations below contaminant threshold (CT) 1 criteria.

4.3.3 Water Analytical Results

The groundwater sampling results are summarised in **Table 2**.

Laboratory analytical certificates are provided in **Attachment B**.

4.4 Data Quality Assurance

The results of the data validation undertaken have been detailed within the DSI report. While some QC results were outside specified acceptance criteria, these were not considered to significantly impact on the quality or representativeness of the overall dataset, and the majority of results indicated that the precision and accuracy of the data was within acceptable limits for the purposes of the investigation. The soil and groundwater sample results are considered representative of chemical concentrations in the environmental media at the time of sampling, and suitable for the purpose of waste classification.

5.0 Soil Waste Classification

The material has been assessed according to the six steps for classifying waste as per NSW EPA (2014). This waste classification relates to soil within the four designated drums currently stored within a secure area of the site.

Table 5.1: Six-Step Waste Classification

Step	Comments	Rationale
Step 1 – Is the waste special waste?	No	No asbestos was observed within soil sourced from the monitoring well installation locations or detected in samples by the laboratory.
Step 2 – Is the waste liquid waste?	No	Material within four drums comprises surplus drilling cuttings consisting of sand, clay and sandstone material which is considered solid waste.
Step 3 – Is the waste "pre-classified"?	No	The material is not pre-classified with reference to NSW EPA (2014).
Step 4 – Does the waste possess hazardous waste characteristics?	No	The waste was not observed to contain or considered at risk to contain explosives, gases, flammable solids, oxidising agents, organic peroxides, toxic substances, corrosive substances, coal tar, batteries, lead paint or dangerous goods containers.
Step 5 – Determining a wastes classification using chemical assessment.	Conducted	Refer to summary analytical data for the waste in **Section 4.3.2, Table 1** and laboratory reports in **Attachment B**.
Step 6 – Is the waste putrescible?	No	No putrescible waste was observed during drilling works.

On the basis of the six-step classification process, the waste soil within the four designated drums is considered to be classified as **General Solid Waste (non-putrescible)**. The waste should be disposed of at a suitably licenced facility able to receive the waste.

6.0 Groundwater Waste Classification

The material has been assessed according to the six steps for classifying waste per NSW EPA (2014). This waste classification relates to water within the two designated drums currently stored within a secure area of the site.

Table 6.1: Six-Step Waste Classification

Step	Comments	Rationale
Step 1 – Is the waste special waste?	No	-
Step 2 – Is the waste liquid waste?	Yes	The waste comprises surplus water generated from well development and groundwater sampling.
Step 3 – Is the waste "pre-classified"?	Not relevant	-
Step 4 – Does the waste possess hazardous waste characteristics?	Not relevant	-

Step	Comments	Rationale
Step 5 – Determining a wastes classification using chemical assessment.	Not relevant	Refer to summary analytical data for the wastewater in **Table 2** and laboratory reports in **Attachment B**.
Step 6 – Is the waste putrescible?	Not relevant	-

On the basis of the six-step classification process, the wastewater within the two designated drums is considered to be classified as **Liquid Waste**.

The waste should be disposed of at a suitably licenced facility able to receive the waste.

7.0 Closure

If you have any comments or questions, please do not hesitate to contact Zoe Smith at zoe.smith@senversa.com.au or on 0488 211 265.

Yours sincerely,
On behalf of **Senversa Pty Ltd**

Megan Ferguson
Project Environmental Scientist

Jason Clay
Senior Principal

Enclosures Figure 1: Sample Locations
Table 1: Soil Analytical Results
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Figure 1: Sample Locations



Legend

- Groundwater Monitoring Well
- Soil Bore
- PACM Fragment
- Existing Groundwater Monitoring Well
- Lot Boundary
- Site Boundary

Notes:
Aerial Imagery (14/07/2024) © Metromap

Created:	E. Marha	Date:	29/11/2024
Reviewed:	L. Dzalakowski	Revision:	0
Approved:	Z. Smith	Scale:	1:1,000 (A3)
File:	S22013_003_F002 Sample Locations		

0 4.5 9 18 27 36 45 Metres

Coordinate System: GDA2020 MGA Zone 56

Figure No: 2

Title: Sample Locations

Project: Detailed Site Investigation

Location: 12 Mars Rd, Lane Cove, NSW 2066

Client: Goodman Property Services (Aust) Pty Ltd

Path: S:\01_Jobs\1.NSW_Jobs\S22013_GPSA_MARS RD_DSI\APRX\S22013_003.aprx

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Table 1: Soil Analytical Results

Table 1: Soil Analytical Results
Drum Waste Classification
12 Mars Road, Lane Cove West, NSW
Goodman Property Services (Aust) Pty Ltd
S22013

						Metals								BTEX							Total Petroleum Hydrocarbons					PAH	
						Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Total Xylene	Total BTEX	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Sum)	Benzo(a)pyrene	Sum of Polycyclic aromatic hydrocarbons (PAH)
					Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
					LOR	4	0.4	1	1	1	0.1	1	1	0.2	0.5	0.5	0.5	0.5	0.5	0.2	10	50	100	100	50	0.05	0.5
					NSW EPA 2014 - General Solid Waste CT1 (No Leaching)	100	20	100[#1]		100	4	40		10	288	600			1,000		650				10,000	0.8	200
					NSW EPA 2014 - General Solid Waste SCC1 (with leached)	**500**	**100**	**1,900[#1]**		**1,500**	**50**	**1,050**		**18**	**518**	**1,080**			**1,800**		**650**				**10,000**	**10**	**200**
					NSW EPA 2014 - General Solid Waste TCLP1 (leached)																						
					NSW EPA 2014 - Restricted Solid Waste CT2 (No Leaching)	400	80	400[#1]		400	16	160		40	1,152	2,400			4,000		2,600				40,000	3.2	800
					NSW EPA 2014 - Restricted Solid Waste SCC2 (with leached)	*2,000*	*400*	*7,600[#1]*		*6,000*	*200*	*4,200*		*72*	*2,073*	*4,320*			*7,200*		*2,600*				*40,000*	*23*	*800*
					NSW EPA 2014 - Restricted Solid Waste TCLP2 (leached)																						
Location	**Field ID**	**Date**	**Depth**	**Sample Type**	**Lab Report**																						
BH02	BH02_0.2-0.3	13/11/2024	0.2 - 0.3	Normal	366346	<4	<0.4	16	10	14	<0.1	9	31	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50	<0.05	<0.05
BH02	BH02_7.9-8.0	13/11/2024	7.9 - 8	Normal	366346	<4	<0.4	7	2	12	<0.1	4	16	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50	<0.05	<0.05
BH02	QC201	13/11/2024	0.2 - 0.3	Interlab_D	ES2437730	<5	<1	15	9	20	<0.1	10	28	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<10	<50	<100	<100	<50	<0.5	<0.5
BH14	BH14_0.16-0.2	11/11/2024	0.16 - 0.2	Normal	366091	<4	<0.4	9	12	12	<0.1	14	20	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50	<0.05	<0.05
BH14	BH14_4.0-4.2	11/11/2024	4 - 4.2	Normal	366091	<4	<0.4	4	<1	5	<0.1	2	9	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50	<0.05	<0.05
BH14	BH14_7.8-8.0	11/11/2024	7.8 - 8	Normal	366091	<4	<0.4	10	5	11	<0.1	2	17	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50	<0.05	<0.05
BH16	BH16_1.0-2.1	11/11/2024	1 - 1.1	Normal	366091	<4	<0.4	15	4	11	<0.1	3	14	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50	<0.05	<0.05
BH16	BH16_4.0-4.1	11/11/2024	4 - 4.1	Normal	366091	<4	<0.4	7	2	3	<0.1	2	8	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50	<0.05	<0.05
BH16	BH16_7.9-8.0	12/11/2024	7.9 - 8	Normal	366197	<4	<0.4	4	4	2	<0.1	<1	4	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50	<0.05	<0.05
BH18	BH18_0.25-0.3	12/11/2024	0.25 - 0.3	Normal	366197	<4	<0.4	18	3	8	<0.1	6	8	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50	<0.05	<0.05
BH18	BH18_1.0-1.1	12/11/2024	1 - 1.1	Normal	366197	<4	<0.4	2	<1	6	<0.1	<1	<1	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50	<0.05	<0.05
BH18	BH18_5.9-6.0	13/11/2024	5.9 - 6	Normal	366346	<4	<0.4	7	4	7	<0.1	4	17	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50	<0.05	<0.05
BH18	QC100	12/11/2024	0.25 - 0.3	Field_D	366197	<4	<0.4	31	22	29	0.1	3	39	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	110	130	240	<0.05	<0.05
BH21	BH21_0.2-0.5	12/11/2024	0.2 - 0.5	Normal	366197	5	<0.4	14	7	12	<0.1	3	10	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50	<0.05	<0.05
BH21	BH21_0.7-0.8	12/11/2024	0.7 - 0.8	Normal	366197	18	<0.4	14	15	40	<0.1	3	78	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50	0.53	6.2
BH21	BH21_1.1-1.2	12/11/2024	1.1 - 1.2	Normal	366197	<4	<0.4	18	4	6	<0.1	2	8	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50	<0.05	<0.05
BH21	BH21_7.9-8.0	12/11/2024	7.9 - 8	Normal	366197	<4	<0.4	11	12	6	<0.1	1	10	<0.2	<0.5	<1	<2	<1	<1	-	<25	<50	<100	<100	<50	<0.05	<0.05

Comments
#1 As chromium (VI)

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Drum Waste Classification
12 Mars Road, Lane Cove West, NSW
Goodman Property Services (Aust) Pty Ltd
S22013

		MAH	Halogenated Benzenes			Chlorinated Hydrocarbons											Polychlorinated Biphenyls	Asbestos	PFAS			
		Styrene	1,2-Dichlorobenzene	1,4-Dichlorobenzene	Chlorobenzene	1,1-Dichloroethene	1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1,2,2-Tetrachloroethane	1,2-Dichloroethane	Carbon Tetrachloride	Chloroform	Tetrachloroethene	Trichloroethene	Vinyl Chloride	PCBs (Sum of total)	Asbestos (Absent/Present)	Perfluorooctanoic acid (PFOA)	Perfluorooctanoic acid (PFOA)	Sum of PFHxS and PFOS	Sum of PFHxS and PFOS
Unit		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	-	mg/kg	µg/L	mg/kg	µg/L
LOR		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.1		0.0001	0.01	0.0001	0.01
NSW EPA 2014 - General Solid Waste CT1 (No Leaching)		60	86	150	2,000	14	200	600	24	26	10	10	120	14	10	4	50					
NSW EPA 2014 - General Solid Waste SCC1 (with leached)		**108**	**155**	**270**	**3,600**	**25**	**360**	**1,080**	**43.2**	**46.8**	**18**	**18**	**216**	**25.2**	**18**	**7.2**	**50**		**18**		**1.8**	
NSW EPA 2014 - General Solid Waste TCLP1 (leached)																				500		50
NSW EPA 2014 - Restricted Solid Waste CT2 (No Leaching)		240	344	600	8,000	56	800	2,400	96	104	40	40	480	56	40	16	50					
NSW EPA 2014 - Restricted Solid Waste SCC2 (with leached)		*432*	*620*	*1,080*	*14,400*	*100*	*1,440*	*4,320*	*172.8*	*187.2*	*72*	*72*	*864*	*100.8*	*72*	*28.8*	*50*		*72*		*7.2*	
NSW EPA 2014 - Restricted Solid Waste TCLP2 (leached)																				2,000		200
Location	**Field ID**	**Date**	**Depth**	**Sample Type**	**Lab Report**																	
BH02	BH02_0.2-0.3	13/11/2024	0.2 - 0.3	Normal	366346	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1	Absent	0.0002	<0.01	0.0019	0.03
BH02	BH02_7.9-8.0	13/11/2024	7.9 - 8	Normal	366346	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH02	QC201	13/11/2024	0.2 - 0.3	Interlab_D	ES2437730	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0002	-	0.0021	-
BH14	BH14_0.16-0.2	11/11/2024	0.16 - 0.2	Normal	366091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	Absent	0.0001	<0.01	0.0002	<0.01
BH14	BH14_4.0-4.2	11/11/2024	4 - 4.2	Normal	366091	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-
BH14	BH14_7.8-8.0	11/11/2024	7.8 - 8	Normal	366091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH16	BH16_1.0-2.1	11/11/2024	1 - 1.1	Normal	366091	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1	Absent	<0.0001	<0.01	<0.0001	<0.01
BH16	BH16_4.0-4.1	11/11/2024	4 - 4.1	Normal	366091	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH16	BH16_7.9-8.0	12/11/2024	7.9 - 8	Normal	366197	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-
BH18	BH18_0.25-0.3	12/11/2024	0.25 - 0.3	Normal	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	Absent	<0.0001	<0.01	<0.0001	<0.01
BH18	BH18_1.0-1.1	12/11/2024	1 - 1.1	Normal	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH18	BH18_5.9-6.0	13/11/2024	5.9 - 6	Normal	366346	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH18	QC100	12/11/2024	0.25 - 0.3	Field_D	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0001	-	<0.0001	-
BH21	BH21_0.2-0.5	12/11/2024	0.2 - 0.5	Normal	366197	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.1	Absent	<0.0001	<0.01	0.0001	<0.01
BH21	BH21_0.7-0.8	12/11/2024	0.7 - 0.8	Normal	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	Absent	-	-	-	-
BH21	BH21_1.1-1.2	12/11/2024	1.1 - 1.2	Normal	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH21	BH21_7.9-8.0	12/11/2024	7.9 - 8	Normal	366197	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Comments
#1 As chromium (VI)

Table 2: Groundwater Analytical Results

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Drum Waste Classification
12 Mars Road, Lane Cove West, NSW
Goodman Property Services (Aust) Pty Ltd
S22013

					Metals								BTEX							Total Petroleum Hydrocarbons					Total Recoverable Hydrocarbons							PAHs	MAH				
					Arsenic (filtered)	Cadmium (filtered)	Chromium (filtered)	Copper (filtered)	Lead (filtered)	Mercury (filtered)	Nickel (filtered)	Zinc (filtered)	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Total Xylene	Total BTEX	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Sum)	C6-C10 Fraction	C6-C10 Fraction minus BTEX (F1)	>C10-C16 Fraction	>C10-C16 Fraction minus naphthalene (F2)	>C16-C34 Fraction	>C34-C40 Fraction	>C10-C40 Fraction (Sum)	Naphthalene (VOC)	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Isopropylbenzene	n-Butylbenzene	n-Propylbenzene
				Unit	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
				LOR	0.001	0.0001	0.001	0.001	0.001	0.00005	0.001	0.001	1	1	1	2	1	2	1	10	50	100	50	50	10	10	50	50	100	100	50	1	1	1	1	1	1
Location	**Field ID**	**Date**	**Sample Type**	**Lab Report**																																
MW01	MW01	21/11/2024	Normal	367014	0.004	0.0002	<0.001	0.001	<0.001	<0.00005	0.041	0.34	<1	<1	<1	<2	<1	-	-	<10	100	100	<100	200	<10	<10	120	120	<100	<100	120	<1	<1	<1	<1	<1	<1
MW02	MW02	21/11/2024	Normal	367014	<0.001	<0.0001	0.001	0.006	0.003	<0.00005	0.019	0.062	<1	<1	<1	<2	<1	-	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<1	<1	<1	<1	<1	<1
MW02	QC206	21/11/2024	Interlab_D	ES2438247	<0.001	<0.0001	0.001	0.006	0.002	<0.0001	0.021	0.064	<1	<2	<2	<2	<2	<2	<1	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100	<5	<5	<5	<5	<5	<5
MW03	MW03	21/11/2024	Normal	367014	<0.001	<0.0001	<0.001	0.004	0.004	<0.00005	0.005	0.024	<1	<1	<1	<2	<1	-	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<1	<1	<1	<1	<1	<1
MW04	MW04	21/11/2024	Normal	367014	<0.001	<0.0001	<0.001	0.003	<0.001	<0.00005	0.01	0.036	<1	6	<1	<2	<1	-	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<1	<1	<1	<1	<1	<1
MW05	MW05	21/11/2024	Normal	367014	<0.001	<0.0001	<0.001	0.002	<0.001	<0.00005	0.01	0.039	<1	1	<1	<2	<1	-	-	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<1	<1	<1	<1	<1	<1

Table 2: Groundwater Analytical Results
Drum Waste Classification
12 Mars Road, Lane Cove West, NSW
Goodman Property Services (Aust) Pty Ltd
S22013

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Drum Waste Classification
12 Mars Road, Lane Cove West, NSW
Goodman Property Services (Aust) Pty Ltd
S22013

					Chlorinated Hydrocarbons																						Solvents						(n:2) Fluorotelomer Sulfonic Acids							
					Arsenic (filtered)	Bromodichloromethane	Bromoform	Carbon Tetrachloride	Chlorodibromomethane	Chloroethane	Chloroform	Chloromethane	cis-1,4-Dichloro-2-butene	cis-1,2-Dichloroethene	Dibromomethane	cis-1,3-Dichloropropene	Hexachlorobutadiene	Pentachloroethane	Tetrachloroethene	trans-1,4-Dichloro-2-butene	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Trichloroethene	Vinyl Chloride	Methyl Ethyl Ketone (MEK)	2-Hexanone (MBK)	4-Methyl-2-pentanone	Carbon disulfide	Cyclohexane	Vinyl acetate	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer Sulfonate (6:2 FtS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	Perfluorohexanoic acid (PFHxA)	Perfluorodecanoic acid (PFDoDA)	Perfluorononanoic acid (PFNA)
	Unit		mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR		0.001	1	1	1	1	10	1	10	5	1	1	1	5	1	5	1	1	1	10	50	50	50	5	1	50	0.05	0.01	0.02	0.05	0.02	0.02	0.02
Location	**Field ID**	**Date**	**Sample Type**	**Lab Report**																																	
MW01	MW01	21/11/2024	Normal	367014	0.004	<1	<1	<1	<1	<10	<1	<10	-	<1	<1	<1	<1	-	<1	-	<1	<1	<1	<10	-	-	-	-	<1	-	-	<0.01	<0.02	-	-	-	-
MW02	MW02	21/11/2024	Normal	367014	<0.001	<1	<1	<1	<1	<10	<1	<10	-	<1	<1	<1	<1	-	<1	-	<1	<1	<1	<10	-	-	-	-	<1	-	-	<0.01	<0.02	-	-	-	-
MW02	QC206	21/11/2024	Interlab_D	ES2438247	<0.001	<5	<5	<5	<5	<50	<5	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<50	<50	<50	<5	-	<50	<0.05	<0.05	<0.05	<0.05	<0.02	<0.02	<0.02
MW03	MW03	21/11/2024	Normal	367014	<0.001	<1	<1	<1	<1	<10	<1	<10	-	<1	<1	<1	<1	-	<1	-	<1	<1	<1	<10	-	-	-	-	<1	-	-	<0.01	<0.02	-	-	-	-
MW04	MW04	21/11/2024	Normal	367014	<0.001	<1	<1	<1	<1	<10	<1	<10	-	<1	<1	<1	<1	-	<1	-	<1	<1	<1	<10	-	-	-	-	<1	-	-	<0.01	<0.02	-	-	-	-
MW05	MW05	21/11/2024	Normal	367014	<0.001	<1	<1	<1	<1	<10	<1	<10	-	<1	<1	<1	<1	-	<1	-	<1	<1	<1	<10	-	-	-	-	<1	-	-	<0.01	<0.02	-	-	-	-

Table 2: Groundwater Analytical Results
Drum Waste Classification
12 Mars Road, Lane Cove West, NSW
Goodman Property Services (Aust) Pty Ltd
S22013

					Perfluoroalkane Carboxylic Acids									Perfluoroalkane Sulfonic Acids							Perfluoroalkyl Sulfonamides							PFAS	
					Arsenic (filtered)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluoroheptancic acid (PFHpA)	Perfluorobutanoic acid (PFBA)	Perfluorodecanoic acid (PFDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Perfluorooctanoic acid (PFOA)	Perfluorooctanesulfonic acid (PFOS)	Perfluoropentane sulfonic acid (PFPeS)	Perfluorohexane sulfonic acid (PFHxS)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluorodecanesulfonic acid (PFDS)	Perfluorobutane sulfonic acid (PFBS)	Sum of PFHxS and PFOS	N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	N-methylperfluorooctane sulfonamidoacetic acid (NMeFOSAA)	N-ethyl-perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	N-Ethyl perfluorooctane sulfonamide (EtFOSA)	N-Methyl perfluorooctane sulfonamide (MeFOSA)	N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	Perfluorooctane sulfonamide (FOSA)	Sum of US EPA PFAS (PFOS + PFOA)	Sum of PFAS
	Unit				mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	LOR				0.001	0.02	0.05	0.02	0.1	0.02	0.02	0.02	0.01	0.01	0.02	0.01	0.02	0.02	0.01	0.01	0.05	0.02	0.02	0.05	0.05	0.05	0.02	0.01	0.01
Location	**Field ID**	**Date**	**Sample Type**	**Lab Report**																									
MW01	MW01	21/11/2024	Normal	367014	0.004	-	-	-	-	-	-	-	<0.01	<0.01	-	<0.01	-	-	<0.01	<0.01	-	-	-	-	-	-	-	<0.01	<0.01
MW02	MW02	21/11/2024	Normal	367014	<0.001	-	-	-	-	-	-	-	<0.01	<0.01	-	0.01	-	-	<0.01	0.01	-	-	-	-	-	-	-	<0.01	0.01
MW02	QC206	21/11/2024	Interlab_D	ES2438247	<0.001	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.01	<0.01	<0.02	<0.01	<0.02	<0.02	<0.02	<0.01	<0.05	<0.02	<0.02	<0.05	<0.05	<0.05	<0.02	-	<0.01
MW03	MW03	21/11/2024	Normal	367014	<0.001	-	-	-	-	-	-	-	<0.01	<0.01	-	0.04	-	-	<0.01	0.04	-	-	-	-	-	-	-	<0.01	0.04
MW04	MW04	21/11/2024	Normal	367014	<0.001	-	-	-	-	-	-	-	0.01	<0.01	-	0.02	-	-	<0.01	0.02	-	-	-	-	-	-	-	0.01	0.03
MW05	MW05	21/11/2024	Normal	367014	<0.001	-	-	-	-	-	-	-	<0.01	<0.01	-	0.01	-	-	<0.01	0.01	-	-	-	-	-	-	-	<0.01	0.01

Attachment A: Borehole Logs

BOREHOLE LOG
BH02/MW01

PROJECT: S22013: Detailed Site Investigation
FINAL DEPTH: 9.00 m
LOCATION: 12 Mars Road, Lane Cove West, NSW 2066
CLIENT: Goodman Property Services (Aust) Pty Ltd
INCLINATION: Vertical
POSITION: E328657.943 N6257257.110 (GDA2020 / MGA zone 56)
SURFACE ELEVATION: Not measured
ORIENTATION: N/A
RIG TYPE: Geoprobe 7822DT
CONTRACTOR: Epoca Environmental
CASING: Not cased
DATE: 13 Nov 2024
DIAMETER: 150 mm
DIMENSIONS: N/A
GENERAL NOTES: N/A
LOGGED BY: LD
WATER NOTE: Water observed at 3.50 m
CHECKED BY: VR

METHOD	DEPTH (m)	MODIFIED GROUP SYMBOL	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE ID	FIELD TESTS
HA	0.0	FILL	FILL Clayey Gravelly SAND: poorly graded, medium to coarse, sub-rounded to sub-angular, SAND, low plasticity Clay, sub-angular, medium to coarse Gravel, brown mottled grey, dry, no odour, no staining.	ED	BH02_0.2-0.3	PID(0.3m)=25.9 PPM
SFA	0.5	MW	SANDSTONE: inferred low strength, inferred highly weathered, pale red mottled grey, dry (Hawkesbury Sandstone)	ED	BH02_0.4-0.5	PID(0.5m)=24.7 PPM
	1.0			ED	BH02_0.9-1.0	PID(1.0m)=8.2 PPM
AH	1.5	HW	inferred medium to high strength, inferred slightly weathered, pale yellow			
	2.0			ED	BH02_1.9-2.0	PID(2.0m)=12.1 PPM
	2.5					
	3.0					
	3.5		pale grey, wet			
	4.0			ED	BH02_3.9-4.0	PID(4.0m)=0.3 PPM
	4.5					
	5.0		pale grey, moist			
	5.5					
	6.0			ED	BH02_5.9-6.0	PID(6.0m)=1 PPM
	6.5					
	7.0					
	7.5					
	8.0			ED	BH02_7.9-8.0	PID(8.0m)= PPM
	8.5					
	9.0		Terminated at 9.00 m. Target Depth Achieved.			
	9.5					
	10.0					

These logs have been prepared for environmental purposes and should not be used for geotechnical design and interpretive purposes

For explanation and abbreviations and symbols, refer to Soil Description Notes & Abbreviations (SEN-TECH-051).

BOREHOLE LOG
BH14/MW02

PROJECT: S22013: Detailed Site Investigation
LOCATION: 12 Mars Road, Lane Cove West, NSW 2066
POSITION: E328635.286 N6257098.845 (GDA2020 / MGA zone 56)
RIG TYPE: Geoprobe 7822DT
DATE: 11 Nov 2024
GENERAL NOTES: N/A
WATER NOTE: Water observed at 5.20 m

CLIENT: Goodman Property Services (Aust) Pty Ltd
SURFACE ELEVATION: Not measured
CONTRACTOR: Epoca Environmental
DIAMETER: 200 mm

FINAL DEPTH: 8.00 m
INCLINATION: Vertical
ORIENTATION: N/A
CASING: Not cased
DIMENSIONS: N/A
LOGGED BY: LD
CHECKED BY: VR

METHOD	DEPTH (m)	MODIFIED GROUP SYMBOL	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE ID	FIELD TESTS
HCCA	0.0	FILL	FILL: CONCRETE, good condition.			
SFA		FILL	FILL Gravelly SAND: poorly graded, fine, sub-rounded, SAND, fine to coarse, sub-rounded to sub-angular Gravel, pale brown, moist, no odour, no staining.	ED	BH14_0.16-0.2	PID(0.2m)=0.6 PPM
AH	0.5		SANDSTONE: inferred low to medium strength, inferred moderately weathered, pale orange, dry (Hawkesbury Sandstone)	ED	BH14_0.5-0.6	PID(0.6m)=9.6 PPM
	1.0					
	1.5					
	2.0	MW		ED	BH14_2.0-2.2	PID(2.2m)=11.6 PPM
	2.5					
	3.0			ED	BH14_3.0-3.2	PID(3.2m)=11.4 PPM
	3.5					
	4.0		inferred medium strength, inferred moderately weathered, pale grey to white, moist	ED	BH14_4.0-4.2	PID(4.2m)=12.3 PPM
	4.5	MW				
	5.0		pale orange to grey, wet	ED	BH14_5.0-5.2	PID(5.2m)=12.9 PPM
	5.5					
	6.0			ED	BH14_6.0-6.2	PID(6.2m)=9.0 PPM
	6.5	MW				
	7.0			ED	BH14_7.0-7.2	PID(7.2m)=5.2 PPM
	7.5					
	8.0		Terminated at 8.00 m. Target Depth Achieved.	ED	BH14_7.8-8.0	PID(8.0m)=10.1 PPM
	8.5					
	9.0					
	9.5					
	10.0					

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BOREHOLE LOG
BH16/MW03

PROJECT: S22013: Detailed Site Investigation
LOCATION: 12 Mars Road, Lane Cove West, NSW 2066
POSITION: E328697.695 N6257104.719 (GDA2020 / MGA zone 56)
RIG TYPE: Geoprobe 7822DT
DATE: 11 Nov 2024
GENERAL NOTES: N/A

CLIENT: Goodman Property Services (Aust) Pty Ltd
SURFACE ELEVATION: Not measured
CONTRACTOR: Epoca Environmental
DIAMETER: 200 mm

FINAL DEPTH: 8.00 m
INCLINATION: Vertical
ORIENTATION: N/A
CASING: Not cased
DIMENSIONS: N/A
LOGGED BY: LD
CHECKED BY: VR

METHOD	GROUND WATER LEVELS	WELL INSTALLATION	DEPTH (m)	GRAPHIC LOG	MODIFIED GROUP SYMBOL	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE ID	FIELD TESTS
CC			0.0		FILL	FILL: CONCRETE, good condition.			
HA			0.5		FILL	FILL Gravelly SAND: poorly graded, fine, sub-rounded to sub-angular, SAND, sub-angular, medium to coarse Gravel, pale brown, moist, anthropogenic material including concrete fragments (<5%), glass (<5%), no odour, no staining.	ED	BH16_0.16-0.2	PID(0.2m)=8.9 PPM
							ED	BH16_0.5-0.6	PID(0.6m)=6.4 PPM
SFA			1.0				ED	BH16_1.0-1.2	PID(1.2m)=11.8 PPM
PT			1.5			SANDSTONE: inferred low to medium strength, inferred moderately weathered, pale orange, dry (Hawkesbury Sandstone)			
AH			2.0				ED	BH16_2.0-2.1	PID(2.1m)=13.4 PPM
			4.0		MW		ED	BH16_4.0-4.1	PID(4.1m)=13.4 PPM
			6.0				ED	BH16_6.0-6.1	PID(6.1m)=10.1 PPM
			8.0			Terminated at 8.00 m. Target Depth Achieved.	ED	BH16_7.9-8.0	PID(8.0m)=42.9 PPM
			10.0						

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For explanation and abbreviations and symbols, refer to Soil Description Notes & Abbreviations (SEN-TECH-051).

BOREHOLE LOG
BH18/MW04

PROJECT: S22013: Detailed Site Investigation
LOCATION: 12 Mars Road, Lane Cove West, NSW 2066
POSITION: E328737.109 N6257161.521 (GDA2020 / MGA zone 56)
RIG TYPE: Geoprobe 7822DT
DATE: 12 Nov 2024
GENERAL NOTES: N/A

CLIENT: Goodman Property Services (Aust) Pty Ltd
SURFACE ELEVATION: Not measured
CONTRACTOR: Epoca Environmental
DIAMETER: 200 mm

FINAL DEPTH: 8.00 m
INCLINATION: Vertical
ORIENTATION: N/A
CASING: Not cased
DIMENSIONS: N/A
LOGGED BY: LD
CHECKED BY: VR

METHOD	DEPTH (m)	MODIFIED GROUP SYMBOL	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE ID	FIELD TESTS
CC	0.0	FILL	FILL: CONCRETE, good condition.			
		FILL	FILL GRAVEL: poorly graded, medium to coarse, sub-angular, GRAVEL, grey , dry, no odour, no staining.	ED	BH18_0.2-0.25	PID(0.2m)=0 PPM
				ED	BH18_0.25-0.3	PID(0.3m)=0 PPM
HA	0.5	CH	FILL Sandy Gravelly CLAY: low plasticity, CLAY, poorly graded, medium to coarse, rounded to sub-rounded Sand, sub-angular, medium to coarse Gravel, grey mottled brown, firm, moist, near plastic limit, no odour, no staining.	ED	BH18_0.5-0.6	PID(0.6m)=0 PPM
			CH CLAY: medium to high plasticity, CLAY, pale grey mottled red, firm to stiff, moist, near plastic limit, no odour, no staining, (Hawkesbury Sandstone).			
SFA	1.0	CL	CL Sandy CLAY: low plasticity, CLAY, poorly graded, sub-rounded to sub-angular, medium to coarse Sand, pale grey, moist, near plastic limit, no odour, no staining, (Hawkesbury Sandstone).	ED	BH18_1.0-1.1	PID(1.1m)=0 PPM
	1.5	CL	CL: pale red.			
AH	2.0		SANDSTONE: inferred low to medium strength, inferred moderately weathered, pale yellow, moist (Hawkesbury Sandstone)	ED	BH18_1.9-2.0	PID(2.0m)=0 PPM
	3.0	MW				
	4.0		MW: pale orange.	ED	BH18_3.9-4.0	PID(4.0m)=3.6 PPM
	6.0	MW		ED	BH18_5.9-6.0	PID(6.0m)=21.5 PPM
	8.0		Terminated at 8.00 m. Target Depth Achieved .	ED	BH18_7.9-8.0	

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For explanation and abbreviations and symbols, refer to Soil Description Notes & Abbreviations (SEN-TECH-051).

BOREHOLE LOG
BH21/MW05

PROJECT: S22013: Detailed Site Investigation
FINAL DEPTH: 8.00 m
LOCATION: 12 Mars Road, Lane Cove West, NSW 2066
CLIENT: Goodman Property Services (Aust) Pty Ltd
INCLINATION: Vertical
POSITION: E328756.358 N6257241.788 (GDA2020 / MGA zone 56)
SURFACE ELEVATION: Not measured
ORIENTATION: N/A
RIG TYPE: Geoprobe 7822DT
CONTRACTOR: Epoca Environmental
CASING: Not cased
DATE: 12 Nov 2024
DIAMETER: 200 mm
DIMENSIONS: N/A
GENERAL NOTES: N/A
LOGGED BY: LD
WATER NOTE: Water observed at 5.20 m
CHECKED BY: VR

METHOD	DEPTH (m)	MODIFIED GROUP SYMBOL	MATERIAL DESCRIPTION	SAMPLE TYPE	SAMPLE ID	FIELD TESTS
CC	0.0	FILL	FILL: CONCRETE, good condition.			
HA	0.5	FILL	FILL Clayey Gravelly SAND: poorly graded, medium to coarse, sub-rounded to sub-angular, SAND, low plasticity Clay, sub-angular, medium to coarse Gravel, pale orange to brown, dry, no odour, no staining.	ED	BH21_0.2-0.3	PID(0.3m)=34.1 PPM
		FILL	FILL: brown, anthropogenic material including glass (<5%), no odour, no staining.	ED	BH21_0.7-0.8	PID(0.8m)=21.6 PPM
	1.0	SC	SC Clayey SAND: poorly graded, fine, sub-rounded to sub-angular, SAND, low plasticity Clay, orange, dry, no odour, no staining, (Hawkesbury Sandstone).	ED	BH21_1.1-1.2	PID(1.2m)=13.8 PPM
SFA	2.0	HW	SANDSTONE: inferred low strength, inferred highly weathered, pale red, dry (Hawkesbury Sandstone)	ED	BH21_1.9-2.0	PID(2.0m)=20 PPM
	3.0			ED	BH21_2.9-3.0	PID(3.0m)=20.4 PPM
	4.0			ED	BH21_3.9-4.0	PID(4.0m)=19.7 PPM
AH	4.0	MW	inferred medium to high strength, inferred moderately weathered, pale yellow			
	6.0			ED	BH21_5.9-6.0	PID(6.0m)=10.2 PPM
	7.0	HW	inferred very low to low strength, wet			
	7.5	MW	inferred medium to high strength			
	8.0			ED	BH21_7.9-8.0	PID(8.0m)=18.7 PPM
	8.0		Terminated at 8.00 m. Target Depth Achieved.			

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For explanation and abbreviations and symbols, refer to Soil Description Notes & Abbreviations (SEN-TECH-051).

Attachment B: Laboratory Reports

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 366091

Client Details

Client	Senversa Pty Ltd
Attention	Zoe Smith
Address	6/15 William St, Melbourne, VIC, 3000

Sample Details

Your Reference	**S22013, Mars Road DSI**
Number of Samples	20 Soil, 2 Material, 1 Water
Date samples received	12/11/2024
Date completed instructions received	18/11/2024

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.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	25/11/2024
Date of Issue	25/11/2024

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Asbestos Approved By
Analysed by Asbestos Approved Analyst: Amanda Lee, Lucy Zhu
Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By
Dragana Tomas, Senior Chemist
Giovanni Agosti, Group Technical Manager
Lucy Zhu, Asbestos Supervisor
Sean McAlary, Senior Chemist
Tabitha Roberts, Senior Chemist
Timothy Toll, Senior Chemist

Authorised By
Nancy Zhang, Laboratory Manager

VOCs in soil				
Our Reference		366091-5	366091-12	366091-18
Your Reference	UNITS	BH14_4.0-4.2	BH16_1.0-2.1	BH28_0.9-1.0
Date Sampled		11/11/2024	11/11/2024	11/11/2024
Type of sample		Soil	Soil	Soil
Date Extracted	-	20/11/2024	20/11/2024	20/11/2024
Date Analysed	-	21/11/2024	21/11/2024	21/11/2024
Dichlorodifluoromethane	mg/kg	<1	<1	<1
Chloromethane	mg/kg	<1	<1	<1
Vinyl Chloride	mg/kg	<1	<1	<1
Bromomethane	mg/kg	<1	<1	<1
Chloroethane	mg/kg	<1	<1	<1
Trichlorofluoromethane	mg/kg	<1	<1	<1
1,1-Dichloroethene	mg/kg	<1	<1	<1
trans-1,2-Dichloroethene	mg/kg	<1	<1	<1
1,1-Dichloroethane	mg/kg	<1	<1	<1
cis-1,2-Dichloroethene	mg/kg	<1	<1	<1
Bromochloromethane	mg/kg	<1	<1	<1
Chloroform	mg/kg	<1	<1	<1
2,2-Dichloropropane	mg/kg	<1	<1	<1
1,2-Dichloroethane	mg/kg	<1	<1	<1
1,1,1-Trichloroethane	mg/kg	<1	<1	<1
1,1-Dichloropropene	mg/kg	<1	<1	<1
Cyclohexane	mg/kg	<1	<1	<1
Carbon Tetrachloride	mg/kg	<1	<1	<1
Benzene	mg/kg	<0.2	<0.2	<0.2
Dibromomethane	mg/kg	<1	<1	<1
1,2-Dichloropropane	mg/kg	<1	<1	<1
Trichloroethene	mg/kg	<1	<1	<1
Bromodichloromethane	mg/kg	<1	<1	<1
trans-1,3-Dichloropropene	mg/kg	<1	<1	<1
cis-1,3-Dichloropropene	mg/kg	<1	<1	<1
1,1,2-Trichloroethane	mg/kg	<1	<1	<1
Toluene	mg/kg	<0.5	<0.5	<0.5
1,3-Dichloropropane	mg/kg	<1	<1	<1
Dibromochloromethane	mg/kg	<1	<1	<1
1,2-Dibromoethane	mg/kg	<1	<1	<1
Tetrachloroethene	mg/kg	<1	<1	<1
1,1,1,2-Tetrachloroethane	mg/kg	<1	<1	<1
Chlorobenzene	mg/kg	<1	<1	<1
Ethylbenzene	mg/kg	<1	<1	<1

VOCs in soil				
Our Reference	UNITS	366091-5	366091-12	366091-18
Your Reference		BH14_4.0-4.2	BH16_1.0-2.1	BH28_0.9-1.0
Date Sampled		11/11/2024	11/11/2024	11/11/2024
Type of sample		Soil	Soil	Soil
Bromoform	mg/kg	<1	<1	<1
m+p-Xylene	mg/kg	<2	<2	<2
Styrene	mg/kg	<1	<1	<1
1,1,2,2-Tetrachloroethane	mg/kg	<1	<1	<1
o-Xylene	mg/kg	<1	<1	<1
1,2,3-Trichloropropane	mg/kg	<1	<1	<1
Isopropylbenzene	mg/kg	<1	<1	<1
Bromobenzene	mg/kg	<1	<1	<1
n-Propylbenzene	mg/kg	<1	<1	<1
2-Chlorotoluene	mg/kg	<1	<1	<1
4-Chlorotoluene	mg/kg	<1	<1	<1
1,3,5-Trimethylbenzene	mg/kg	<1	<1	<1
tert-Butylbenzene	mg/kg	<1	<1	<1
1,2,4-Trimethylbenzene	mg/kg	<1	<1	<1
1,3-Dichlorobenzene	mg/kg	<1	<1	<1
sec-Butylbenzene	mg/kg	<1	<1	<1
1,4-Dichlorobenzene	mg/kg	<1	<1	<1
4-Isopropyltoluene	mg/kg	<1	<1	<1
1,2-Dichlorobenzene	mg/kg	<1	<1	<1
n-Butylbenzene	mg/kg	<1	<1	<1
1,2-Dibromo-3-chloropropane	mg/kg	<1	<1	<1
1,2,4-Trichlorobenzene	mg/kg	<1	<1	<1
Hexachlorobutadiene	mg/kg	<1	<1	<1
1,2,3-Trichlorobenzene	mg/kg	<1	<1	<1
Surrogate Dibromofluoromethane	%	100	101	102
Surrogate aaa-Trifluorotoluene	%	109	117	105
Surrogate Toluene-d_8	%	97	101	101
Surrogate 4-Bromofluorobenzene	%	102	95	95

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		366091-1	366091-5	366091-9	366091-12	366091-14
Your Reference	UNITS	BH14_0.16-0.2	BH14_4.0-4.2	BH14_7.8-8.0	BH16_1.0-2.1	BH16_4.0-4.1
Date Sampled		11/11/2024	11/11/2024	11/11/2024	11/11/2024	11/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024	21/11/2024	21/11/2024
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	100	109	106	117	108

vTRH(C6-C10)/BTEXN in Soil					
Our Reference		366091-16	366091-18	366091-19	366091-23
Your Reference	UNITS	BH28_0-0.2	BH28_0.9-1.0	BH29_0-0.1	QC400
Date Sampled		11/11/2024	11/11/2024	11/11/2024	11/11/2024
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024	21/11/2024
TRH C_6 - C_9	mg/kg	<25	<25	<25	[NA]
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	[NA]
vTRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	[NA]
Benzene	mg/kg	<0.2	<0.2	<0.2	102%
Toluene	mg/kg	<0.5	<0.5	<0.5	101%
Ethylbenzene	mg/kg	<1	<1	<1	102%
m+p-xylene	mg/kg	<2	<2	<2	102%
o-Xylene	mg/kg	<1	<1	<1	102%
Naphthalene	mg/kg	<1	<1	<1	[NA]
Total +ve Xylenes	mg/kg	<1	<1	<1	[NA]
Surrogate aaa-Trifluorotoluene	%	104	105	107	97

svTRH (C10-C40) in Soil						
Our Reference		366091-1	366091-5	366091-9	366091-12	366091-14
Your Reference	UNITS	BH14_0.16-0.2	BH14_4.0-4.2	BH14_7.8-8.0	BH16_1.0-2.1	BH16_4.0-4.1
Date Sampled		11/11/2024	11/11/2024	11/11/2024	11/11/2024	11/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024	21/11/2024	21/11/2024
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	90	91	88	87	90

svTRH (C10-C40) in Soil				
Our Reference		366091-16	366091-18	366091-19
Your Reference	UNITS	BH28_0-0.2	BH28_0.9-1.0	BH29_0-0.1
Date Sampled		11/11/2024	11/11/2024	11/11/2024
Type of sample		Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50
TRH >C_{10} -C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50
Surrogate o-Terphenyl	%	86	87	90

PAHs in Soil						
Our Reference		366091-1	366091-5	366091-9	366091-12	366091-14
Your Reference	UNITS	BH14_0.16-0.2	BH14_4.0-4.2	BH14_7.8-8.0	BH16_1.0-2.1	BH16_4.0-4.1
Date Sampled		11/11/2024	11/11/2024	11/11/2024	11/11/2024	11/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	22/11/2024	21/11/2024	21/11/2024	22/11/2024	21/11/2024
Naphthalene	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	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<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
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	86	94	91	82	91

PAHs in Soil				
Our Reference		366091-16	366091-18	366091-19
Your Reference	UNITS	BH28_0-0.2	BH28_0.9-1.0	BH29_0-0.1
Date Sampled		11/11/2024	11/11/2024	11/11/2024
Type of sample		Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	22/11/2024	22/11/2024	22/11/2024
Naphthalene	mg/kg	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	0.1
Pyrene	mg/kg	<0.1	<0.1	0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	0.2
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	74	82	82

Organochlorine Pesticides in soil						
Our Reference		366091-1	366091-12	366091-16	366091-18	366091-19
Your Reference	UNITS	BH14_0.16-0.2	BH16_1.0-2.1	BH28_0-0.2	BH28_0.9-1.0	BH29_0-0.1
Date Sampled		11/11/2024	11/11/2024	11/11/2024	11/11/2024	11/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total Positive Aldrin+Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	78	78	77	69	81

PCBs in Soil						
Our Reference		366091-1	366091-12	366091-16	366091-18	366091-19
Your Reference	UNITS	BH14_0.16-0.2	BH16_1.0-2.1	BH28_0-0.2	BH28_0.9-1.0	BH29_0-0.1
Date Sampled		11/11/2024	11/11/2024	11/11/2024	11/11/2024	11/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 2-Fluorobiphenyl	%	87	86	84	81	85

Acid Extractable metals in soil						
Our Reference		366091-1	366091-5	366091-9	366091-12	366091-14
Your Reference	UNITS	BH14_0.16-0.2	BH14_4.0-4.2	BH14_7.8-8.0	BH16_1.0-2.1	BH16_4.0-4.1
Date Sampled		11/11/2024	11/11/2024	11/11/2024	11/11/2024	11/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024	21/11/2024	21/11/2024
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	9	4	10	15	7
Copper	mg/kg	12	<1	5	4	2
Lead	mg/kg	12	5	11	11	3
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	14	2	2	3	2
Zinc	mg/kg	20	9	17	14	8

Acid Extractable metals in soil				
Our Reference		366091-16	366091-18	366091-19
Your Reference	UNITS	BH28_0-0.2	BH28_0.9-1.0	BH29_0-0.1
Date Sampled		11/11/2024	11/11/2024	11/11/2024
Type of sample		Soil	Soil	Soil
Date prepared	-	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024
Arsenic	mg/kg	<4	6	4
Cadmium	mg/kg	<0.4	<0.4	<0.4
Chromium	mg/kg	12	5	15
Copper	mg/kg	5	19	10
Lead	mg/kg	12	13	69
Mercury	mg/kg	<0.1	<0.1	0.1
Nickel	mg/kg	5	1	6
Zinc	mg/kg	16	6	40

Moisture						
Our Reference		366091-1	366091-5	366091-9	366091-12	366091-14
Your Reference	UNITS	BH14_0.16-0.2	BH14_4.0-4.2	BH14_7.8-8.0	BH16_1.0-2.1	BH16_4.0-4.1
Date Sampled		11/11/2024	11/11/2024	11/11/2024	11/11/2024	11/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024	21/11/2024	21/11/2024
Moisture	%	5.2	3.1	7.6	7.0	2.9

Moisture				
Our Reference		366091-16	366091-18	366091-19
Your Reference	UNITS	BH28_0-0.2	BH28_0.9-1.0	BH29_0-0.1
Date Sampled		11/11/2024	11/11/2024	11/11/2024
Type of sample		Soil	Soil	Soil
Date prepared	-	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024
Moisture	%	3.6	2.4	13

Asbestos ID - soils NEPM - ASB-001						
Our Reference		366091-1	366091-12	366091-16	366091-18	366091-19
Your Reference	UNITS	BH14_0.16-0.2	BH16_1.0-2.1	BH28_0-0.2	BH28_0.9-1.0	BH29_0-0.1
Date Sampled		11/11/2024	11/11/2024	11/11/2024	11/11/2024	11/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024
Sample mass tested	g	958.69	609.77	704.39	694.74	796.68
Sample Description	-	Brown sandy soil & rocks	Brown sandy soil & rocks	Brown sandy soil & rocks	Brown sandy soil & rocks	Brown sandy soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos[#1]	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	–	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001
Asbestos comments	-	Nil	Nil	Nil	Nil	Nil

Asbestos ID - materials			
Our Reference	UNITS	366091-20	366091-21
Your Reference		PACM_01	PACM_02
Date Sampled		11/11/2024	11/11/2024
Type of sample		Material	Material
Date analysed	-	19/11/2024	19/11/2024
Mass / Dimension of Sample	-	84x66x5mm	106x68x7mm
Sample Description	-	Grey fibre cement material	Grey cement-like material
Asbestos ID in materials	-	Chrysotile asbestos detected	No asbestos detected
Trace Analysis	-	[NT]	No asbestos detected

PFAS in Soils Short			
Our Reference		366091-1	366091-12
Your Reference	UNITS	BH14_0.16-0.2	BH16_1.0-2.1
Date Sampled		11/11/2024	11/11/2024
Type of sample		Soil	Soil
Date prepared	-	20/11/2024	20/11/2024
Date analysed	-	20/11/2024	20/11/2024
Perfluorobutanesulfonic acid	µg/kg	<0.1	<0.1
Perfluorohexanesulfonic acid - PFHxS	µg/kg	<0.1	<0.1
Perfluorooctanesulfonic acid PFOS	µg/kg	0.2	<0.1
Perfluorooctanoic acid PFOA	µg/kg	0.1	<0.1
6:2 FTS	µg/kg	<0.1	<0.1
8:2 FTS	µg/kg	<0.2	<0.2
Surrogate $^{13}C_8$ *PFOS*	%	98	98
Surrogate $^{13}C_2$ *PFOA*	%	100	104
Extracted ISTD $^{13}C_3$ *PFBS*	%	103	102
Extracted ISTD $^{18}O_2$ *PFHxS*	%	102	101
Extracted ISTD $^{13}C_4$ *PFOS*	%	107	102
Extracted ISTD $^{13}C_4$ *PFOA*	%	105	99
Extracted ISTD $^{13}C_2$ *6:2FTS*	%	110	106
Extracted ISTD $^{13}C_2$ *8:2FTS*	%	113	118
Total Positive PFHxS & PFOS	µg/kg	0.2	<0.1
Total Positive PFOS & PFOA	µg/kg	0.3	<0.1
Total Positive PFAS	µg/kg	0.3	<0.1

PFAS in TCLP Short			
Our Reference		366091-1	366091-12
Your Reference	UNITS	BH14_0.16-0.2	BH16_1.0-2.1
Date Sampled		11/11/2024	11/11/2024
Type of sample		Soil	Soil
Date prepared	-	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024
pH of soil for fluid# determ.	pH units	8.7	8.5
pH of soil TCLP (after HCl)	pH units	1.6	1.6
Extraction fluid used		1	1
pH of final Leachate	pH units	4.9	4.9
Perfluorobutanesulfonic acid	µg/L	<0.01	<0.01
Perfluorohexanesulfonic acid - PFHxS	µg/L	<0.01	<0.01
Perfluorooctanesulfonic acid PFOS	µg/L	<0.01	<0.01
Perfluorooctanoic acid PFOA	µg/L	<0.01	<0.01
6:2 FTS	µg/L	<0.01	<0.01
8:2 FTS	µg/L	<0.02	<0.02
Surrogate $^{13}C_8$ *PFOS*	%	102	100
Surrogate $^{13}C_2$ *PFOA*	%	105	99
Extracted ISTD $^{13}C_3$ *PFBS*	%	98	99
Extracted ISTD $^{18}O_2$ *PFHxS*	%	95	99
Extracted ISTD $^{13}C_4$ *PFOS*	%	97	95
Extracted ISTD $^{13}C_4$ *PFOA*	%	95	99
Extracted ISTD $^{13}C_2$ *6:2FTS*	%	68	65
Extracted ISTD $^{13}C_2$ *8:2FTS*	%	75	72
Total Positive PFHxS & PFOS	µg/L	<0.01	<0.01
Total Positive PFOS & PFOA	µg/L	<0.01	<0.01
Total Positive PFAS	µg/L	<0.01	<0.01

vTRH(C6-C10)/BTEXN in Water		
Our Reference	UNITS	366091-22
Your Reference		QC300
Date Sampled		11/11/2024
Type of sample		Water
Date extracted	-	21/11/2024
Date analysed	-	22/11/2024
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	%	101
Surrogate Toluene-d8	%	99
Surrogate 4-Bromofluorobenzene	%	95

svTRH (C10-C40) in Water		
Our Reference	UNITS	366091-22
Your Reference		QC300
Date Sampled		11/11/2024
Type of sample		Water
Date extracted	-	20/11/2024
Date analysed	-	21/11/2024
TRH C_{10} - C_{14}	µg/L	<50
TRH C_{15} - C_{28}	µg/L	<100
TRH C_{29} - C_{36}	µg/L	<100
Total +ve TRH (C10-C36)	µg/L	<50
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
Total +ve TRH (>C10-C40)	µg/L	<50
Surrogate o-Terphenyl	%	80

Metals in Waters - Acid extractable		
Our Reference		366091-22
Your Reference	UNITS	QC300
Date Sampled		11/11/2024
Type of sample		Water
Date prepared	-	20/11/2024
Date analysed	-	20/11/2024
Arsenic - Total	mg/L	<0.05
Cadmium - Total	mg/L	<0.01
Chromium - Total	mg/L	<0.01
Copper - Total	mg/L	<0.01
Lead - Total	mg/L	<0.03
Mercury - Total	mg/L	<0.0005
Nickel - Total	mg/L	<0.02
Zinc - Total	mg/L	<0.02

PFAS in Waters Short		
Our Reference	UNITS	366091-22
Your Reference		QC300
Date Sampled		11/11/2024
Type of sample		Water
Date prepared	-	22/11/2024
Date analysed	-	22/11/2024
Perfluorobutanesulfonic acid	µg/L	<0.01
Perfluorohexanesulfonic acid - PFHxS	µg/L	<0.01
Perfluorooctanesulfonic acid PFOS	µg/L	<0.01
Perfluorooctanoic acid PFOA	µg/L	<0.01
6:2 FTS	µg/L	<0.01
8:2 FTS	µg/L	<0.02
Surrogate $^{13}C_8$ *PFOS*	%	98
Surrogate $^{13}C_2$ *PFOA*	%	99
Extracted ISTD $^{13}C_3$ *PFBS*	%	102
Extracted ISTD $^{18}O_2$ *PFHxS*	%	92
Extracted ISTD $^{13}C_4$ *PFOS*	%	93
Extracted ISTD $^{13}C_4$ *PFOA*	%	94
Extracted ISTD $^{13}C_2$ *6:2FTS*	%	78
Extracted ISTD $^{13}C_2$ *8:2FTS*	%	80
Total Positive PFHxS & PFOS	µg/L	<0.01
Total Positive PFOA & PFOS	µg/L	<0.01
Total Positive PFAS	µg/L	<0.01

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
ASB-001	Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit of 0.1g/kg (0.01% w/w) as per Australian Standard AS4964-2004. Results reported denoted with * are outside our scope of NATA accreditation. NOTE#1 Total Asbestos g/kg was analysed and reported as per Australian Standard AS4964 (This is the sum of ACM >7mm, <7mm and FA/AF relative to the sample mass tested) NOTE#2 The screening level of 0.001% w/w asbestos in soil for FA and AF only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres. Estimation = Estimated asbestos weight Results reported with "--" is equivalent to no visible asbestos identified using Polarised Light microscopy and Dispersion Staining Techniques.
Inorg-004	Toxicity Characteristic Leaching Procedure (TCLP) using AS 4439. Please note that the mass used may be scaled down from default based on sample mass available. Samples are stored at 2-6oC before and after leachate preparation.
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.

Method ID	Methodology Summary
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-021/022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD and/or GC-MS/GC-MSMS. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.
Org-022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS/GC-MSMS. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
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	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.
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.
Org-029	Soil samples are extracted with basified Methanol. Waters and soil extracts are directly injected and/or concentrated/extracted using SPE. TCLPs/ASLP leachates are centrifuged, the supernatant is then analysed (including amendment with solvent) - as per the option in AS4439.3. Analysis is undertaken with LC-MS/MS. PFAS results include the sum of branched and linear isomers where applicable. Please note that PFAS results are corrected for Extracted Internal Standards (QSM 5.4 Table B-15 terminology), which are mass labelled analytes added prior to sample preparation to assess matrix effects and verify processing of the sample. PFAS analytes without a commercially available mass labelled analogue are corrected vs a closely eluting mass labelled PFAS compound. Surrogates are also reported, in this context they are mass labelled PFAS compounds added prior to extraction but are used as monitoring compounds only (not used for result correction). Envicarb (or similar) is used discretionally to remove interfering matrix components. Please contact the laboratory if estimates of Measurement Uncertainty are required as per WA DER.

QUALITY CONTROL: VOCs in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	[NT]
Date Extracted	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Date Analysed	-			21/11/2024	[NT]	[NT]	[NT]	[NT]	21/11/2024	[NT]
Dichlorodifluoromethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chloromethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Vinyl Chloride	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromomethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chloroethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Trichlorofluoromethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1-Dichloroethene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
trans-1,2-Dichloroethene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1-Dichloroethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	116	[NT]
cis-1,2-Dichloroethene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromochloromethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chloroform	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	121	[NT]
2,2-Dichloropropane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-Dichloroethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	113	[NT]
1,1,1-Trichloroethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	113	[NT]
1,1-Dichloropropene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Cyclohexane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Carbon Tetrachloride	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzene	mg/kg	0.2	Org-023	<0.2	[NT]	[NT]	[NT]	[NT]	114	[NT]
Dibromomethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-Dichloropropane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Trichloroethene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	110	[NT]
Bromodichloromethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	113	[NT]
trans-1,3-Dichloropropene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
cis-1,3-Dichloropropene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1,2-Trichloroethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Toluene	mg/kg	0.5	Org-023	<0.5	[NT]	[NT]	[NT]	[NT]	116	[NT]
1,3-Dichloropropane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibromochloromethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	107	[NT]
1,2-Dibromoethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Tetrachloroethene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	109	[NT]
1,1,1,2-Tetrachloroethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chlorobenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	117	[NT]
Bromoform	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
m+p-Xylene	mg/kg	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	118	[NT]
Styrene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1,2,2-Tetrachloroethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]

QUALITY CONTROL: VOCs in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	[NT]
o-Xylene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	118	[NT]
1,2,3-Trichloropropane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Isopropylbenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromobenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
n-Propylbenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2-Chlorotoluene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
4-Chlorotoluene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3,5-Trimethylbenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
tert-Butylbenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,4-Trimethylbenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3-Dichlorobenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
sec-Butylbenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,4-Dichlorobenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
4-Isopropyltoluene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-Dichlorobenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
n-Butylbenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-Dibromo-3-chloropropane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,4-Trichlorobenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Hexachlorobutadiene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,3-Trichlorobenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	101	[NT]	[NT]	[NT]	[NT]	97	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	115	[NT]	[NT]	[NT]	[NT]	110	[NT]
Surrogate Toluene-d_8	%		Org-023	101	[NT]	[NT]	[NT]	[NT]	97	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-023	95	[NT]	[NT]	[NT]	[NT]	99	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	[NT]
Date extracted	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Date analysed	-			21/11/2024	[NT]	[NT]	[NT]	[NT]	21/11/2024	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	117	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	117	[NT]
Benzene	mg/kg	0.2	Org-023	<0.2	[NT]	[NT]	[NT]	[NT]	114	[NT]
Toluene	mg/kg	0.5	Org-023	<0.5	[NT]	[NT]	[NT]	[NT]	116	[NT]
Ethylbenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	117	[NT]
m+p-xylene	mg/kg	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	118	[NT]
o-Xylene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	118	[NT]
Naphthalene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	115	[NT]	[NT]	[NT]	[NT]	110	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	[NT]
Date extracted	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Date analysed	-			21/11/2024	[NT]	[NT]	[NT]	[NT]	21/11/2024	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	109	[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]	100	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	109	[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]	100	[NT]
Surrogate o-Terphenyl	%		Org-020	91	[NT]	[NT]	[NT]	[NT]	92	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	[NT]
Date extracted	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Date analysed	-			22/11/2024	[NT]	[NT]	[NT]	[NT]	22/11/2024	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	74	[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]	76	[NT]
Fluorene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	72	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	76	[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]	68	[NT]
Pyrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	70	[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]	80	[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]	73	[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	73	[NT]	[NT]	[NT]	[NT]	86	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	[NT]
Date extracted	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Date analysed	-			22/11/2024	[NT]	[NT]	[NT]	[NT]	22/11/2024	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	86	[NT]
HCB	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	80	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	70	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	72	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	86	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	70	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	80	[NT]
Endrin	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	74	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	78	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	70	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Mirex	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	67	[NT]	[NT]	[NT]	[NT]	85	[NT]

QUALITY CONTROL: PCBs in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	[NT]
Date extracted	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Date analysed	-			22/11/2024	[NT]	[NT]	[NT]	[NT]	22/11/2024	[NT]
Aroclor 1016	mg/kg	0.1	Org-021/022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021/022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021/022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021/022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021/022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021/022/025	<0.1	[NT]	[NT]	[NT]	[NT]	75	[NT]
Aroclor 1260	mg/kg	0.1	Org-021/022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate 2-Fluorobiphenyl	%		Org-021/022/025	85	[NT]	[NT]	[NT]	[NT]	86	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	[NT]
Date prepared	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Date analysed	-			21/11/2024	[NT]	[NT]	[NT]	[NT]	21/11/2024	[NT]
Arsenic	mg/kg	4	Metals-020	<4	[NT]	[NT]	[NT]	[NT]	102	[NT]
Cadmium	mg/kg	0.4	Metals-020	<0.4	[NT]	[NT]	[NT]	[NT]	92	[NT]
Chromium	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	96	[NT]
Copper	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Lead	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	96	[NT]
Mercury	mg/kg	0.1	Metals-021	<0.1	[NT]	[NT]	[NT]	[NT]	108	[NT]
Nickel	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	99	[NT]
Zinc	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	96	[NT]

QUALITY CONTROL: PFAS in Soils Short						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	[NT]
Date prepared	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Date analysed	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Perfluorobutanesulfonic acid	µg/kg	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	88	[NT]
Perfluorohexanesulfonic acid - PFHxS	µg/kg	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	96	[NT]
Perfluorooctanesulfonic acid PFOS	µg/kg	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	93	[NT]
Perfluorooctanoic acid PFOA	µg/kg	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	90	[NT]
6:2 FTS	µg/kg	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	91	[NT]
8:2 FTS	µg/kg	0.2	Org-029	<0.2	[NT]	[NT]	[NT]	[NT]	89	[NT]
Surrogate $^{13}C_8$ *PFOS*	%		Org-029	98	[NT]	[NT]	[NT]	[NT]	96	[NT]
Surrogate $^{13}C_2$ *PFOA*	%		Org-029	106	[NT]	[NT]	[NT]	[NT]	100	[NT]
Extracted ISTD $^{13}C_3$ *PFBS*	%		Org-029	108	[NT]	[NT]	[NT]	[NT]	109	[NT]
Extracted ISTD $^{18}O_2$ *PFHxS*	%		Org-029	105	[NT]	[NT]	[NT]	[NT]	105	[NT]
Extracted ISTD $^{13}C_4$ *PFOS*	%		Org-029	108	[NT]	[NT]	[NT]	[NT]	107	[NT]
Extracted ISTD $^{13}C_4$ *PFOA*	%		Org-029	101	[NT]	[NT]	[NT]	[NT]	106	[NT]
Extracted ISTD $^{13}C_2$ *6:2FTS*	%		Org-029	109	[NT]	[NT]	[NT]	[NT]	113	[NT]
Extracted ISTD $^{13}C_2$ *8:2FTS*	%		Org-029	120	[NT]	[NT]	[NT]	[NT]	128	[NT]

QUALITY CONTROL: PFAS in TCLP Short					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Date analysed	-			21/11/2024	[NT]	[NT]	[NT]	[NT]	21/11/2024	[NT]
Perfluorobutanesulfonic acid	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	103	[NT]
Perfluorohexanesulfonic acid - PFHxS	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	102	[NT]
Perfluorooctanesulfonic acid PFOS	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	104	[NT]
Perfluorooctanoic acid PFOA	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	104	[NT]
6:2 FTS	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	101	[NT]
8:2 FTS	µg/L	0.02	Org-029	<0.02	[NT]	[NT]	[NT]	[NT]	91	[NT]
Surrogate $^{13}C_8$ *PFOS*	%		Org-029	102	[NT]	[NT]	[NT]	[NT]	102	[NT]
Surrogate $^{13}C_2$ *PFOA*	%		Org-029	103	[NT]	[NT]	[NT]	[NT]	102	[NT]
Extracted ISTD $^{13}C_3$ *PFBS*	%		Org-029	102	[NT]	[NT]	[NT]	[NT]	94	[NT]
Extracted ISTD $^{18}O_2$ *PFHxS*	%		Org-029	105	[NT]	[NT]	[NT]	[NT]	101	[NT]
Extracted ISTD $^{13}C_4$ *PFOS*	%		Org-029	100	[NT]	[NT]	[NT]	[NT]	97	[NT]
Extracted ISTD $^{13}C_4$ *PFOA*	%		Org-029	95	[NT]	[NT]	[NT]	[NT]	95	[NT]
Extracted ISTD $^{13}C_2$ *6:2FTS*	%		Org-029	68	[NT]	[NT]	[NT]	[NT]	62	[NT]
Extracted ISTD $^{13}C_2$ *8:2FTS*	%		Org-029	75	[NT]	[NT]	[NT]	[NT]	72	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			21/11/2024	[NT]	[NT]	[NT]	[NT]	21/11/2024	[NT]
Date analysed	-			22/11/2024	[NT]	[NT]	[NT]	[NT]	22/11/2024	[NT]
TRH C_6 - C_9	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	98	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	98	[NT]
Benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Toluene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	98	[NT]
m+p-xylene	µg/L	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	97	[NT]
o-xylene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	97	[NT]
Naphthalene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	101	[NT]	[NT]	[NT]	[NT]	100	[NT]
Surrogate Toluene-d8	%		Org-023	99	[NT]	[NT]	[NT]	[NT]	101	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-023	98	[NT]	[NT]	[NT]	[NT]	99	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Date analysed	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
TRH C_{10} - C_{14}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	109	[NT]
TRH C_{15} - C_{28}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	115	[NT]
TRH C_{29} - C_{36}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	100	[NT]
TRH >C_{10} - C_{16}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	109	[NT]
TRH >C_{16} - C_{34}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	115	[NT]
TRH >C_{34} - C_{40}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	100	[NT]
Surrogate o-Terphenyl	%		Org-020	64	[NT]	[NT]	[NT]	[NT]	120	[NT]

QUALITY CONTROL: Metals in Waters - Acid extractable						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Date analysed	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Arsenic - Total	mg/L	0.05	Metals-020	<0.05	[NT]	[NT]	[NT]	[NT]	111	[NT]
Cadmium - Total	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	103	[NT]
Chromium - Total	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	103	[NT]
Copper - Total	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	110	[NT]
Lead - Total	mg/L	0.03	Metals-020	<0.03	[NT]	[NT]	[NT]	[NT]	105	[NT]
Mercury - Total	mg/L	0.0005	Metals-021	<0.0005	[NT]	[NT]	[NT]	[NT]	112	[NT]
Nickel - Total	mg/L	0.02	Metals-020	<0.02	[NT]	[NT]	[NT]	[NT]	104	[NT]
Zinc - Total	mg/L	0.02	Metals-020	<0.02	[NT]	[NT]	[NT]	[NT]	105	[NT]

QUALITY CONTROL: PFAS in Waters Short						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	366091-22
Date prepared	-			22/11/2024	[NT]	[NT]	[NT]	[NT]	22/11/2024	22/11/2024
Date analysed	-			22/11/2024	[NT]	[NT]	[NT]	[NT]	22/11/2024	22/11/2024
Perfluorobutanesulfonic acid	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	102	104
Perfluorohexanesulfonic acid - PFHxS	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	102	100
Perfluorooctanesulfonic acid PFOS	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	97	93
Perfluorooctanoic acid PFOA	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	102	97
6:2 FTS	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	112	103
8:2 FTS	µg/L	0.02	Org-029	<0.02	[NT]	[NT]	[NT]	[NT]	109	104
Surrogate $^{13}C_8$ *PFOS*	%		Org-029	93	[NT]	[NT]	[NT]	[NT]	94	91
Surrogate $^{13}C_2$ *PFOA*	%		Org-029	100	[NT]	[NT]	[NT]	[NT]	98	101
Extracted ISTD $^{13}C_3$ *PFBS*	%		Org-029	100	[NT]	[NT]	[NT]	[NT]	98	94
Extracted ISTD $^{18}O_2$ *PFHxS*	%		Org-029	97	[NT]	[NT]	[NT]	[NT]	94	93
Extracted ISTD $^{13}C_4$ *PFOS*	%		Org-029	98	[NT]	[NT]	[NT]	[NT]	100	97
Extracted ISTD $^{13}C_4$ *PFOA*	%		Org-029	93	[NT]	[NT]	[NT]	[NT]	95	93
Extracted ISTD $^{13}C_2$ *6:2FTS*	%		Org-029	80	[NT]	[NT]	[NT]	[NT]	88	86
Extracted ISTD $^{13}C_2$ *8:2FTS*	%		Org-029	83	[NT]	[NT]	[NT]	[NT]	92	89

Result Definitions

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

Quality Control Definitions

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

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

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

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

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

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

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

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

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

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

Report Comments

Asbestos-ID in soil: NEPM
This report is consistent with the reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013. This is reported outside our scope of NATA accreditation.

CoC updated: 18/11/24, 1832

S22013, Mars Road DSI

	Sample Name	Lab Report	Comment	Date Time	Combo 1M	PFAS Shot Suite	BTEX	Combo 5AN	Combo 3	Combo 5	VOC	Asbestos ID	Asbestos NEPM	TCLP PFAS short suite	HOLD
1	BH14_0.16-0.2	366091	-	11/11/2024 9:41		X		X						X	
2	BH14_0.5-0.6	366091	-	11/11/2024 9:41											X
3	BH14_2.0-2.2	366091	-	11/11/2024 9:56											X
4	BH14_3.0-3.2	366091	-	11/11/2024 10:22											X
5	BH14_4.0-4.2	366091	-	11/11/2024 10:38					X		X				
6	BH14_5.0-5.2	366091	-	11/11/2024 10:49											X
7	BH14_6.0-6.2	366091	-	11/11/2024 11:08											X
8	BH14_7.0-7.2	366091	-	11/11/2024 11:24											X
9	BH14_7.8-8.0	366091	-	11/11/2024 12:28					X						
10	BH16_0.16-0.2	366091	-	11/11/2024 14:14											X
11	BH16_0.5-0.6	366091	-	11/11/2024 14:20											X
12	BH16_1.0-1.2	366091	-	11/11/2024 14:40		X		X			X			X	
13	BH16_2.0-2.1	366091	-	11/11/2024 15:41											X
14	BH16_4.0-4.1	366091	-	11/11/2024 16:18					X						
15	BH16_6.0-6.1	366091	-	11/11/2024 16:53											X
16	BH28_0.0-0.2	366091	-	11/11/2024 16:23				X							
17	BH28_0.5-0.6	366091	-	11/11/2024 16:23											X
18	BH28_0.9-1.0	366091	-	11/11/2024 16:23				X			X				
19	BH29_0.0-0.1	366091	-	12/11/2024 8:04				X							
20	PACM_01	366091	-	11/11/2024								X			
21	PACM_02	366091	-	11/11/2024								X			
22	QC300	366091	-	11/11/2024 0:00	X	X									
23	QC400	366091	-	11/11/2024 0:00			X								

ENVIROLAB GROUP
Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 366091

Date Received: 12/11/24
Time Received: 0900
Received By: KC
Temp: Cool/Ambient
Cooling: Ice/Icepack 5°C
Security: Intact/Broken/None

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Date Received: 12/11/24
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Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

5°C

Laboratory:
Address:
Contact: Sample Receipt
Phone:

Chain of Custody Documentation

senversa
Senversa Pty Ltd
www.senversa.com.au
ABN 89 132 231 380

Job Number:	522013	Purchase Order:	
Project Name:	Mavs Road DSI	Quote No:	245516v2
Sampled By:	LO HY	Turn Around Time:	
Project Manager:	Zoe Smith	Page:	1 of 2
Email Report To:	zoe.smith@senversa.com.au	Phone/Mobile:	

Lab ID	Sample ID	Matrix *	Date	Time	Container Info: Type / Code	Container Info: Total Bottles	Analysis Required: Heavy metals 8	BTEXN	TRH	PAH	OCP	PCB	VOC	PFAS	Asbestos Quantification	Asbestos absent / present for Trench	HOLD	Comments: e.g. Highly contaminated sample; hazardous materials present; trace LORs etc.
1	BH14_0.16-0.2	Soil	11/11/24	AM	ACMBag, Jar, PFAS	x3											X	
2	BH14_0.5-0.6				JAR, PFAS	x2											X	
3	BH14_2.0-2.2				JAR, PFAS	x2											X	
4	BH14_3.0-3.2				JAR, PFAS	x2											X	
5	BH14_4.0-4.2				JAR, PFAS	x2											X	
6	BH14_5.0-5.2				JAR, PFAS	x2											X	
7	BH14_6.0-6.2				JAR, PFAS	x2											X	
8	BH14_7.0_7.2				JAR, PFAS	x2											X	
9	BH14_7.9-8.0				JAR, PFAS	x2											X	
10	BH16_0.16-0.2					x3											X	
11	BH16_0.5-0.6					x2											X	
12	BH16_1.0-1.1					x3											X	
13	BH16_2.0-2.1					x2											X	
14	BH16_4.0-4.1					x2											X	
15	BH16_6.0-6.1					x2											X	
Total																		

Sampler: I attest that proper field sampling procedures in accordance with Senversa standard procedures and/or project specifications were used during the collection of these samples:

Sampler Name: Lucas Dzwiekowski | Signature: | Date: 11/11/24

Relinquished By:		Method of Shipment (if applicable):	Received by:	
Name/Signature: Lucas Dzwiekowski	Date: 11/11/24	Carrier / Reference #:	Name/Signature: Katherine Chevez	Date: 12/11/24
Of:	Time:	Date/Time:	Of: ELS SYD	Time: 0900
Name/Signature:	Date:	Carrier / Reference #:	Name/Signature:	Date:
Of:	Time:	Date/Time:	Of:	Time:
Name/Signature:	Date:	Carrier / Reference #:	Name/Signature:	Date:
Of:	Time:	Date/Time:	Of:	Time:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Acid (HNO_3) Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide (NaOH)/Cadmium (Cd) Preserved; S = Sodium Hydroxide Preserved Plastic; STH = Sodium thiosulfate preserved plastic; V = VOA Vial Hydochloric Acid (HCl) Preserved; VS = VOA Vial Sulphuric Preserved; VSA = Sulphuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation Bottle; SP = Sulphuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; UA = Unpreserved Amber Glass; L=Lugol's Iodine preserved white plastic bottle; SW= sulfuric acid preserved wide mouth glass jar

#366091
KC/CH 12/11/24.

senversa

Chain of Custody Documentation

Senversa Pty Ltd
www.senversa.com.au
ABN 89 132 231 380

Laboratory:
Address:
Contact: Sample Receipt
Phone:

Job Number: S22013	Purchase Order:
Project Name: Mars Road DSI	Quote No: 24SYS1602
Sampled By: LO HX	Turn Around Time:
Project Manager: Zoe Smith	Page: 2 of 2
Email Report To: zoe.smith@senversa.com.au	Phone/Mobile:

Sample Information					Container Information		Analysis Required												Comments: e.g. Highly contaminated sample; hazardous materials present; trace LORs etc.
Lab ID	Sample ID	Matrix *	Date	Time	Type / Code	Total Bottles	Heavy metals 8	BTEXN	TRH	PAH	OCP	PCB	VOC	PFAS	Asbestos quantification		HOLD	
16	BH28_0-0.2	Soil	11/11/24	PM	JAR, Bag, PFAS	x3											X	
17	BH28_0.5-0.6	Soil				x3											X	
18	BH28_0.9-1.0	Soil				x3											X	
19	BH29_0-0.1	Soil				x3											X	
20	PACM-01	Soil			Bag	x1											X	
21	PACM-02	Soil			Bag	x1											X	—
22	QC300	Water			vials, bottles	x7											X	
23	QC400				vial	x1												TS
Total																		

Sampler: I attest that proper field sampling procedures in accordance with Senversa standard procedures and/or project specifications were used during the collection of these samples:

Sampler Name: Lucas Dealaleonski | Signature: | Date: 11 / 11 / 24

Relinquished By:		Method of Shipment (if applicable):	Received by:	
Name/Signature: Lucas Dealaleonski	Date: 11/11/24	Carrier / Reference #:	Name/Signature:	Date:
Of:	Time:	Date/Time:	Of:	Time:
Name/Signature:	Date:	Carrier / Reference #:	Name/Signature:	Date:
Of:	Time:	Date/Time:	Of:	Time:
Name/Signature:	Date:	Carrier / Reference #:	Name/Signature:	Date:
Of:	Time:	Date/Time:	Of:	Time:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Acid (HNO_3) Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide (NaOH)/Cadmium (Cd) Preserved; S = Sodium Hydroxide Preserved Plastic; STH = Sodium thiosulfate preserved plastic; V = VOA Vial Hydochloric Acid (HCl) Preserved; VS = VOA Vial Sulphuric Preserved; VSA = Sulphuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation Bottle; SP = Sulphuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; UA = Unpreserved Amber Glass; L=Lugol's Iodine preserved white plastic bottle; SW= sulfuric acid preserved wide mouth glass jar

Envirolab Services Pty Ltd
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12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
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DATA QUALITY ASSESSMENT SUMMARY

Report Details

Envirolab Report Reference	**366091**
Client ID	Senversa Pty Ltd
Project Reference	S22013, Mars Road DSI
Date Issued	25/11/2024

QC DATA

All laboratory QC data was within the Envirolab Group's specifications.

HOLDING TIME COMPLIANCE EVALUATION

All preservation / holding times (based on AS/ASPHA/ISO/NEPM/USEPA reference documents and standards) are compliant except:

Holding Time Exceedances

Analysis	Sample No	Date Sampled	Date Extracted	Date Analysed	Accepted
svTRH (C10-C40) in Water					
	366091-22	11/11/2024	20/11/2024	21/11/2024	✗

Certain analyses have had their recommended technical holding times elongated by filtering and/or freezing on receipt at the laboratory (e.g. BOD, chlorophyll/Pheophytin, nutrients and acid sulphate soil tests).

COMPLIANCE TO QC FREQUENCY (NEPM)

Internal laboratory QC rate complies with NEPM requirements (LCS/MB/MS 1 in 20, Duplicates 1 in 10 samples). Note, samples are batched together with other sample consignments in order to assign QC sample frequency.

QC Evaluation

Duplicate(s) was performed as per NEPM frequency	✓
Laboratory Control Sample(s) were analysed with the samples received	✓
A Method Blank was performed with the samples received	✓
Matrix spike(s) was performed as per NEPM frequency (Not Applicable for Air samples)	✓

Refer to Certificate of Analysis for all Quality Control data.

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SAMPLE RECEIPT ADVICE

Client Details

Client	Senversa Pty Ltd
Attention	Zoe Smith

Sample Login Details

Your reference	S22013, Mars Road DSI
Envirolab Reference	366091
Date Sample Received	12/11/2024
Date Instructions Received	12/11/2024
Date Results Expected to be Reported	On Hold

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	20 Soil, 2 Material, 1 Water
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	5
Cooling Method	Ice
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:

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Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides in Soil	PCBs in Soil	Misc Soil - Inorg	Acid Extractable metalsin soil	Misc Inorg - Soil	Asbestos ID - soils	On Hold
BH14_0.16-0.2											✓
BH14_0.5-0.6											✓
BH14_2.0-2.2											✓
BH14_3.0-3.2											✓
BH14_4.0-4.2											✓
BH14_5.0-5.2											✓
BH14_6.0-6.2											✓
BH14_7.0-7.2											✓
BH14_7.8-8.0											✓
BH16_0.16-0.2											✓
BH16_0.5-0.6											✓
BH16_1.0-2.1											✓
BH16_2.0-2.1											✓
BH16_4.0-4.1											✓
BH16_6.0-6.1											✓
BH28_0-0.2											✓
BH28_0.5-0.6											✓
BH28_0.9-1.0											✓
BH29_0-0.1											✓
PACM_01											✓
PACM_02											✓
QC300											✓
QC400											✓

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.

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CERTIFICATE OF ANALYSIS 366197

Client Details

Client	Senversa Pty Ltd
Attention	Zoe Smith
Address	6/15 William St, Melbourne, VIC, 3000

Sample Details

Your Reference	**S22013, Mars Road DSI**
Number of Samples	23 Soil, 1 Water, 1 Material
Date samples received	13/11/2024
Date completed instructions received	18/11/2024

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.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	25/11/2024
Date of Issue	25/11/2024

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

Asbestos Approved By
Analysed by Asbestos Approved Analyst: Nyovan Moonean
Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By
Dragana Tomas, Senior Chemist
Giovanni Agosti, Group Technical Manager
Liam Timmins, Organics Supervisor
Lucy Zhu, Asbestos Supervisor
Sean McAlary, Senior Chemist
Tabitha Roberts, Senior Chemist
Timothy Toll, Senior Chemist

Authorised By
Nancy Zhang, Laboratory Manager

VOCs in soil			
Our Reference		366197-1	366197-2
Your Reference	UNITS	BH16_7.9-8.0	BH21_0.2-0.5
Date Sampled		12/11/2024	12/11/2024
Type of sample		Soil	Soil
Date Extracted	-	20/11/2024	20/11/2024
Date Analysed	-	21/11/2024	21/11/2024
Dichlorodifluoromethane	mg/kg	<1	<1
Chloromethane	mg/kg	<1	<1
Vinyl Chloride	mg/kg	<1	<1
Bromomethane	mg/kg	<1	<1
Chloroethane	mg/kg	<1	<1
Trichlorofluoromethane	mg/kg	<1	<1
1,1-Dichloroethene	mg/kg	<1	<1
trans-1,2-Dichloroethene	mg/kg	<1	<1
1,1-Dichloroethane	mg/kg	<1	<1
cis-1,2-Dichloroethene	mg/kg	<1	<1
Bromochloromethane	mg/kg	<1	<1
Chloroform	mg/kg	<1	<1
2,2-Dichloropropane	mg/kg	<1	<1
1,2-Dichloroethane	mg/kg	<1	<1
1,1,1-Trichloroethane	mg/kg	<1	<1
1,1-Dichloropropene	mg/kg	<1	<1
Cyclohexane	mg/kg	<1	<1
Carbon Tetrachloride	mg/kg	<1	<1
Benzene	mg/kg	<0.2	<0.2
Dibromomethane	mg/kg	<1	<1
1,2-Dichloropropane	mg/kg	<1	<1
Trichloroethene	mg/kg	<1	<1
Bromodichloromethane	mg/kg	<1	<1
trans-1,3-Dichloropropene	mg/kg	<1	<1
cis-1,3-Dichloropropene	mg/kg	<1	<1
1,1,2-Trichloroethane	mg/kg	<1	<1
Toluene	mg/kg	<0.5	<0.5
1,3-Dichloropropane	mg/kg	<1	<1
Dibromochloromethane	mg/kg	<1	<1
1,2-Dibromoethane	mg/kg	<1	<1
Tetrachloroethene	mg/kg	<1	<1
1,1,1,2-Tetrachloroethane	mg/kg	<1	<1
Chlorobenzene	mg/kg	<1	<1
Ethylbenzene	mg/kg	<1	<1

VOCs in soil			
Our Reference		366197-1	366197-2
Your Reference	UNITS	BH16_7.9-8.0	BH21_0.2-0.5
Date Sampled		12/11/2024	12/11/2024
Type of sample		Soil	Soil
Bromoform	mg/kg	<1	<1
m+p-Xylene	mg/kg	<2	<2
Styrene	mg/kg	<1	<1
1,1,2,2-Tetrachloroethane	mg/kg	<1	<1
o-Xylene	mg/kg	<1	<1
1,2,3-Trichloropropane	mg/kg	<1	<1
Isopropylbenzene	mg/kg	<1	<1
Bromobenzene	mg/kg	<1	<1
n-Propylbenzene	mg/kg	<1	<1
2-Chlorotoluene	mg/kg	<1	<1
4-Chlorotoluene	mg/kg	<1	<1
1,3,5-Trimethylbenzene	mg/kg	<1	<1
tert-Butylbenzene	mg/kg	<1	<1
1,2,4-Trimethylbenzene	mg/kg	<1	<1
1,3-Dichlorobenzene	mg/kg	<1	<1
sec-Butylbenzene	mg/kg	<1	<1
1,4-Dichlorobenzene	mg/kg	<1	<1
4-Isopropyltoluene	mg/kg	<1	<1
1,2-Dichlorobenzene	mg/kg	<1	<1
n-Butylbenzene	mg/kg	<1	<1
1,2-Dibromo-3-chloropropane	mg/kg	<1	<1
1,2,4-Trichlorobenzene	mg/kg	<1	<1
Hexachlorobutadiene	mg/kg	<1	<1
1,2,3-Trichlorobenzene	mg/kg	<1	<1
Surrogate Dibromofluoromethane	%	99	99
Surrogate aaa-Trifluorotoluene	%	103	103
Surrogate Toluene-d_8	%	98	97
Surrogate 4-Bromofluorobenzene	%	102	102

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		366197-1	366197-2	366197-3	366197-4	366197-9
Your Reference	UNITS	BH16_7.9-8.0	BH21_0.2-0.5	BH21_0.7-0.8	BH21_1.1-1.2	BH21_7.9-8.0
Date Sampled		12/11/2024	12/11/2024	12/11/2024	12/11/2024	12/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024	21/11/2024	21/11/2024
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	103	103	93	114	105

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		366197-11	366197-13	366197-16	366197-17	366197-19
Your Reference	UNITS	BH18_0.25-0.3	BH18_1.0-1.1	BH13_0.4-0.5	BH30_0.0-0.1	QC100
Date Sampled		12/11/2024	12/11/2024	12/11/2024	12/11/2024	12/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024	21/11/2024	21/11/2024
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	64	<25	<25
vTRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	64	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	105	112	109	98	105

vTRH(C6-C10)/BTEXN in Soil		
Our Reference		366197-22
Your Reference	UNITS	QC401
Date Sampled		12/11/2024
Type of sample		Soil
Date extracted	-	20/11/2024
Date analysed	-	21/11/2024
Benzene	mg/kg	90%
Toluene	mg/kg	92%
Ethylbenzene	mg/kg	93%
m+p-xylene	mg/kg	92%
o-Xylene	mg/kg	92%
Surrogate aaa-Trifluorotoluene	%	93

svTRH (C10-C40) in Soil						
Our Reference		366197-1	366197-2	366197-3	366197-4	366197-9
Your Reference	UNITS	BH16_7.9-8.0	BH21_0.2-0.5	BH21_0.7-0.8	BH21_1.1-1.2	BH21_7.9-8.0
Date Sampled		12/11/2024	12/11/2024	12/11/2024	12/11/2024	12/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024	21/11/2024	21/11/2024
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	90	88	89	89	91

svTRH (C10-C40) in Soil						
Our Reference		366197-11	366197-13	366197-16	366197-17	366197-19
Your Reference	UNITS	BH18_0.25-0.3	BH18_1.0-1.1	BH13_0.4-0.5	BH30_0.0-0.1	QC100
Date Sampled		12/11/2024	12/11/2024	12/11/2024	12/11/2024	12/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024	21/11/2024	21/11/2024
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	130	<100	110
TRH C_{29} - C_{36}	mg/kg	<100	<100	120	380	130
Total +ve TRH (C10-C36)	mg/kg	<50	<50	250	380	240
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} -C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	210	280	190
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100	230	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	210	500	190
Surrogate o-Terphenyl	%	89	88	92	91	90

PAHs in Soil						
Our Reference		366197-1	366197-2	366197-3	366197-4	366197-9
Your Reference	UNITS	BH16_7.9-8.0	BH21_0.2-0.5	BH21_0.7-0.8	BH21_1.1-1.2	BH21_7.9-8.0
Date Sampled		12/11/2024	12/11/2024	12/11/2024	12/11/2024	12/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	22/11/2024	22/11/2024	21/11/2024	21/11/2024
Naphthalene	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	0.6	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	1.4	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	1.3	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	0.4	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	0.6	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	0.8	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	0.53	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	0.3	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	0.4	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	6.2	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	0.7	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	0.7	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	0.8	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	94	88	84	90	91

PAHs in Soil						
Our Reference		366197-11	366197-13	366197-16	366197-17	366197-19
Your Reference	UNITS	BH18_0.25-0.3	BH18_1.0-1.1	BH13_0.4-0.5	BH30_0.0-0.1	QC100
Date Sampled		12/11/2024	12/11/2024	12/11/2024	12/11/2024	12/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	22/11/2024	21/11/2024	22/11/2024	25/11/2024	21/11/2024
Naphthalene	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	<0.1	0.2	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	0.3	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	0.3	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	0.2	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	1.6	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	85	87	84	91	86

Organochlorine Pesticides in soil						
Our Reference		366197-2	366197-3	366197-11	366197-16	366197-17
Your Reference	UNITS	BH21_0.2-0.5	BH21_0.7-0.8	BH18_0.25-0.3	BH13_0.4-0.5	BH30_0.0-0.1
Date Sampled		12/11/2024	12/11/2024	12/11/2024	12/11/2024	12/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total Positive Aldrin+Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 4-Chloro-3-NBTF	%	70	69	65	84	75

PCBs in Soil						
Our Reference		366197-2	366197-3	366197-11	366197-16	366197-17
Your Reference	UNITS	BH21_0.2-0.5	BH21_0.7-0.8	BH18_0.25-0.3	BH13_0.4-0.5	BH30_0.0-0.1
Date Sampled		12/11/2024	12/11/2024	12/11/2024	12/11/2024	12/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	22/11/2024	22/11/2024	22/11/2024	22/11/2024	22/11/2024
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate 2-Fluorobiphenyl	%	81	78	80	86	87

Acid Extractable metals in soil						
Our Reference		366197-1	366197-2	366197-3	366197-4	366197-9
Your Reference	UNITS	BH16_7.9-8.0	BH21_0.2-0.5	BH21_0.7-0.8	BH21_1.1-1.2	BH21_7.9-8.0
Date Sampled		12/11/2024	12/11/2024	12/11/2024	12/11/2024	12/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024	21/11/2024	21/11/2024
Arsenic	mg/kg	<4	5	18	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	4	14	14	18	11
Copper	mg/kg	4	7	15	4	12
Lead	mg/kg	2	12	40	6	6
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	<1	3	3	2	1
Zinc	mg/kg	4	10	78	8	10

Acid Extractable metals in soil						
Our Reference		366197-11	366197-13	366197-16	366197-17	366197-19
Your Reference	UNITS	BH18_0.25-0.3	BH18_1.0-1.1	BH13_0.4-0.5	BH30_0.0-0.1	QC100
Date Sampled		12/11/2024	12/11/2024	12/11/2024	12/11/2024	12/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024	21/11/2024	21/11/2024
Arsenic	mg/kg	<4	<4	4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	0.9	<0.4
Chromium	mg/kg	18	2	24	8	31
Copper	mg/kg	3	<1	17	13	22
Lead	mg/kg	8	6	19	24	29
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	0.1
Nickel	mg/kg	6	<1	3	2	3
Zinc	mg/kg	8	<1	35	170	39

Moisture						
Our Reference		366197-1	366197-2	366197-3	366197-4	366197-9
Your Reference	UNITS	BH16_7.9-8.0	BH21_0.2-0.5	BH21_0.7-0.8	BH21_1.1-1.2	BH21_7.9-8.0
Date Sampled		12/11/2024	12/11/2024	12/11/2024	12/11/2024	12/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024	21/11/2024	21/11/2024
Moisture	%	7.6	9.1	11	6.5	5.2

Moisture						
Our Reference		366197-11	366197-13	366197-16	366197-17	366197-19
Your Reference	UNITS	BH18_0.25-0.3	BH18_1.0-1.1	BH13_0.4-0.5	BH30_0.0-0.1	QC100
Date Sampled		12/11/2024	12/11/2024	12/11/2024	12/11/2024	12/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024	21/11/2024	21/11/2024	21/11/2024
Moisture	%	14	11	8.6	9.4	8.0

Moisture		
Our Reference		366197-23
Your Reference	UNITS	QC500
Date Sampled		12/11/2024
Type of sample		Soil
Date prepared	-	20/11/2024
Date analysed	-	21/11/2024
Moisture	%	<0.1

PFAS in Soils Short						
Our Reference		366197-2	366197-11	366197-17	366197-19	366197-23
Your Reference	UNITS	BH21_0.2-0.5	BH18_0.25-0.3	BH30_0.0-0.1	QC100	QC500
Date Sampled		12/11/2024	12/11/2024	12/11/2024	12/11/2024	12/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Perfluorobutanesulfonic acid	µg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluorohexanesulfonic acid - PFHxS	µg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluorooctanesulfonic acid PFOS	µg/kg	0.1	<0.1	0.7	<0.1	<0.1
Perfluorooctanoic acid PFOA	µg/kg	<0.1	<0.1	0.2	<0.1	<0.1
6:2 FTS	µg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
8:2 FTS	µg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Surrogate $^{13}C_8$ *PFOS*	%	100	102	99	100	100
Surrogate $^{13}C_2$ *PFOA*	%	97	98	106	102	103
Extracted ISTD $^{13}C_3$ *PFBS*	%	103	98	101	99	105
Extracted ISTD $^{18}O_2$ *PFHxS*	%	102	99	104	100	105
Extracted ISTD $^{13}C_4$ *PFOS*	%	100	99	99	97	102
Extracted ISTD $^{13}C_4$ *PFOA*	%	101	98	98	98	102
Extracted ISTD $^{13}C_2$ *6:2FTS*	%	103	103	141	101	111
Extracted ISTD $^{13}C_2$ *8:2FTS*	%	114	108	128	111	115
Total Positive PFHxS & PFOS	µg/kg	0.1	<0.1	0.7	<0.1	<0.1
Total Positive PFOS & PFOA	µg/kg	0.1	<0.1	0.8	<0.1	<0.1
Total Positive PFAS	µg/kg	0.1	<0.1	0.8	<0.1	<0.1

PFAS in TCLP Short			
Our Reference		366197-2	366197-11
Your Reference	UNITS	BH21_0.2-0.5	BH18_0.25-0.3
Date Sampled		12/11/2024	12/11/2024
Type of sample		Soil	Soil
Date prepared	-	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	21/11/2024
pH of soil for fluid# determ.	pH units	8.7	8.6
pH of soil TCLP (after HCl)	pH units	1.6	1.6
Extraction fluid used		1	1
pH of final Leachate	pH units	4.9	4.9
Perfluorobutanesulfonic acid	µg/L	<0.01	<0.01
Perfluorohexanesulfonic acid - PFHxS	µg/L	<0.01	<0.01
Perfluorooctanesulfonic acid PFOS	µg/L	<0.01	<0.01
Perfluorooctanoic acid PFOA	µg/L	<0.01	<0.01
6:2 FTS	µg/L	<0.01	<0.01
8:2 FTS	µg/L	<0.02	<0.02
Surrogate $^{13}C_8$ *PFOS*	%	99	104
Surrogate $^{13}C_2$ *PFOA*	%	106	100
Extracted ISTD $^{13}C_3$ *PFBS*	%	99	101
Extracted ISTD $^{18}O_2$ *PFHxS*	%	94	97
Extracted ISTD $^{13}C_4$ *PFOS*	%	97	96
Extracted ISTD $^{13}C_4$ *PFOA*	%	96	96
Extracted ISTD $^{13}C_2$ *6:2FTS*	%	66	64
Extracted ISTD $^{13}C_2$ *8:2FTS*	%	77	74
Total Positive PFHxS & PFOS	µg/L	<0.01	<0.01
Total Positive PFOS & PFOA	µg/L	<0.01	<0.01
Total Positive PFAS	µg/L	<0.01	<0.01

Asbestos ID - soils NEPM - ASB-001						
Our Reference		366197-2	366197-3	366197-11	366197-15	366197-16
Your Reference	UNITS	BH21_0.2-0.5	BH21_0.7-0.8	BH18_0.25-0.3	BH13_0-0.1	BH13_0.4-0.5
Date Sampled		12/11/2024	12/11/2024	12/11/2024	12/11/2024	12/11/2024
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	25/11/2024	25/11/2024	25/11/2024	25/11/2024	25/11/2024
Sample mass tested	g	641.08	737.12	629.34	241.35	561.6
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown mulch	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Total Asbestos[#1]	g/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected	No visible asbestos detected
ACM >7mm Estimation*	g	–	–	–	–	–
FA and AF Estimation*	g	–	–	–	–	–
ACM >7mm Estimation*	%(w/w)	<0.01	<0.01	<0.01	<0.01	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001	<0.001	<0.001	<0.001	<0.001
Asbestos comments	-	Nil	Nil	Nil	Nil	Nil

Asbestos ID - soils NEPM - ASB-001		
Our Reference		366197-17
Your Reference	UNITS	BH30_0.0-0.1
Date Sampled		12/11/2024
Type of sample		Soil
Date analysed	-	25/11/2024
Sample mass tested	g	674.37
Sample Description	-	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected
Total Asbestos[#1]	g/kg	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected
ACM >7mm Estimation*	g	–
FA and AF Estimation*	g	–
ACM >7mm Estimation*	%(w/w)	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001
Asbestos comments	-	Nil

Asbestos ID - materials		
Our Reference		366197-24
Your Reference	UNITS	PACM-03
Date Sampled		12/11/2024
Type of sample		Material
Date analysed	-	25/11/2024
Mass / Dimension of Sample	-	59x49x8mm
Sample Description	-	White ceramic tile
Asbestos ID in materials	-	No asbestos detected
Trace Analysis	-	No asbestos detected

vTRH(C6-C10)/BTEXN in Water		
Our Reference		366197-21
Your Reference	UNITS	QC301
Date Sampled		12/11/2024
Type of sample		Water
Date extracted	-	21/11/2024
Date analysed	-	22/11/2024
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	%	101
Surrogate Toluene-d8	%	98
Surrogate 4-Bromofluorobenzene	%	95

svTRH (C10-C40) in Water		
Our Reference	UNITS	366197-21
Your Reference		QC301
Date Sampled		12/11/2024
Type of sample		Water
Date extracted	-	20/11/2024
Date analysed	-	21/11/2024
TRH C_{10} - C_{14}	µg/L	<50
TRH C_{15} - C_{28}	µg/L	<100
TRH C_{29} - C_{36}	µg/L	<100
Total +ve TRH (C10-C36)	µg/L	<50
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
Total +ve TRH (>C10-C40)	µg/L	<50
Surrogate o-Terphenyl	%	84

PFAS in Waters Short		
Our Reference		366197-21
Your Reference	UNITS	QC301
Date Sampled		12/11/2024
Type of sample		Water
Date prepared	-	22/11/2024
Date analysed	-	22/11/2024
Perfluorobutanesulfonic acid	µg/L	<0.01
Perfluorohexanesulfonic acid - PFHxS	µg/L	<0.01
Perfluorooctanesulfonic acid PFOS	µg/L	<0.01
Perfluorooctanoic acid PFOA	µg/L	<0.01
6:2 FTS	µg/L	<0.01
8:2 FTS	µg/L	<0.02
Surrogate $^{13}C_8$ *PFOS*	%	94
Surrogate $^{13}C_2$ *PFOA*	%	100
Extracted ISTD $^{13}C_3$ *PFBS*	%	101
Extracted ISTD $^{18}O_2$ *PFHxS*	%	94
Extracted ISTD $^{13}C_4$ *PFOS*	%	96
Extracted ISTD $^{13}C_4$ *PFOA*	%	92
Extracted ISTD $^{13}C_2$ *6:2FTS*	%	75
Extracted ISTD $^{13}C_2$ *8:2FTS*	%	88
Total Positive PFHxS & PFOS	µg/L	<0.01
Total Positive PFOA & PFOS	µg/L	<0.01
Total Positive PFAS	µg/L	<0.01

Metals in Waters - Acid extractable		
Our Reference		366197-21
Your Reference	UNITS	QC301
Date Sampled		12/11/2024
Type of sample		Water
Date prepared	-	20/11/2024
Date analysed	-	20/11/2024
Arsenic - Total	mg/L	<0.05
Cadmium - Total	mg/L	<0.01
Chromium - Total	mg/L	<0.01
Copper - Total	mg/L	<0.01
Lead - Total	mg/L	<0.03
Mercury - Total	mg/L	<0.0005
Nickel - Total	mg/L	<0.02
Zinc - Total	mg/L	<0.02

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
ASB-001	Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit of 0.1g/kg (0.01% w/w) as per Australian Standard AS4964-2004. Results reported denoted with * are outside our scope of NATA accreditation. NOTE#1 Total Asbestos g/kg was analysed and reported as per Australian Standard AS4964 (This is the sum of ACM >7mm, <7mm and FA/AF relative to the sample mass tested) NOTE#2 The screening level of 0.001% w/w asbestos in soil for FA and AF only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres. Estimation = Estimated asbestos weight Results reported with "--" is equivalent to no visible asbestos identified using Polarised Light microscopy and Dispersion Staining Techniques.
Inorg-004	Toxicity Characteristic Leaching Procedure (TCLP) using AS 4439. Please note that the mass used may be scaled down from default based on sample mass available. Samples are stored at 2-6oC before and after leachate preparation.
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.

Method ID	Methodology Summary
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-021/022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD and/or GC-MS/GC-MSMS. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.
Org-022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS/GC-MSMS. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
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	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.
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.
Org-029	Soil samples are extracted with basified Methanol. Waters and soil extracts are directly injected and/or concentrated/extracted using SPE. TCLPs/ASLP leachates are centrifuged, the supernatant is then analysed (including amendment with solvent) - as per the option in AS4439.3. Analysis is undertaken with LC-MS/MS. PFAS results include the sum of branched and linear isomers where applicable. Please note that PFAS results are corrected for Extracted Internal Standards (QSM 5.4 Table B-15 terminology), which are mass labelled analytes added prior to sample preparation to assess matrix effects and verify processing of the sample. PFAS analytes without a commercially available mass labelled analogue are corrected vs a closely eluting mass labelled PFAS compound. Surrogates are also reported, in this context they are mass labelled PFAS compounds added prior to extraction but are used as monitoring compounds only (not used for result correction). Envicarb (or similar) is used discretionally to remove interfering matrix components. Please contact the laboratory if estimates of Measurement Uncertainty are required as per WA DER.

QUALITY CONTROL: VOCs in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	366197-2
Date Extracted	-			20/11/2024	1	20/11/2024	20/11/2024		20/11/2024	20/11/2024
Date Analysed	-			21/11/2024	1	21/11/2024	21/11/2024		21/11/2024	21/11/2024
Dichlorodifluoromethane	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Chloromethane	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Vinyl Chloride	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Bromomethane	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Chloroethane	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Trichlorofluoromethane	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,1-Dichloroethene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
trans-1,2-Dichloroethene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,1-Dichloroethane	mg/kg	1	Org-023	<1	1	<1	<1	0	122	126
cis-1,2-Dichloroethene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Bromochloromethane	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Chloroform	mg/kg	1	Org-023	<1	1	<1	<1	0	127	119
2,2-Dichloropropane	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,2-Dichloroethane	mg/kg	1	Org-023	<1	1	<1	<1	0	93	90
1,1,1-Trichloroethane	mg/kg	1	Org-023	<1	1	<1	<1	0	111	107
1,1-Dichloropropene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Cyclohexane	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Carbon Tetrachloride	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-023	<0.2	1	<0.2	<0.2	0	110	106
Dibromomethane	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,2-Dichloropropane	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Trichloroethene	mg/kg	1	Org-023	<1	1	<1	<1	0	102	98
Bromodichloromethane	mg/kg	1	Org-023	<1	1	<1	<1	0	104	98
trans-1,3-Dichloropropene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
cis-1,3-Dichloropropene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,1,2-Trichloroethane	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-023	<0.5	1	<0.5	<0.5	0	118	112
1,3-Dichloropropane	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Dibromochloromethane	mg/kg	1	Org-023	<1	1	<1	<1	0	90	84
1,2-Dibromoethane	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Tetrachloroethene	mg/kg	1	Org-023	<1	1	<1	<1	0	102	98
1,1,1,2-Tetrachloroethane	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Chlorobenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	125	122
Bromoform	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
m+p-Xylene	mg/kg	2	Org-023	<2	1	<2	<2	0	118	114
Styrene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,1,2,2-Tetrachloroethane	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]

QUALITY CONTROL: VOCs in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	366197-2
o-Xylene	mg/kg	1	Org-023	<1	1	<1	<1	0	111	108
1,2,3-Trichloropropane	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Isopropylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Bromobenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
n-Propylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
2-Chlorotoluene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
4-Chlorotoluene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,3,5-Trimethylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
tert-Butylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,2,4-Trimethylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,3-Dichlorobenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
sec-Butylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,4-Dichlorobenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
4-Isopropyltoluene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,2-Dichlorobenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
n-Butylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,2-Dibromo-3-chloropropane	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,2,4-Trichlorobenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Hexachlorobutadiene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
1,2,3-Trichlorobenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	97	1	99	99	0	98	100
Surrogate aaa-Trifluorotoluene	%		Org-023	105	1	103	106	3	118	113
Surrogate Toluene-d_8	%		Org-023	100	1	98	97	1	106	105
Surrogate 4-Bromofluorobenzene	%		Org-023	102	1	102	102	0	99	100

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	366197-2
Date extracted	-			20/11/2024	1	20/11/2024	20/11/2024		20/11/2024	20/11/2024
Date analysed	-			21/11/2024	1	21/11/2024	21/11/2024		21/11/2024	21/11/2024
TRH C_6 - C_9	mg/kg	25	Org-023	<25	1	<25	<25	0	118	114
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	1	<25	<25	0	118	114
Benzene	mg/kg	0.2	Org-023	<0.2	1	<0.2	<0.2	0	110	106
Toluene	mg/kg	0.5	Org-023	<0.5	1	<0.5	<0.5	0	118	112
Ethylbenzene	mg/kg	1	Org-023	<1	1	<1	<1	0	125	122
m+p-xylene	mg/kg	2	Org-023	<2	1	<2	<2	0	118	114
o-Xylene	mg/kg	1	Org-023	<1	1	<1	<1	0	111	108
Naphthalene	mg/kg	1	Org-023	<1	1	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	105	1	103	106	3	118	113

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	17	20/11/2024	20/11/2024		[NT]	[NT]
Date analysed	-			[NT]	17	21/11/2024	21/11/2024		[NT]	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	17	<25	<25	0	[NT]	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	17	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-023	[NT]	17	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-023	[NT]	17	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-023	[NT]	17	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-023	[NT]	17	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-023	[NT]	17	<1	<1	0	[NT]	[NT]
Naphthalene	mg/kg	1	Org-023	[NT]	17	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	17	98	109	11	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	366197-2
Date extracted	-			20/11/2024	1	20/11/2024	20/11/2024		20/11/2024	20/11/2024
Date analysed	-			21/11/2024	1	21/11/2024	21/11/2024		21/11/2024	21/11/2024
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	1	<50	<50	0	109	100
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	1	<100	<100	0	107	98
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	1	<100	<100	0	100	89
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	1	<50	<50	0	109	100
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	1	<100	<100	0	107	98
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	1	<100	<100	0	100	89
Surrogate o-Terphenyl	%		Org-020	91	1	90	88	2	132	131

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	17	20/11/2024	20/11/2024		[NT]	[NT]
Date analysed	-			[NT]	17	21/11/2024	21/11/2024		[NT]	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	17	<50	<50	0	[NT]	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	17	<100	430	125	[NT]	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	17	380	510	29	[NT]	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	17	<50	<50	0	[NT]	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	17	280	730	89	[NT]	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	17	230	280	20	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-020	[NT]	17	91	102	11	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	366197-2
Date extracted	-			20/11/2024	1	20/11/2024	20/11/2024		20/11/2024	20/11/2024
Date analysed	-			22/11/2024	1	21/11/2024	21/11/2024		22/11/2024	22/11/2024
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	74	72
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	76	74
Fluorene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	72	68
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	76	78
Anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	68	66
Pyrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	70	68
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	80	88
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	1	<0.05	<0.05	0	73	64
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	73	1	94	88	7	86	85

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	17	20/11/2024	20/11/2024		[NT]	[NT]
Date analysed	-			[NT]	17	25/11/2024	25/11/2024		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	17	0.2	0.2	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	17	0.3	0.3	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	17	0.3	0.3	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	17	0.1	0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	17	0.1	0.1	0	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	17	0.2	0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	17	0.2	0.1	67	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	17	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	17	0.1	0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	17	91	97	6	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	366197-2
Date extracted	-			20/11/2024	17	20/11/2024	20/11/2024		20/11/2024	20/11/2024
Date analysed	-			22/11/2024	17	22/11/2024	22/11/2024		22/11/2024	22/11/2024
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	17	<0.1	<0.1	0	86	78
HCB	mg/kg	0.1	Org-022/025	<0.1	17	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	<0.1	17	<0.1	<0.1	0	80	74
gamma-BHC	mg/kg	0.1	Org-022/025	<0.1	17	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	<0.1	17	<0.1	<0.1	0	70	70
delta-BHC	mg/kg	0.1	Org-022/025	<0.1	17	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	<0.1	17	<0.1	<0.1	0	72	72
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	17	<0.1	<0.1	0	86	80
gamma-Chlordane	mg/kg	0.1	Org-022/025	<0.1	17	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	<0.1	17	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	<0.1	17	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	<0.1	17	<0.1	<0.1	0	70	66
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	17	<0.1	<0.1	0	80	72
Endrin	mg/kg	0.1	Org-022/025	<0.1	17	<0.1	<0.1	0	74	70
Endosulfan II	mg/kg	0.1	Org-022/025	<0.1	17	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	<0.1	17	<0.1	<0.1	0	78	80
Endrin Aldehyde	mg/kg	0.1	Org-022/025	<0.1	17	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	<0.1	17	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	<0.1	17	<0.1	<0.1	0	70	62
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	17	<0.1	<0.1	0	[NT]	[NT]
Mirex	mg/kg	0.1	Org-022/025	<0.1	17	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	67	17	75	78	4	85	72

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	366197-2
Date extracted	-			20/11/2024	17	20/11/2024	20/11/2024		20/11/2024	20/11/2024
Date analysed	-			22/11/2024	17	22/11/2024	22/11/2024		22/11/2024	22/11/2024
Aroclor 1016	mg/kg	0.1	Org-021/022/025	<0.1	17	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021/022/025	<0.1	17	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021/022/025	<0.1	17	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021/022/025	<0.1	17	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021/022/025	<0.1	17	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021/022/025	<0.1	17	<0.1	<0.1	0	75	76
Aroclor 1260	mg/kg	0.1	Org-021/022/025	<0.1	17	<0.1	<0.1	0	[NT]	[NT]
Surrogate 2-Fluorobiphenyl	%		Org-021/022/025	81	17	87	88	1	86	86

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	366197-2
Date prepared	-			20/11/2024	1	20/11/2024	20/11/2024		20/11/2024	20/11/2024
Date analysed	-			21/11/2024	1	21/11/2024	21/11/2024		21/11/2024	21/11/2024
Arsenic	mg/kg	4	Metals-020	<4	1	<4	<4	0	102	97
Cadmium	mg/kg	0.4	Metals-020	<0.4	1	<0.4	<0.4	0	92	82
Chromium	mg/kg	1	Metals-020	<1	1	4	4	0	96	94
Copper	mg/kg	1	Metals-020	<1	1	4	3	29	98	97
Lead	mg/kg	1	Metals-020	<1	1	2	2	0	96	86
Mercury	mg/kg	0.1	Metals-021	<0.1	1	<0.1	<0.1	0	108	112
Nickel	mg/kg	1	Metals-020	<1	1	<1	<1	0	99	90
Zinc	mg/kg	1	Metals-020	<1	1	4	3	29	96	84

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	17	20/11/2024	20/11/2024		[NT]	[NT]
Date analysed	-			[NT]	17	21/11/2024	21/11/2024		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	17	<4	<4	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	17	0.9	0.9	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	17	8	10	22	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	17	13	11	17	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	17	24	23	4	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	17	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	17	2	2	0	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	17	170	160	6	[NT]	[NT]

QUALITY CONTROL: PFAS in Soils Short					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	[NT]
Date prepared	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Date analysed	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Perfluorobutanesulfonic acid	µg/kg	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	88	[NT]
Perfluorohexanesulfonic acid - PFHxS	µg/kg	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	96	[NT]
Perfluorooctanesulfonic acid PFOS	µg/kg	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	93	[NT]
Perfluorooctanoic acid PFOA	µg/kg	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	90	[NT]
6:2 FTS	µg/kg	0.1	Org-029	<0.1	[NT]	[NT]	[NT]	[NT]	91	[NT]
8:2 FTS	µg/kg	0.2	Org-029	<0.2	[NT]	[NT]	[NT]	[NT]	89	[NT]
Surrogate $^{13}C_8$ *PFOS*	%		Org-029	98	[NT]	[NT]	[NT]	[NT]	96	[NT]
Surrogate $^{13}C_2$ *PFOA*	%		Org-029	106	[NT]	[NT]	[NT]	[NT]	100	[NT]
Extracted ISTD $^{13}C_3$ *PFBS*	%		Org-029	108	[NT]	[NT]	[NT]	[NT]	109	[NT]
Extracted ISTD $^{18}O_2$ *PFHxS*	%		Org-029	105	[NT]	[NT]	[NT]	[NT]	105	[NT]
Extracted ISTD $^{13}C_4$ *PFOS*	%		Org-029	108	[NT]	[NT]	[NT]	[NT]	107	[NT]
Extracted ISTD $^{13}C_4$ *PFOA*	%		Org-029	101	[NT]	[NT]	[NT]	[NT]	106	[NT]
Extracted ISTD $^{13}C_2$ *6:2FTS*	%		Org-029	109	[NT]	[NT]	[NT]	[NT]	113	[NT]
Extracted ISTD $^{13}C_2$ *8:2FTS*	%		Org-029	120	[NT]	[NT]	[NT]	[NT]	128	[NT]

QUALITY CONTROL: PFAS in TCLP Short					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	366197-11
Date prepared	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	20/11/2024
Date analysed	-			21/11/2024	[NT]	[NT]	[NT]	[NT]	21/11/2024	21/11/2024
Perfluorobutanesulfonic acid	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	97	97
Perfluorohexanesulfonic acid - PFHxS	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	104	100
Perfluorooctanesulfonic acid PFOS	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	101	100
Perfluorooctanoic acid PFOA	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	95	94
6:2 FTS	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	94	94
8:2 FTS	µg/L	0.02	Org-029	<0.02	[NT]	[NT]	[NT]	[NT]	95	90
Surrogate $^{13}C_8$ *PFOS*	%		Org-029	97	[NT]	[NT]	[NT]	[NT]	99	104
Surrogate $^{13}C_2$ *PFOA*	%		Org-029	105	[NT]	[NT]	[NT]	[NT]	101	97
Extracted ISTD $^{13}C_3$ *PFBS*	%		Org-029	95	[NT]	[NT]	[NT]	[NT]	99	98
Extracted ISTD $^{18}O_2$ *PFHxS*	%		Org-029	103	[NT]	[NT]	[NT]	[NT]	98	99
Extracted ISTD $^{13}C_4$ *PFOS*	%		Org-029	103	[NT]	[NT]	[NT]	[NT]	98	97
Extracted ISTD $^{13}C_4$ *PFOA*	%		Org-029	95	[NT]	[NT]	[NT]	[NT]	96	96
Extracted ISTD $^{13}C_2$ *6:2FTS*	%		Org-029	65	[NT]	[NT]	[NT]	[NT]	65	66
Extracted ISTD $^{13}C_2$ *8:2FTS*	%		Org-029	72	[NT]	[NT]	[NT]	[NT]	70	74

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			21/11/2024	[NT]	[NT]	[NT]	[NT]	21/11/2024	[NT]
Date analysed	-			22/11/2024	[NT]	[NT]	[NT]	[NT]	22/11/2024	[NT]
TRH C_6 - C_9	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	98	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	98	[NT]
Benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Toluene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	98	[NT]
m+p-xylene	µg/L	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	97	[NT]
o-xylene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	97	[NT]
Naphthalene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	101	[NT]	[NT]	[NT]	[NT]	100	[NT]
Surrogate Toluene-d8	%		Org-023	99	[NT]	[NT]	[NT]	[NT]	101	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-023	98	[NT]	[NT]	[NT]	[NT]	99	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Date analysed	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
TRH C_{10} - C_{14}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	109	[NT]
TRH C_{15} - C_{28}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	115	[NT]
TRH C_{29} - C_{36}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	100	[NT]
TRH >C_{10} - C_{16}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	109	[NT]
TRH >C_{16} - C_{34}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	115	[NT]
TRH >C_{34} - C_{40}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	100	[NT]
Surrogate o-Terphenyl	%		Org-020	64	[NT]	[NT]	[NT]	[NT]	120	[NT]

QUALITY CONTROL: PFAS in Waters Short					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			22/11/2024	21	22/11/2024	22/11/2024		22/11/2024	[NT]
Date analysed	-			22/11/2024	21	22/11/2024	22/11/2024		22/11/2024	[NT]
Perfluorobutanesulfonic acid	µg/L	0.01	Org-029	<0.01	21	<0.01	<0.01	0	102	[NT]
Perfluorohexanesulfonic acid - PFHxS	µg/L	0.01	Org-029	<0.01	21	<0.01	<0.01	0	102	[NT]
Perfluorooctanesulfonic acid PFOS	µg/L	0.01	Org-029	<0.01	21	<0.01	<0.01	0	97	[NT]
Perfluorooctanoic acid PFOA	µg/L	0.01	Org-029	<0.01	21	<0.01	<0.01	0	102	[NT]
6:2 FTS	µg/L	0.01	Org-029	<0.01	21	<0.01	<0.01	0	112	[NT]
8:2 FTS	µg/L	0.02	Org-029	<0.02	21	<0.02	<0.02	0	109	[NT]
Surrogate $^{13}C_8$ *PFOS*	%		Org-029	93	21	94	97	3	94	[NT]
Surrogate $^{13}C_2$ *PFOA*	%		Org-029	100	21	100	103	3	98	[NT]
Extracted ISTD $^{13}C_3$ *PFBS*	%		Org-029	100	21	101	101	0	98	[NT]
Extracted ISTD $^{18}O_2$ *PFHxS*	%		Org-029	97	21	94	98	4	94	[NT]
Extracted ISTD $^{13}C_4$ *PFOS*	%		Org-029	98	21	96	97	1	100	[NT]
Extracted ISTD $^{13}C_4$ *PFOA*	%		Org-029	93	21	92	91	1	95	[NT]
Extracted ISTD $^{13}C_2$ *6:2FTS*	%		Org-029	80	21	75	80	6	88	[NT]
Extracted ISTD $^{13}C_2$ *8:2FTS*	%		Org-029	83	21	88	78	12	92	[NT]

QUALITY CONTROL: Metals in Waters - Acid extractable						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Date analysed	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Arsenic - Total	mg/L	0.05	Metals-020	<0.05	[NT]	[NT]	[NT]	[NT]	111	[NT]
Cadmium - Total	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	103	[NT]
Chromium - Total	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	103	[NT]
Copper - Total	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	110	[NT]
Lead - Total	mg/L	0.03	Metals-020	<0.03	[NT]	[NT]	[NT]	[NT]	105	[NT]
Mercury - Total	mg/L	0.0005	Metals-021	<0.0005	[NT]	[NT]	[NT]	[NT]	112	[NT]
Nickel - Total	mg/L	0.02	Metals-020	<0.02	[NT]	[NT]	[NT]	[NT]	104	[NT]
Zinc - Total	mg/L	0.02	Metals-020	<0.02	[NT]	[NT]	[NT]	[NT]	105	[NT]

Result Definitions

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

Quality Control Definitions

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

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

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

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

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

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

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

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

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

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

Report Comments

TRH Soil C10-C40 NEPM - The RPD for duplicate results is accepted due to the non homogenous nature of samples 366197-17,17d.

Asbestos-ID in soil: NEPM
This report is consistent with the reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013. This is reported outside our scope of NATA accreditation.

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Chain of Custody Documentation

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ABN 89 132 231 380

Laboratory:
Address:
Contact: Sample Receipt
Phone:

ENVIROLAB GROUP
Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No 366197

Date Received: 13/11/24
Time Received: 8:00
Received By:
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Job Number:	S22013
Project Name:	Mars Road 051
Sampled By:	LD MY
Project Manager:	Zoe Smith
Email Report To:	zoe.smith@senversa.com.au
Purchase Order:	
Quote No:	245Y516v2
Turn Around Time:	Standard
Page:	1 of 2
Phone/Mobile:	0431 659 835

Sample Information					Container Information		Analysis Required											
Lab ID	Sample ID	Matrix *	Date	Time	Type / Code	Total Bottles										HOLD	Comments: e.g. Highly contaminated sample; hazardous materials present; trace LORs etc.
1	BH16 - 7.9-8.0	Soil	12/11/24	AM	JAR, ORAJ	x2										X	
2	BH21 - 0.2-0.3					x3										X	
3	BH21 - 0.7-0.9					x3										X	
4	BH21 - 1.1-1.2					x3										X	
5	BH21 - 1.9-2.0					x2										X	
6	BH21 - 2.9-3.0					x2										X	
7	BH21 - 3.9-4.0					x2										X	
8	BH21 - 5.9-6.0					x2										X	
9	BH21 - 7.9-8.0					x2										X	
10	BH18 - 0.2-0.25					x3										X	
11	BH18 - 0.25-0.7					x3										X	
12	BH18 - 0.5-0.6					x2										X	
13	BH18 - 1.0-1.1					x2										X	
14	BH18 - 1.9-2.0					x2										X	
15	BH13 - 0-0.1					x3										X	
16	BH13 - 0.4-0.5					x3										X	
Total																X	

Sampler: I attest that proper field sampling procedures in accordance with Senversa standard procedures and/or project specifications were used during the collection of these samples: | **Sampler Name:** Lucas Dzalakowski | **Signature:** | **Date:** 12 / 11 / 24

Relinquished By:		**Method of Shipment (if applicable):**	**Received by:**	
Name/Signature: Lucas Dzalakowski	Date: 12/11/24	Carrier / Reference #:	Name/Signature:	Date:
Of:	Time:	Date/Time:	Of:	Time:
Name/Signature:	Date:	Carrier / Reference #:	Name/Signature:	Date:
Of:	Time:	Date/Time:	Of:	Time:
Name/Signature:	Date:	Carrier / Reference #:	Name/Signature:	Date:
Of:	Time:	Date/Time:	Of:	Time:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Acid (HNO_3) Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide (NaOH)/Cadmium (Cd) Preserved; S = Sodium Hydroxide Preserved Plastic; STH = Sodium thiosulfate preserved plastic; V = VOA Vial Hydochloric Acid (HCl) Preserved; VS = VOA Vial Sulphuric Preserved; VSA = Sulphuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation Bottle; SP = Sulphuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; UA = Unpreserved Amber Glass; L=Lugol's Iodine preserved white plastic bottle; SW= sulfuric acid preserved wide mouth glass jar

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Chain of Custody Documentation

366197

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ABN 89 132 231 380

Laboratory:
Address:
Contact: Sample Receipt
Phone:

Job Number:	S22013	Purchase Order:	
Project Name:	Mons Road DSI	Quote No:	24SY51602
Sampled By:	LW HY	Turn Around Time:	Standard
Project Manager:	Zoe Smith	Page:	2 of 2
Email Report To:	zoe.smith@senversa.com.au	Phone/Mobile:	0431 859 835

Sample Information					Container Information		Analysis Required											Comments: e.g. Highly contaminated sample; hazardous materials present; trace LORs etc.
Lab ID	Sample ID	Matrix *	Date	Time	Type / Code	Total Bottles											HOLD	
17	BH30-0.0-0.1	Soil			Jar, Vial, Bag, Tub	x3											Y	
18	BH30-0.4-0.5	Soil			↓	x3											X	
19	QC100	Soil			Jar	x1											X	
20	QC101	Soil			Jar	x1											X	
21	QC301	Water			Bottles	x7											X	
22	QC401					x1												TS
23	QC500					x1												TB
24	MATRIX-03				Bag	x1												
-	QC501					x1												FB PFAS
25.	QC200	extra																
Total																		

Sampler: I attest that proper field sampling procedures in accordance with Senversa standard procedures and/or project specifications were used during the collection of these samples:	Sampler Name: Lucas Dzialakiewicz	Signature:	Date: 12/11/24

Relinquished By:			Method of Shipment (if applicable):	Received by:	
Name/Signature: Lucas Dzialakiewicz		Date: 12/11/24	Carrier / Reference #:	Name/Signature:	Date:
Of:		Time:	Date/Time:	Of:	Time:
Name/Signature:		Date:	Carrier / Reference #:	Name/Signature:	Date:
Of:		Time:	Date/Time:	Of:	Time:
Name/Signature:		Date:	Carrier / Reference #:	Name/Signature:	Date:
Of:		Time:	Date/Time:	Of:	Time:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Acid (HNO_3) Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide (NaOH)/Cadmium (Cd) Preserved; S = Sodium Hydroxide Preserved Plastic; STH = Sodium thiosulfate preserved plastic; V = VOA Vial Hydochloric Acid (HCl) Preserved; VS = VOA Vial Sulphuric Preserved; VSA = Sulphuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation Bottle; SP = Sulphuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; UA = Unpreserved Amber Glass; L=Lugol's Iodine preserved white plastic bottle; SW= sulfuric acid preserved wide mouth glass jar

Envirolab Services Pty Ltd
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12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

DATA QUALITY ASSESSMENT SUMMARY

Report Details

Envirolab Report Reference	**366197**
Client ID	Senversa Pty Ltd
Project Reference	S22013, Mars Road DSI
Date Issued	25/11/2024

QC DATA

All laboratory QC data was within the Envirolab Group's specifications except:

QC Specification Exceptions

QC Type	Reference	Analysis	Comments
Precision (as %RPD)	366197-17	TRH >C_{16} -C_{34}	89% RPD fails internal acceptance criteria

See Report 366197-[R00] for QA/QC details

HOLDING TIME COMPLIANCE EVALUATION

All preservation / holding times (based on AS/ASPHA/ISO/NEPM/USEPA reference documents and standards) are compliant except:

Holding Time Exceedances

Analysis	Sample No	Date Sampled	Date Extracted	Date Analysed	Accepted
svTRH (C10-C40) in Water					
	366197-21	12/11/2024	20/11/2024	21/11/2024	✗

Certain analyses have had their recommended technical holding times elongated by filtering and/or freezing on receipt at the laboratory (e.g. BOD, chlorophyll/Pheophytin, nutrients and acid sulphate soil tests).

COMPLIANCE TO QC FREQUENCY (NEPM)

Internal laboratory QC rate complies with NEPM requirements (LCS/MB/MS 1 in 20, Duplicates 1 in 10 samples). Note, samples are batched together with other sample consignments in order to assign QC sample frequency.

QC Evaluation

Duplicate(s) was performed as per NEPM frequency	✓
Laboratory Control Sample(s) were analysed with the samples received	✓
A Method Blank was performed with the samples received	✓
Matrix spike(s) was performed as per NEPM frequency (Not Applicable for Air samples)	✓

Refer to Certificate of Analysis for all Quality Control data.

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SAMPLE RECEIPT ADVICE

Client Details

Client	Senversa Pty Ltd
Attention	Zoe Smith

Sample Login Details

Your reference	S22013 Mars Road DSI
Envirolab Reference	366197
Date Sample Received	13/11/2024
Date Instructions Received	13/11/2024
Date Results Expected to be Reported	On Hold

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	23 Soil, 1 Water, 1 Material
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	4
Cooling Method	Ice
Sampling Date Provided	YES

Comments

Not received QC501

Received extra QC200

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:

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Sample ID	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	Organophosphorus Pesticides in Soil	PCBs in Soil	Misc Soil - Inorg	Acid Extractable metalsin soil	Misc Inorg - Soil	Asbestos ID - soils	On Hold
BH16_7.9-8.0											✓
BH21_0.2-0.5											✓
BH21_0.7-0.8											✓
BH21_1.1-1.2											✓
BH21_1.9-2.0											✓
BH21_2.9-3.0											✓
BH21_3.9-4.0											✓
BH21_5.9-6.0											✓
BH21_7.9-8.0											✓
BH18_0.2-0.25											✓
BH18_0.25-0.3											✓
BH18_0.5-0.6											✓
BH18_1.0-1.1											✓
BH18_1.9-2.0											✓
BH13_0-0.1											✓
BH13_0.4-0.5											✓
BH30_0.0-0.1											✓
BH30_0.4-0.5											✓
QC100											✓
QC101											✓
QC301											✓
QC401											✓
QC500											✓
PACM-03											✓
QC200											✓

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.

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CERTIFICATE OF ANALYSIS 366346

Client Details

Client	Senversa Pty Ltd
Attention	Zoe Smith
Address	6/15 William St, Melbourne, VIC, 3000

Sample Details

Your Reference	**S22013, Mars Road DSI**
Number of Samples	13 Soil, 1 Water
Date samples received	14/11/2024
Date completed instructions received	18/11/2024

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.

Please refer to the last page of this report for any comments relating to the results.

Report Details

Date results requested by	25/11/2024
Date of Issue	28/11/2024
Reissue Details	This report replaces R00 created on 25/11/2024 due to: Sample ID Amended (Client Request)

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

Asbestos Approved By
Analysed by Asbestos Approved Analyst: Nyovan Moonean
Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By
Dragana Tomas, Senior Chemist
Giovanni Agosti, Group Technical Manager
Liam Timmins, Organics Supervisor
Lucy Zhu, Asbestos Supervisor
Sean McAlary, Senior Chemist
Tabitha Roberts, Senior Chemist
Timothy Toll, Senior Chemist

Authorised By
Nancy Zhang, Laboratory Manager

VOCs in soil		
Our Reference		366346-4
Your Reference	UNITS	BH02_0.2-0.3
Date Sampled		13/11/2024
Type of sample		Soil
Date Extracted	-	20/11/2024
Date Analysed	-	20/11/2024
Dichlorodifluoromethane	mg/kg	<1
Chloromethane	mg/kg	<1
Vinyl Chloride	mg/kg	<1
Bromomethane	mg/kg	<1
Chloroethane	mg/kg	<1
Trichlorofluoromethane	mg/kg	<1
1,1-Dichloroethene	mg/kg	<1
trans-1,2-Dichloroethene	mg/kg	<1
1,1-Dichloroethane	mg/kg	<1
cis-1,2-Dichloroethene	mg/kg	<1
Bromochloromethane	mg/kg	<1
Chloroform	mg/kg	<1
2,2-Dichloropropane	mg/kg	<1
1,2-Dichloroethane	mg/kg	<1
1,1,1-Trichloroethane	mg/kg	<1
1,1-Dichloropropene	mg/kg	<1
Cyclohexane	mg/kg	<1
Carbon Tetrachloride	mg/kg	<1
Benzene	mg/kg	<0.2
Dibromomethane	mg/kg	<1
1,2-Dichloropropane	mg/kg	<1
Trichloroethene	mg/kg	<1
Bromodichloromethane	mg/kg	<1
trans-1,3-Dichloropropene	mg/kg	<1
cis-1,3-Dichloropropene	mg/kg	<1
1,1,2-Trichloroethane	mg/kg	<1
Toluene	mg/kg	<0.5
1,3-Dichloropropane	mg/kg	<1
Dibromochloromethane	mg/kg	<1
1,2-Dibromoethane	mg/kg	<1
Tetrachloroethene	mg/kg	<1
1,1,1,2-Tetrachloroethane	mg/kg	<1
Chlorobenzene	mg/kg	<1
Ethylbenzene	mg/kg	<1

VOCs in soil		
Our Reference		366346-4
Your Reference	UNITS	BH02_0.2-0.3
Date Sampled		13/11/2024
Type of sample		Soil
Bromoform	mg/kg	<1
m+p-Xylene	mg/kg	<2
Styrene	mg/kg	<1
1,1,2,2-Tetrachloroethane	mg/kg	<1
o-Xylene	mg/kg	<1
1,2,3-Trichloropropane	mg/kg	<1
Isopropylbenzene	mg/kg	<1
Bromobenzene	mg/kg	<1
n-Propylbenzene	mg/kg	<1
2-Chlorotoluene	mg/kg	<1
4-Chlorotoluene	mg/kg	<1
1,3,5-Trimethylbenzene	mg/kg	<1
tert-Butylbenzene	mg/kg	<1
1,2,4-Trimethylbenzene	mg/kg	<1
1,3-Dichlorobenzene	mg/kg	<1
sec-Butylbenzene	mg/kg	<1
1,4-Dichlorobenzene	mg/kg	<1
4-Isopropyltoluene	mg/kg	<1
1,2-Dichlorobenzene	mg/kg	<1
n-Butylbenzene	mg/kg	<1
1,2-Dibromo-3-chloropropane	mg/kg	<1
1,2,4-Trichlorobenzene	mg/kg	<1
Hexachlorobutadiene	mg/kg	<1
1,2,3-Trichlorobenzene	mg/kg	<1
Surrogate Dibromofluoromethane	%	105
Surrogate aaa-Trifluorotoluene	%	82
Surrogate Toluene-d_8	%	102
Surrogate 4-Bromofluorobenzene	%	100

vTRH(C6-C10)/BTEXN in Soil					
Our Reference		366346-2	366346-4	366346-10	366346-12
Your Reference	UNITS	BH18_5.9-6.0	BH02_0.2-0.3	BH02_7.9-8.0	QC402
Date Sampled		13/11/2024	13/11/2024	13/11/2024	13/11/2024
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024
TRH C_6 - C_9	mg/kg	<25	<25	<25	[NA]
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	[NA]
vTRH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	[NA]
Benzene	mg/kg	<0.2	<0.2	<0.2	100%
Toluene	mg/kg	<0.5	<0.5	<0.5	99%
Ethylbenzene	mg/kg	<1	<1	<1	94%
m+p-xylene	mg/kg	<2	<2	<2	95%
o-Xylene	mg/kg	<1	<1	<1	94%
Naphthalene	mg/kg	<1	<1	<1	[NA]
Total +ve Xylenes	mg/kg	<1	<1	<1	[NA]
Surrogate aaa-Trifluorotoluene	%	93	82	94	90

svTRH (C10-C40) in Soil				
Our Reference	UNITS	366346-2	366346-4	366346-10
Your Reference		BH18_5.9-6.0	BH02_0.2-0.3	BH02_7.9-8.0
Date Sampled		13/11/2024	13/11/2024	13/11/2024
Type of sample		Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	23/11/2024	23/11/2024	23/11/2024
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100	<100
Total +ve TRH (C10-C36)	mg/kg	<50	<50	<50
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50
TRH >C_{10} -C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50
Surrogate o-Terphenyl	%	77	76	75

PAHs in Soil				
Our Reference	UNITS	366346-2	366346-4	366346-10
Your Reference		BH18_5.9-6.0	BH02_0.2-0.3	BH02_7.9-8.0
Date Sampled		13/11/2024	13/11/2024	13/11/2024
Type of sample		Soil	Soil	Soil
Date extracted	-	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	21/11/2024	22/11/2024	22/11/2024
Naphthalene	mg/kg	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	88	81	95

Organochlorine Pesticides in soil		
Our Reference		366346-4
Your Reference	UNITS	BH02_0.2-0.3
Date Sampled		13/11/2024
Type of sample		Soil
Date extracted	-	20/11/2024
Date analysed	-	22/11/2024
alpha-BHC	mg/kg	<0.1
HCB	mg/kg	<0.1
beta-BHC	mg/kg	<0.1
gamma-BHC	mg/kg	<0.1
Heptachlor	mg/kg	<0.1
delta-BHC	mg/kg	<0.1
Aldrin	mg/kg	<0.1
Heptachlor Epoxide	mg/kg	<0.1
gamma-Chlordane	mg/kg	<0.1
alpha-chlordane	mg/kg	<0.1
Endosulfan I	mg/kg	<0.1
pp-DDE	mg/kg	<0.1
Dieldrin	mg/kg	<0.1
Endrin	mg/kg	<0.1
Endosulfan II	mg/kg	<0.1
pp-DDD	mg/kg	<0.1
Endrin Aldehyde	mg/kg	<0.1
pp-DDT	mg/kg	<0.1
Endosulfan Sulphate	mg/kg	<0.1
Methoxychlor	mg/kg	<0.1
Mirex	mg/kg	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1
Total Positive Aldrin+Dieldrin	mg/kg	<0.1
Surrogate 4-Chloro-3-NBTF	%	89

PCBs in Soil		
Our Reference		366346-4
Your Reference	UNITS	BH02_0.2-0.3
Date Sampled		13/11/2024
Type of sample		Soil
Date extracted	-	20/11/2024
Date analysed	-	22/11/2024
Aroclor 1016	mg/kg	<0.1
Aroclor 1221	mg/kg	<0.1
Aroclor 1232	mg/kg	<0.1
Aroclor 1242	mg/kg	<0.1
Aroclor 1248	mg/kg	<0.1
Aroclor 1254	mg/kg	<0.1
Aroclor 1260	mg/kg	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1
Surrogate 2-Fluorobiphenyl	%	80

Acid Extractable metals in soil				
Our Reference	UNITS	366346-2	366346-4	366346-10
Your Reference		BH18_5.9-6.0	BH02_0.2-0.3	BH02_7.9-8.0
Date Sampled		13/11/2024	13/11/2024	13/11/2024
Type of sample		Soil	Soil	Soil
Date prepared	-	20/11/2024	20/11/2024	20/11/2024
Date analysed	-	20/11/2024	20/11/2024	20/11/2024
Arsenic	mg/kg	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4
Chromium	mg/kg	7	16	7
Copper	mg/kg	4	10	2
Lead	mg/kg	7	14	12
Mercury	mg/kg	<0.1	<0.1	<0.1
Nickel	mg/kg	4	9	4
Zinc	mg/kg	17	31	16

Moisture					
Our Reference		366346-2	366346-4	366346-10	366346-14
Your Reference	UNITS	BH18_5.9-6.0	BH02_0.2-0.3	BH02_7.9-8.0	QC503
Date Sampled		13/11/2024	13/11/2024	13/11/2024	13/11/2024
Type of sample		Soil	Soil	Soil	Soil
Date prepared	-	19/11/2024	19/11/2024	19/11/2024	19/11/2024
Date analysed	-	20/11/2024	20/11/2024	20/11/2024	20/11/2024
Moisture	%	14	10	11	1.6

Asbestos ID - soils NEPM - ASB-001		
Our Reference	UNITS	366346-4
Your Reference		BH02_0.2-0.3
Date Sampled		13/11/2024
Type of sample		Soil
Date analysed	-	25/11/2024
Sample mass tested	g	776.76
Sample Description	-	Brown coarse-grained soil & rocks
Asbestos ID in soil (AS4964) >0.1g/kg	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected
Total Asbestos[#1]	g/kg	<0.1
Asbestos ID in soil <0.1g/kg*	-	No visible asbestos detected
ACM >7mm Estimation*	g	–
FA and AF Estimation*	g	–
ACM >7mm Estimation*	%(w/w)	<0.01
FA and AF Estimation*#2	%(w/w)	<0.001
Asbestos comments	-	Nil

PFAS in Soils Short			
Our Reference		366346-4	366346-14
Your Reference	UNITS	BH02_0.2-0.3	QC503
Date Sampled		13/11/2024	13/11/2024
Type of sample		Soil	Soil
Date prepared	-	20/11/2024	20/11/2024
Date analysed	-	20/11/2024	20/11/2024
Perfluorobutanesulfonic acid	µg/kg	<0.1	<0.1
Perfluorohexanesulfonic acid - PFHxS	µg/kg	<0.1	<0.1
Perfluorooctanesulfonic acid PFOS	µg/kg	1.9	<0.1
Perfluorooctanoic acid PFOA	µg/kg	0.2	<0.1
6:2 FTS	µg/kg	<0.1	<0.1
8:2 FTS	µg/kg	<0.2	<0.2
Surrogate $^{13}C_8$ *PFOS*	%	97	101
Surrogate $^{13}C_2$ *PFOA*	%	105	100
Extracted ISTD $^{13}C_3$ *PFBS*	%	101	106
Extracted ISTD $^{18}O_2$ *PFHxS*	%	98	110
Extracted ISTD $^{13}C_4$ *PFOS*	%	101	107
Extracted ISTD $^{13}C_4$ *PFOA*	%	98	104
Extracted ISTD $^{13}C_2$ *6:2FTS*	%	105	107
Extracted ISTD $^{13}C_2$ *8:2FTS*	%	117	110
Total Positive PFHxS & PFOS	µg/kg	1.9	<0.1
Total Positive PFOS & PFOA	µg/kg	2.1	<0.1
Total Positive PFAS	µg/kg	2.1	<0.1

PFAS in TCLP Short		
Our Reference		366346-4
Your Reference	UNITS	BH02_0.2-0.3
Date Sampled		13/11/2024
Type of sample		Soil
Date prepared	-	20/11/2024
Date analysed	-	21/11/2024
pH of soil for fluid# determ.	pH units	8.6
pH of soil TCLP (after HCl)	pH units	1.7
Extraction fluid used		1
pH of final Leachate	pH units	5.0
Perfluorobutanesulfonic acid	µg/L	<0.01
Perfluorohexanesulfonic acid - PFHxS	µg/L	<0.01
Perfluorooctanesulfonic acid PFOS	µg/L	0.03
Perfluorooctanoic acid PFOA	µg/L	<0.01
6:2 FTS	µg/L	<0.01
8:2 FTS	µg/L	<0.02
Surrogate $^{13}C_8$ *PFOS*	%	103
Surrogate $^{13}C_2$ *PFOA*	%	103
Extracted ISTD $^{13}C_3$ *PFBS*	%	97
Extracted ISTD $^{18}O_2$ *PFHxS*	%	92
Extracted ISTD $^{13}C_4$ *PFOS*	%	96
Extracted ISTD $^{13}C_4$ *PFOA*	%	94
Extracted ISTD $^{13}C_2$ *6:2FTS*	%	67
Extracted ISTD $^{13}C_2$ *8:2FTS*	%	75
Total Positive PFHxS & PFOS	µg/L	0.03
Total Positive PFOS & PFOA	µg/L	0.03
Total Positive PFAS	µg/L	0.03

vTRH(C6-C10)/BTEXN in Water		
Our Reference	UNITS	366346-11
Your Reference		QC302
Date Sampled		13/11/2024
Type of sample		Water
Date extracted	-	21/11/2024
Date analysed	-	22/11/2024
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	%	96
Surrogate Toluene-d8	%	98
Surrogate 4-Bromofluorobenzene	%	88

svTRH (C10-C40) in Water		
Our Reference	UNITS	366346-11
Your Reference		QC302
Date Sampled		13/11/2024
Type of sample		Water
Date extracted	-	20/11/2024
Date analysed	-	21/11/2024
TRH C_{10} - C_{14}	µg/L	<50
TRH C_{15} - C_{28}	µg/L	<100
TRH C_{29} - C_{36}	µg/L	<100
Total +ve TRH (C10-C36)	µg/L	<50
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
Total +ve TRH (>C10-C40)	µg/L	<50
Surrogate o-Terphenyl	%	62

Metals in Waters - Acid extractable		
Our Reference		366346-11
Your Reference	UNITS	QC302
Date Sampled		13/11/2024
Type of sample		Water
Date prepared	-	20/11/2024
Date analysed	-	20/11/2024
Arsenic - Total	mg/L	<0.05
Cadmium - Total	mg/L	<0.01
Chromium - Total	mg/L	<0.01
Copper - Total	mg/L	<0.01
Lead - Total	mg/L	<0.03
Mercury - Total	mg/L	<0.0005
Nickel - Total	mg/L	<0.02
Zinc - Total	mg/L	<0.02

PFAS in Waters Short		
Our Reference		366346-11
Your Reference	UNITS	QC302
Date Sampled		13/11/2024
Type of sample		Water
Date prepared	-	22/11/2024
Date analysed	-	22/11/2024
Perfluorobutanesulfonic acid	µg/L	<0.01
Perfluorohexanesulfonic acid - PFHxS	µg/L	<0.01
Perfluorooctanesulfonic acid PFOS	µg/L	<0.01
Perfluorooctanoic acid PFOA	µg/L	<0.01
6:2 FTS	µg/L	<0.01
8:2 FTS	µg/L	<0.02
Surrogate $^{13}C_8$ *PFOS*	%	97
Surrogate $^{13}C_2$ *PFOA*	%	102
Extracted ISTD $^{13}C_3$ *PFBS*	%	97
Extracted ISTD $^{18}O_2$ *PFHxS*	%	95
Extracted ISTD $^{13}C_4$ *PFOS*	%	93
Extracted ISTD $^{13}C_4$ *PFOA*	%	91
Extracted ISTD $^{13}C_2$ *6:2FTS*	%	76
Extracted ISTD $^{13}C_2$ *8:2FTS*	%	77
Total Positive PFHxS & PFOS	µg/L	<0.01
Total Positive PFOA & PFOS	µg/L	<0.01
Total Positive PFAS	µg/L	<0.01

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
ASB-001	Asbestos ID - Identification of asbestos in soil samples using Polarised Light Microscopy and Dispersion Staining Techniques. Minimum 500mL soil sample was analysed as recommended by "National Environment Protection (Assessment of site contamination) Measure, Schedule B1 and "The Guidelines from the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia - May 2009" with a reporting limit of 0.1g/kg (0.01% w/w) as per Australian Standard AS4964-2004. Results reported denoted with * are outside our scope of NATA accreditation. NOTE#1 Total Asbestos g/kg was analysed and reported as per Australian Standard AS4964 (This is the sum of ACM >7mm, <7mm and FA/AF relative to the sample mass tested) NOTE#2 The screening level of 0.001% w/w asbestos in soil for FA and AF only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres. Estimation = Estimated asbestos weight Results reported with "--" is equivalent to no visible asbestos identified using Polarised Light microscopy and Dispersion Staining Techniques.
Inorg-004	Toxicity Characteristic Leaching Procedure (TCLP) using AS 4439. Please note that the mass used may be scaled down from default based on sample mass available. Samples are stored at 2-6oC before and after leachate preparation.
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.

Method ID	Methodology Summary
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-021/022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD and/or GC-MS/GC-MSMS. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.
Org-022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS/GC-MSMS. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
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	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.
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.
Org-029	Soil samples are extracted with basified Methanol. Waters and soil extracts are directly injected and/or concentrated/extracted using SPE. TCLPs/ASLP leachates are centrifuged, the supernatant is then analysed (including amendment with solvent) - as per the option in AS4439.3. Analysis is undertaken with LC-MS/MS. PFAS results include the sum of branched and linear isomers where applicable. Please note that PFAS results are corrected for Extracted Internal Standards (QSM 5.4 Table B-15 terminology), which are mass labelled analytes added prior to sample preparation to assess matrix effects and verify processing of the sample. PFAS analytes without a commercially available mass labelled analogue are corrected vs a closely eluting mass labelled PFAS compound. Surrogates are also reported, in this context they are mass labelled PFAS compounds added prior to extraction but are used as monitoring compounds only (not used for result correction). Envicarb (or similar) is used discretionally to remove interfering matrix components. Please contact the laboratory if estimates of Measurement Uncertainty are required as per WA DER.

QUALITY CONTROL: VOCs in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date Extracted	-			20/11/2024	4	20/11/2024	20/11/2024		20/11/2024	[NT]
Date Analysed	-			20/11/2024	4	20/11/2024	20/11/2024		20/11/2024	[NT]
Dichlorodifluoromethane	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
Chloromethane	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
Vinyl Chloride	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
Bromomethane	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
Chloroethane	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
Trichlorofluoromethane	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
1,1-Dichloroethene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
trans-1,2-Dichloroethene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
1,1-Dichloroethane	mg/kg	1	Org-023	<1	4	<1	<1	0	112	[NT]
cis-1,2-Dichloroethene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
Bromochloromethane	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
Chloroform	mg/kg	1	Org-023	<1	4	<1	<1	0	114	[NT]
2,2-Dichloropropane	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
1,2-Dichloroethane	mg/kg	1	Org-023	<1	4	<1	<1	0	97	[NT]
1,1,1-Trichloroethane	mg/kg	1	Org-023	<1	4	<1	<1	0	93	[NT]
1,1-Dichloropropene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
Cyclohexane	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
Carbon Tetrachloride	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-023	<0.2	4	<0.2	<0.2	0	97	[NT]
Dibromomethane	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
1,2-Dichloropropane	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
Trichloroethene	mg/kg	1	Org-023	<1	4	<1	<1	0	91	[NT]
Bromodichloromethane	mg/kg	1	Org-023	<1	4	<1	<1	0	91	[NT]
trans-1,3-Dichloropropene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
cis-1,3-Dichloropropene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
1,1,2-Trichloroethane	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-023	<0.5	4	<0.5	<0.5	0	105	[NT]
1,3-Dichloropropane	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
Dibromochloromethane	mg/kg	1	Org-023	<1	4	<1	<1	0	95	[NT]
1,2-Dibromoethane	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
Tetrachloroethene	mg/kg	1	Org-023	<1	4	<1	<1	0	101	[NT]
1,1,1,2-Tetrachloroethane	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
Chlorobenzene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-023	<1	4	<1	<1	0	105	[NT]
Bromoform	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
m+p-Xylene	mg/kg	2	Org-023	<2	4	<2	<2	0	105	[NT]
Styrene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
1,1,2,2-Tetrachloroethane	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]

QUALITY CONTROL: VOCs in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
o-Xylene	mg/kg	1	Org-023	<1	4	<1	<1	0	103	[NT]
1,2,3-Trichloropropane	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
Isopropylbenzene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
Bromobenzene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
n-Propylbenzene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
2-Chlorotoluene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
4-Chlorotoluene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
1,3,5-Trimethylbenzene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
tert-Butylbenzene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
1,2,4-Trimethylbenzene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
1,3-Dichlorobenzene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
sec-Butylbenzene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
1,4-Dichlorobenzene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
4-Isopropyltoluene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
1,2-Dichlorobenzene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
n-Butylbenzene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
1,2-Dibromo-3-chloropropane	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
1,2,4-Trichlorobenzene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
Hexachlorobutadiene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
1,2,3-Trichlorobenzene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	105	4	105	104	1	103	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	92	4	82	96	16	90	[NT]
Surrogate Toluene-d_8	%		Org-023	102	4	102	103	1	100	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-023	100	4	100	100	0	99	[NT]

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	-			20/11/2024	4	20/11/2024	20/11/2024		20/11/2024	[NT]
Date analysed	-			20/11/2024	4	20/11/2024	20/11/2024		20/11/2024	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	<25	4	<25	<25	0	103	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	4	<25	<25	0	103	[NT]
Benzene	mg/kg	0.2	Org-023	<0.2	4	<0.2	<0.2	0	97	[NT]
Toluene	mg/kg	0.5	Org-023	<0.5	4	<0.5	<0.5	0	105	[NT]
Ethylbenzene	mg/kg	1	Org-023	<1	4	<1	<1	0	105	[NT]
m+p-xylene	mg/kg	2	Org-023	<2	4	<2	<2	0	105	[NT]
o-Xylene	mg/kg	1	Org-023	<1	4	<1	<1	0	103	[NT]
Naphthalene	mg/kg	1	Org-023	<1	4	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	92	4	82	96	16	90	[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	-			20/11/2024	4	20/11/2024	20/11/2024		20/11/2024	[NT]
Date analysed	-			23/11/2024	4	23/11/2024	23/11/2024		23/11/2024	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	4	<50	<50	0	93	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	4	<100	<100	0	82	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	4	<100	<100	0	86	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	4	<50	<50	0	93	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	4	<100	<100	0	82	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	4	<100	<100	0	86	[NT]
Surrogate o-Terphenyl	%		Org-020	78	4	76	76	0	111	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			20/11/2024	4	20/11/2024	20/11/2024		20/11/2024	[NT]
Date analysed	-			22/11/2024	4	22/11/2024	22/11/2024		22/11/2024	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	70	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	72	[NT]
Fluorene	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	66	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	68	[NT]
Anthracene	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	66	[NT]
Pyrene	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	64	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	82	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	4	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	4	<0.05	0.07	33	62	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	90	4	81	84	4	87	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			20/11/2024	4	20/11/2024	20/11/2024		20/11/2024	[NT]
Date analysed	-			22/11/2024	4	22/11/2024	22/11/2024		22/11/2024	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	76	[NT]
HCB	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	70	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	78	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	72	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	76	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	68	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	76	[NT]
Endrin	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	78	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	72	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	80	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Mirex	mg/kg	0.1	Org-022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Surrogate 4-Chloro-3-NBTF	%		Org-022/025	90	4	89	87	2	88	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date extracted	-			20/11/2024	4	20/11/2024	20/11/2024		20/11/2024	[NT]
Date analysed	-			22/11/2024	4	22/11/2024	22/11/2024		22/11/2024	[NT]
Aroclor 1016	mg/kg	0.1	Org-021/022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021/022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021/022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021/022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021/022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021/022/025	<0.1	4	<0.1	<0.1	0	66	[NT]
Aroclor 1260	mg/kg	0.1	Org-021/022/025	<0.1	4	<0.1	<0.1	0	[NT]	[NT]
Surrogate 2-Fluorobiphenyl	%		Org-021/022/025	88	4	80	82	2	84	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			20/11/2024	4	20/11/2024	20/11/2024		20/11/2024	[NT]
Date analysed	-			20/11/2024	4	20/11/2024	20/11/2024		20/11/2024	[NT]
Arsenic	mg/kg	4	Metals-020	<4	4	<4	5	22	110	[NT]
Cadmium	mg/kg	0.4	Metals-020	<0.4	4	<0.4	<0.4	0	106	[NT]
Chromium	mg/kg	1	Metals-020	<1	4	16	15	6	103	[NT]
Copper	mg/kg	1	Metals-020	<1	4	10	11	10	102	[NT]
Lead	mg/kg	1	Metals-020	<1	4	14	20	35	104	[NT]
Mercury	mg/kg	0.1	Metals-021	<0.1	4	<0.1	<0.1	0	98	[NT]
Nickel	mg/kg	1	Metals-020	<1	4	9	9	0	104	[NT]
Zinc	mg/kg	1	Metals-020	<1	4	31	30	3	100	[NT]

QUALITY CONTROL: PFAS in Soils Short						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	[NT]
Date prepared	-			20/11/2024	4	20/11/2024	20/11/2024		20/11/2024	[NT]
Date analysed	-			20/11/2024	4	20/11/2024	20/11/2024		20/11/2024	[NT]
Perfluorobutanesulfonic acid	µg/kg	0.1	Org-029	<0.1	4	<0.1	<0.1	0	88	[NT]
Perfluorohexanesulfonic acid - PFHxS	µg/kg	0.1	Org-029	<0.1	4	<0.1	<0.1	0	96	[NT]
Perfluorooctanesulfonic acid PFOS	µg/kg	0.1	Org-029	<0.1	4	1.9	1.7	11	93	[NT]
Perfluorooctanoic acid PFOA	µg/kg	0.1	Org-029	<0.1	4	0.2	0.1	67	90	[NT]
6:2 FTS	µg/kg	0.1	Org-029	<0.1	4	<0.1	<0.1	0	91	[NT]
8:2 FTS	µg/kg	0.2	Org-029	<0.2	4	<0.2	<0.2	0	89	[NT]
Surrogate $^{13}C_8$ *PFOS*	%		Org-029	98	4	97	99	2	96	[NT]
Surrogate $^{13}C_2$ *PFOA*	%		Org-029	106	4	105	100	5	100	[NT]
Extracted ISTD $^{13}C_3$ *PFBS*	%		Org-029	108	4	101	101	0	109	[NT]
Extracted ISTD $^{18}O_2$ *PFHxS*	%		Org-029	105	4	98	103	5	105	[NT]
Extracted ISTD $^{13}C_4$ *PFOS*	%		Org-029	108	4	101	99	2	107	[NT]
Extracted ISTD $^{13}C_4$ *PFOA*	%		Org-029	101	4	98	101	3	106	[NT]
Extracted ISTD $^{13}C_2$ *6:2FTS*	%		Org-029	109	4	105	109	4	113	[NT]
Extracted ISTD $^{13}C_2$ *8:2FTS*	%		Org-029	120	4	117	114	3	128	[NT]

QUALITY CONTROL: PFAS in TCLP Short						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			20/11/2024	4	20/11/2024	20/11/2024		20/11/2024	[NT]
Date analysed	-			21/11/2024	4	21/11/2024	21/11/2024		21/11/2024	[NT]
Perfluorobutanesulfonic acid	µg/L	0.01	Org-029	<0.01	4	<0.01	<0.01	0	97	[NT]
Perfluorohexanesulfonic acid - PFHxS	µg/L	0.01	Org-029	<0.01	4	<0.01	<0.01	0	104	[NT]
Perfluorooctanesulfonic acid PFOS	µg/L	0.01	Org-029	<0.01	4	0.03	0.03	0	101	[NT]
Perfluorooctanoic acid PFOA	µg/L	0.01	Org-029	<0.01	4	<0.01	<0.01	0	95	[NT]
6:2 FTS	µg/L	0.01	Org-029	<0.01	4	<0.01	<0.01	0	94	[NT]
8:2 FTS	µg/L	0.02	Org-029	<0.02	4	<0.02	<0.02	0	95	[NT]
Surrogate $^{13}C_8$ *PFOS*	%		Org-029	97	4	103	104	1	99	[NT]
Surrogate $^{13}C_2$ *PFOA*	%		Org-029	105	4	103	101	2	101	[NT]
Extracted ISTD $^{13}C_3$ *PFBS*	%		Org-029	95	4	97	96	1	99	[NT]
Extracted ISTD $^{18}O_2$ *PFHxS*	%		Org-029	103	4	92	91	1	98	[NT]
Extracted ISTD $^{13}C_4$ *PFOS*	%		Org-029	103	4	96	96	0	98	[NT]
Extracted ISTD $^{13}C_4$ *PFOA*	%		Org-029	95	4	94	97	3	96	[NT]
Extracted ISTD $^{13}C_2$ *6:2FTS*	%		Org-029	65	4	67	67	0	65	[NT]
Extracted ISTD $^{13}C_2$ *8:2FTS*	%		Org-029	72	4	75	77	3	70	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Water						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			21/11/2024	[NT]	[NT]	[NT]	[NT]	21/11/2024	[NT]
Date analysed	-			22/11/2024	[NT]	[NT]	[NT]	[NT]	22/11/2024	[NT]
TRH C_6 - C_9	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	98	[NT]
TRH C_6 - C_{10}	µg/L	10	Org-023	<10	[NT]	[NT]	[NT]	[NT]	98	[NT]
Benzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Toluene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	100	[NT]
Ethylbenzene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	98	[NT]
m+p-xylene	µg/L	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	97	[NT]
o-xylene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	97	[NT]
Naphthalene	µg/L	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluoromethane	%		Org-023	101	[NT]	[NT]	[NT]	[NT]	100	[NT]
Surrogate Toluene-d8	%		Org-023	99	[NT]	[NT]	[NT]	[NT]	101	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-023	98	[NT]	[NT]	[NT]	[NT]	99	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Water					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W2	[NT]
Date extracted	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Date analysed	-			21/11/2024	[NT]	[NT]	[NT]	[NT]	21/11/2024	[NT]
TRH C_{10} - C_{14}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	114	[NT]
TRH C_{15} - C_{28}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	119	[NT]
TRH C_{29} - C_{36}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	129	[NT]
TRH >C_{10} - C_{16}	µg/L	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	114	[NT]
TRH >C_{16} - C_{34}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	119	[NT]
TRH >C_{34} - C_{40}	µg/L	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	129	[NT]
Surrogate o-Terphenyl	%		Org-020	80	[NT]	[NT]	[NT]	[NT]	109	[NT]

QUALITY CONTROL: Metals in Waters - Acid extractable						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Date analysed	-			20/11/2024	[NT]	[NT]	[NT]	[NT]	20/11/2024	[NT]
Arsenic - Total	mg/L	0.05	Metals-020	<0.05	[NT]	[NT]	[NT]	[NT]	111	[NT]
Cadmium - Total	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	103	[NT]
Chromium - Total	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	103	[NT]
Copper - Total	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	[NT]	[NT]	110	[NT]
Lead - Total	mg/L	0.03	Metals-020	<0.03	[NT]	[NT]	[NT]	[NT]	105	[NT]
Mercury - Total	mg/L	0.0005	Metals-021	<0.0005	[NT]	[NT]	[NT]	[NT]	112	[NT]
Nickel - Total	mg/L	0.02	Metals-020	<0.02	[NT]	[NT]	[NT]	[NT]	104	[NT]
Zinc - Total	mg/L	0.02	Metals-020	<0.02	[NT]	[NT]	[NT]	[NT]	105	[NT]

QUALITY CONTROL: PFAS in Waters Short					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date prepared	-			22/11/2024	[NT]	[NT]	[NT]	[NT]	22/11/2024	[NT]
Date analysed	-			22/11/2024	[NT]	[NT]	[NT]	[NT]	22/11/2024	[NT]
Perfluorobutanesulfonic acid	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	102	[NT]
Perfluorohexanesulfonic acid - PFHxS	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	102	[NT]
Perfluorooctanesulfonic acid PFOS	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	97	[NT]
Perfluorooctanoic acid PFOA	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	102	[NT]
6:2 FTS	µg/L	0.01	Org-029	<0.01	[NT]	[NT]	[NT]	[NT]	112	[NT]
8:2 FTS	µg/L	0.02	Org-029	<0.02	[NT]	[NT]	[NT]	[NT]	109	[NT]
Surrogate $^{13}C_8$ *PFOS*	%		Org-029	93	[NT]	[NT]	[NT]	[NT]	94	[NT]
Surrogate $^{13}C_2$ *PFOA*	%		Org-029	100	[NT]	[NT]	[NT]	[NT]	98	[NT]
Extracted ISTD $^{13}C_3$ *PFBS*	%		Org-029	100	[NT]	[NT]	[NT]	[NT]	98	[NT]
Extracted ISTD $^{18}O_2$ *PFHxS*	%		Org-029	97	[NT]	[NT]	[NT]	[NT]	94	[NT]
Extracted ISTD $^{13}C_4$ *PFOS*	%		Org-029	98	[NT]	[NT]	[NT]	[NT]	100	[NT]
Extracted ISTD $^{13}C_4$ *PFOA*	%		Org-029	93	[NT]	[NT]	[NT]	[NT]	95	[NT]
Extracted ISTD $^{13}C_2$ *6:2FTS*	%		Org-029	80	[NT]	[NT]	[NT]	[NT]	88	[NT]
Extracted ISTD $^{13}C_2$ *8:2FTS*	%		Org-029	83	[NT]	[NT]	[NT]	[NT]	92	[NT]

Result Definitions

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

Quality Control Definitions

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

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

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

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

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

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

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

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

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

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

Report Comments

Asbestos-ID in soil: NEPM
This report is consistent with the reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1, May 2013. This is reported outside our scope of NATA accreditation.

CoC Updated: 18/11/24, 1852

S22013, Mars Road DSI

	Sample Name	Lab Report	Comment	Date Time	Combo 1M	PFAS Shot Suite	BTEX	Combo 5AN	Combo 3	Combo 5	VOC	Asbestos ID	Asbestos NEPM	TCLP PFAS short suite	HOLD
4	BH02_0.2-0.3	366346	-	13/11/2024 13:41		X		X			X			X	
5	BH02_0.4-0.5	366346	-	13/11/2024 13:41											X
6	BH02_0.9-1.0	366346	-	13/11/2024 13:42											X
7	BH02_1.9-2.0	366346	-	13/11/2024 13:52											X
8	BH02_3.9-4.0	366346	-	13/11/2024 14:10											X
9	BH02_5.9-6.0	366346	-	13/11/2024 15:14											X
10	BH02_7.9-8.0	366346	-	13/11/2024 17:01					X						
1	BH18_3.9-4.0	366346	-	13/11/2024 9:29											X
2	BH18_5.9-6.0	366346	-	13/11/2024 10:36					X						
3	BH18_7.9-8.0	366346	-	13/11/2024 11:32											X
11	QC302	366346	-	13/11/2024 0:00	X	X									
12	QC402	366346	-	13/11/2024 0:00			X								
13	QC502	366346	-	13/11/2024 0:00											X
14	QC503	366346	-	13/11/2024 0:00		X									

ENVIROLAB GROUP
Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 366346

Date Received: 14/11/24
Time Received: 1020
Received By: EW
Temp: Cool/Ambient 3°C
Cooling: Ice/Icepack
Security: Intact/Broken/None

senversa

Chain of Custody Documentation

Senversa Pty Ltd
www.senversa.com.au
ABN 89 132 231 380

Laboratory:
Address:
Contact: Sample Receipt
Phone:

Job Number:	SZ2013	Purchase Order:	
Project Name:	Mars Road DSI	Quote No:	24575162
Sampled By:	LO HY	Turn Around Time:	Standard
Project Manager:	Zoe Smith	Page:	1 of 1
Email Report To:	Zoe.Smith@senversa.com.au	Phone/Mobile:	0431 659 835

Sample Information					Container Information		Analysis Required											
Lab ID	Sample ID	Matrix *	Date	Time	Type / Code	Total Bottles											HOLD	Comments: e.g. Highly contaminated sample; hazardous materials present; trace LORs etc.
1	BH03_3.0-4.0	Soil	13/11/24	AM	JAR PFAS	x2											X	Security: Intact/Broken/None
2	BH03_5.0-6.0					x2											X	
3	BH03_7.0-8.0					x2											X	
4	BH02_0.2-0.3					x3											X	
5	BH02_0.4-0.5					x2											X	
6	BH02_0.9-1.0					x2											X	
7	BH02_1.9-2.0					x2											X	
8	BH02_3.9-4.0					x2											X	
9	BH02_5.9-6.0					x2											X	
10	BH02_7.9-8.0					x2											X	
11	QC302	Water	13/11/24	PM	Vials, Bottles	x7											X	
12	QC402				Vial	x1											X	BS
13	QC502				Vial	x1												TB
14	QC503				PFAS	x1												TB PFAS
Total																		

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 366246
Date Received: 14/11/24
Time Received: 1020
Received By: EW
Temp: Cool/Ambient
Cooling: Ice/icepack 3°C

Sampler: I attest that proper field sampling procedures in accordance with Senversa standard procedures and/or project specifications were used during the collection of these samples:	Sampler Name: Lucas Kowalkowski	Signature:	Date: 13/11/24

Relinquished By:			Method of Shipment (if applicable):	Received by:	
Name/Signature:	Lucas Kowalkowski	Date: 15/11/24	Carrier / Reference #:	Name/Signature:	Date:
Of:		Time:	Date/Time:	Of:	Time:
Name/Signature:		Date:	Carrier / Reference #:	Name/Signature:	Date:
Of:		Time:	Date/Time:	Of:	Time:
Name/Signature:		Date:	Carrier / Reference #:	Name/Signature:	Date:
Of:		Time:	Date/Time:	Of:	Time:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Acid (HNO_3) Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide (NaOH)/Cadmium (Cd) Preserved; S = Sodium Hydroxide Preserved Plastic; STH = Sodium thiosulfate preserved plastic; V = VOA Vial Hydochloric Acid (HCl) Preserved; VS = VOA Vial Sulphuric Preserved; VSA = Sulphuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation Bottle; SP = Sulphuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; UA = Unpreserved Amber Glass; L=Lugol's Iodine preserved white plastic bottle; SW= sulfuric acid preserved wide mouth glass jar

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

DATA QUALITY ASSESSMENT SUMMARY

Report Details

Envirolab Report Reference	**366346**
Client ID	Senversa Pty Ltd
Project Reference	S22013, Mars Road DSI
Date Issued	28/11/2024

QC DATA

All laboratory QC data was within the Envirolab Group's specifications.

HOLDING TIME COMPLIANCE EVALUATION

All preservation / holding times (based on AS/ASPHA/ISO/NEPM/USEPA reference documents and standards) are compliant.

Certain analyses have had their recommended technical holding times elongated by filtering and/or freezing on receipt at the laboratory (e.g. BOD, chlorophyll/Pheophytin, nutrients and acid sulphate soil tests).

COMPLIANCE TO QC FREQUENCY (NEPM)

Internal laboratory QC rate complies with NEPM requirements (LCS/MB/MS 1 in 20, Duplicates 1 in 10 samples). Note, samples are batched together with other sample consignments in order to assign QC sample frequency.

QC Evaluation

Duplicate(s) was performed as per NEPM frequency	✓
Laboratory Control Sample(s) were analysed with the samples received	✓
A Method Blank was performed with the samples received	✓
Matrix spike(s) was performed as per NEPM frequency (Not Applicable for Air samples)	✓

Refer to Certificate of Analysis for all Quality Control data.

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
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SAMPLE RECEIPT ADVICE

Client Details

Client	Senversa Pty Ltd
Attention	Zoe Smith

Sample Login Details

Your reference	S22013, Mars Road DSI
Envirolab Reference	366346
Date Sample Received	14/11/2024
Date Instructions Received	18/11/2024
Date Results Expected to be Reported	25/11/2024

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	13 Soil, 1 Water
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	3
Cooling Method	Ice
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
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www.envirolab.com.au

Sample ID	VOCs in soil	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	PCBs in Soil	Acid Extractable metalsin soil	Asbestos ID - soils NEPM - ASB-001	PFAS in Soils Short	PFAS in TCLP Short	vTRH(C6-C10)/BTEXN in Water	svTRH (C10-C40) in Water	Metals in Waters -Acid extractable	PFAS in Waters Short	On Hold
BH18_3.9-4.0															✓
BH18_5.9-6.0		✓	✓	✓			✓								
BH18_7.9-8.0															✓
BH02_0.2-0.3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓					
BH02_0.4-0.5															✓
BH02_0.9-1.0															✓
BH02_1.9-2.0															✓
BH02_3.9-4.0															✓
BH02_5.9-6.0															✓
BH02_7.9-8.0		✓	✓	✓			✓								
QC302											✓	✓	✓	✓	
QC402		✓													
QC502															✓
QC503									✓						

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.

CERTIFICATE OF ANALYSIS

Work Order	: **ES2437730**	Page	: 1 of 7
Client	: **SENVERSA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: Zoe Smith	Contact	: Andrew Wotherspoon
Address	: Level 24, 1 Market St, SYDNEY NSW 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: 02 8252 0000	Telephone	: +61-2-8784 8555
Project	: S22013 Mars Road DSI	Date Samples Received	: 15-Nov-2024 15:48
Order number	: ----	Date Analysis Commenced	: 21-Nov-2024
C-O-C number	: ----	Issue Date	: 26-Nov-2024 17:27
Sampler	: Lucas Dzalakowski		
Site	: ----		
Quote number	: EN/000		
No. of samples received	: 7		
No. of samples analysed	: 3		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contract for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration or as per USEPA 1633 limits where LISTED. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS and also conform to QSM 5.4 (US DoD) requirements.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	QC201	QC203	QC205	----	----
				Sampling date / time	13-Nov-2024 00:00	14-Nov-2024 00:00	15-Nov-2024 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2437730-001	ES2437730-003	ES2437730-005	--------	--------
					Result	Result	Result	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		**18.7**	**17.4**	**23.1**	----	----
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	**7**	<5	----	----
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	----	----
Chromium	7440-47-3	2	mg/kg		**15**	**24**	**4**	----	----
Copper	7440-50-8	5	mg/kg		**9**	<5	<5	----	----
Lead	7439-92-1	5	mg/kg		**20**	**10**	**10**	----	----
Nickel	7440-02-0	2	mg/kg		**10**	<2	**2**	----	----
Zinc	7440-66-6	5	mg/kg		**28**	<5	**19**	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	QC201	QC203	QC205	----	----
				Sampling date / time	13-Nov-2024 00:00	14-Nov-2024 00:00	15-Nov-2024 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2437730-001	ES2437730-003	ES2437730-005	--------	--------
					Result	Result	Result	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
^ **Benzo(a)pyrene TEQ (zero)**	----	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
^ **Benzo(a)pyrene TEQ (half LOR)**	----	0.5	mg/kg		**0.6**	**0.6**	**0.6**	----	----
^ **Benzo(a)pyrene TEQ (LOR)**	----	0.5	mg/kg		**1.2**	**1.2**	**1.2**	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	----	----
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	----	----
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	----	----
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	----	----
^ **C10 - C36 Fraction (sum)**	----	50	mg/kg		<50	<50	<50	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	10	mg/kg		<10	<10	<10	----	----
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	----	----
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	----	----
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	----	----
^ **>C10 - C40 Fraction (sum)**	----	50	mg/kg		<50	<50	<50	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	50	mg/kg		<50	<50	<50	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	<0.2	<0.2	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	QC201	QC203	QC205	----	----
				Sampling date / time	13-Nov-2024 00:00	14-Nov-2024 00:00	15-Nov-2024 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2437730-001	ES2437730-003	ES2437730-005	--------	--------
					Result	Result	Result	----	----
EP080: BTEXN - Continued									
^ **Total Xylenes**	----	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		**0.0021**	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg		<0.0005	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg		<0.0005	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg		<0.0005	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg		<0.0005	----	----	----	----
EP231P: PFAS Sums									
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0021**	----	----	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0021**	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**82.0**	**82.4**	**80.7**	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		**85.0**	**95.0**	**84.6**	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	QC201	QC203	QC205	----	----
				Sampling date / time	13-Nov-2024 00:00	14-Nov-2024 00:00	15-Nov-2024 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2437730-001	ES2437730-003	ES2437730-005	--------	--------
					Result	Result	Result	----	----
EP075(SIM)S: Phenolic Compound Surrogates - Continued									
2.4.6-Tribromophenol	118-79-6	0.5	%		51.4	48.8	62.8	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		82.2	81.3	80.6	----	----
Anthracene-d10	1719-06-8	0.5	%		90.0	86.9	88.8	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		82.0	81.0	82.0	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		81.7	108	99.6	----	----
Toluene-D8	2037-26-5	0.2	%		77.6	106	99.2	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		82.0	110	105	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		108	----	----	----	----
13C8-PFOA	----	0.0002	%		110	----	----	----	----

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2.4.6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	63	125
Toluene-D8	2037-26-5	67	124
4-Bromofluorobenzene	460-00-4	66	131
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

QUALITY CONTROL REPORT

Work Order	: **ES2437730**	Page	: 1 of 8
Client	: **SENVERSA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: Zoe Smith	Contact	: Andrew Wotherspoon
Address	: Level 24, 1 Market St, SYDNEY NSW 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: 02 8252 0000	Telephone	: +61-2-8784 8555
Project	: S22013 Mars Road DSI	Date Samples Received	: 15-Nov-2024
Order number	: ----	Date Analysis Commenced	: 21-Nov-2024
C-O-C number	: ----	Issue Date	: 26-Nov-2024
Sampler	: Lucas Dzalakowski		
Site	: ----		
Quote number	: EN/000		
No. of samples received	: 7		
No. of samples analysed	: 3		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC
* = The final LOR has been raised due to dilution or other sample specific cause; adjusted LOR is shown in brackets. The duplicate ranges for Acceptable RPD% are applied to the final LOR where applicable.

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 6204735)									
ES2437730-001	QC201	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	15	12	20.2	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	10	5	61.3	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	9	10	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	20	29	37.2	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	28	30	9.0	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 6204738)									
ES2437730-001	QC201	EA055: Moisture Content	----	0.1 (1.0)*	%	18.7	20.7	10.1	0% - 20%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 6204736)									
ES2437730-001	QC201	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 6203254)									
EW2405390-001	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 6203254) - continued									
EW2405390-001	Anonymous	EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 6203255)									
EW2405390-001	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 6204150)									
ES2437674-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES2437674-002	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 6203255)									
EW2405390-001	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 6204150)									
ES2437674-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES2437674-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080: BTEXN (QC Lot: 6204150)									
ES2437674-001	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
ES2437674-002	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP080: BTEXN (QC Lot: 6204150) - continued									
ES2437674-002	Anonymous	EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 6204062)									
ES2437540-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0054	0.0055	0.0	0% - 20%
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 6204062)									
ES2437540-001	Anonymous	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	0.0003	0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	0.0003	0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	0.0009	0.0008	13.3	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 6204062)									
ES2437540-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 6204735)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	93.9	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	114	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	19.6 mg/kg	108	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	99.5	89.0	111
EG005T: Lead	7439-92-1	5	mg/kg	<5	60.8 mg/kg	92.6	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.3 mg/kg	94.4	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	139.3 mg/kg	88.5	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 6204736)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	87.6	70.0	125
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 6203254)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	96.5	77.0	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	93.9	72.0	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	96.6	73.0	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	97.2	72.0	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	92.1	75.0	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	94.1	77.0	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	89.1	73.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	91.8	74.0	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	89.7	69.0	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	96.6	75.0	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	94.3	68.0	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	101	74.0	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	89.4	70.0	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	83.7	61.0	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	84.4	62.0	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	82.2	63.0	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6203255)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	99.2	75.0	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	102	77.0	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	106	71.0	129

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6204150)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	80.7	72.2	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6203255)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	101	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	103	74.0	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	106	63.0	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6204150)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	76.1	72.4	133
EP080: BTEXN (QCLot: 6204150)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	106	76.0	124
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	110	78.5	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	109	77.4	121
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	109	78.2	121
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	108	81.3	121
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	105	78.8	122
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6204062)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.00125 mg/kg	88.7	72.0	128
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	85.0	67.0	130
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	85.7	68.0	136
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6204062)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	97.4	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	87.9	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	90.6	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	105	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	87.9	69.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6204062)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00125 mg/kg	103	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00125 mg/kg	85.6	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.00125 mg/kg	110	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.00125 mg/kg	93.2	69.2	143

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 6204735)							
ES2437730-001	QC201	EG005T: Arsenic	7440-38-2	50 mg/kg	100	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	118	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	95.7	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	99.9	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	103	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	92.0	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	98.6	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 6204736)							
ES2437730-001	QC201	EG035T: Mercury	7439-97-6	5 mg/kg	89.2	70.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 6203254)							
EW2405390-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	96.8	70.0	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	100	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6203255)							
EW2405390-001	Anonymous	EP071: C10 - C14 Fraction	----	480 mg/kg	81.0	73.0	137
		EP071: C15 - C28 Fraction	----	3100 mg/kg	65.6	53.0	131
		EP071: C29 - C36 Fraction	----	2060 mg/kg	73.2	52.0	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6204150)							
ES2437674-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	81.6	60.4	142
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6203255)							
EW2405390-001	Anonymous	EP071: >C10 - C16 Fraction	----	860 mg/kg	75.4	73.0	137
		EP071: >C16 - C34 Fraction	----	4320 mg/kg	68.9	53.0	131
		EP071: >C34 - C40 Fraction	----	890 mg/kg	76.1	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6204150)							
ES2437674-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	77.1	61.1	142
EP080: BTEXN (QCLot: 6204150)							
ES2437674-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	90.1	62.1	122
		EP080: Toluene	108-88-3	2.5 mg/kg	93.6	66.6	119
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	93.4	67.4	123
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	90.4	66.4	121
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	89.6	70.7	121
		EP080: Naphthalene	91-20-3	2.5 mg/kg	96.0	61.1	115
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 6204062)							
ES2437540-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.00125 mg/kg	98.3	72.0	128
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00125 mg/kg	99.0	67.0	130
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00125 mg/kg	82.4	68.0	136

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 6204062)							
ES2437540-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	101	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	91.4	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	107	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	110	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	91.9	69.0	133
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 6204062)							
ES2437540-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00125 mg/kg	97.0	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00125 mg/kg	87.8	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.00125 mg/kg	109	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.00125 mg/kg	79.0	69.2	143

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2437730**	Page	: 1 of 6
Client	: **SENVERSA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: Zoe Smith	Telephone	: +61-2-8784 8555
Project	: S22013 Mars Road DSI	Date Samples Received	: 15-Nov-2024
Site	: ----	Issue Date	: 26-Nov-2024
Sampler	: Lucas Dzalakowski	No. of samples received	: 7
Order number	: ----	No. of samples analysed	: 3

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, where applicable to the methodology, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **NO Quality Control Sample Frequency Outliers exist.**

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055) QC201	**13-Nov-2024**	**----**	----	----	**21-Nov-2024**	27-Nov-2024	✓
Soil Glass Jar - Unpreserved (EA055) QC203	**14-Nov-2024**	**----**	----	----	**21-Nov-2024**	28-Nov-2024	✓
Soil Glass Jar - Unpreserved (EA055) QC205	**15-Nov-2024**	**----**	----	----	**21-Nov-2024**	29-Nov-2024	✓
EG005(ED093)T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T) QC201	**13-Nov-2024**	**21-Nov-2024**	12-May-2025	✓	**22-Nov-2024**	12-May-2025	✓
Soil Glass Jar - Unpreserved (EG005T) QC203	**14-Nov-2024**	**21-Nov-2024**	13-May-2025	✓	**22-Nov-2024**	13-May-2025	✓
Soil Glass Jar - Unpreserved (EG005T) QC205	**15-Nov-2024**	**21-Nov-2024**	14-May-2025	✓	**22-Nov-2024**	14-May-2025	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T) QC201	**13-Nov-2024**	**21-Nov-2024**	11-Dec-2024	✓	**23-Nov-2024**	11-Dec-2024	✓
Soil Glass Jar - Unpreserved (EG035T) QC203	**14-Nov-2024**	**21-Nov-2024**	12-Dec-2024	✓	**23-Nov-2024**	12-Dec-2024	✓
Soil Glass Jar - Unpreserved (EG035T) QC205	**15-Nov-2024**	**21-Nov-2024**	13-Dec-2024	✓	**23-Nov-2024**	13-Dec-2024	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM)) QC201	**13-Nov-2024**	**21-Nov-2024**	27-Nov-2024	✓	**21-Nov-2024**	31-Dec-2024	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) QC203	**14-Nov-2024**	**21-Nov-2024**	28-Nov-2024	✓	**21-Nov-2024**	31-Dec-2024	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) QC205	**15-Nov-2024**	**21-Nov-2024**	29-Nov-2024	✓	**21-Nov-2024**	31-Dec-2024	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080) QC201	**13-Nov-2024**	**21-Nov-2024**	27-Nov-2024	✓	**22-Nov-2024**	27-Nov-2024	✓
Soil Glass Jar - Unpreserved (EP080) QC203	**14-Nov-2024**	**21-Nov-2024**	28-Nov-2024	✓	**22-Nov-2024**	28-Nov-2024	✓
Soil Glass Jar - Unpreserved (EP080) QC205	**15-Nov-2024**	**21-Nov-2024**	29-Nov-2024	✓	**22-Nov-2024**	29-Nov-2024	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP080) QC201	**13-Nov-2024**	**21-Nov-2024**	27-Nov-2024	✓	**22-Nov-2024**	27-Nov-2024	✓
Soil Glass Jar - Unpreserved (EP080) QC203	**14-Nov-2024**	**21-Nov-2024**	28-Nov-2024	✓	**22-Nov-2024**	28-Nov-2024	✓
Soil Glass Jar - Unpreserved (EP080) QC205	**15-Nov-2024**	**21-Nov-2024**	29-Nov-2024	✓	**22-Nov-2024**	29-Nov-2024	✓
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080) QC201	**13-Nov-2024**	**21-Nov-2024**	27-Nov-2024	✓	**22-Nov-2024**	27-Nov-2024	✓
Soil Glass Jar - Unpreserved (EP080) QC203	**14-Nov-2024**	**21-Nov-2024**	28-Nov-2024	✓	**22-Nov-2024**	28-Nov-2024	✓
Soil Glass Jar - Unpreserved (EP080) QC205	**15-Nov-2024**	**21-Nov-2024**	29-Nov-2024	✓	**22-Nov-2024**	29-Nov-2024	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE Soil Jar (EP231X) QC201	**13-Nov-2024**	**21-Nov-2024**	12-May-2025	✓	**26-Nov-2024**	31-Dec-2024	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE Soil Jar (EP231X) QC201	**13-Nov-2024**	**21-Nov-2024**	12-May-2025	✓	**26-Nov-2024**	31-Dec-2024	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE Soil Jar (EP231X) QC201	**13-Nov-2024**	**21-Nov-2024**	12-May-2025	✓	**26-Nov-2024**	31-Dec-2024	✓
EP231P: PFAS Sums							
HDPE Soil Jar (EP231X) QC201	**13-Nov-2024**	**21-Nov-2024**	12-May-2025	✓	**26-Nov-2024**	31-Dec-2024	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	1	3	**33.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	1	6	**16.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	10	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	3	**33.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	3	**33.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	6	**16.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	13	**15.38**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3)
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015 Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM Schedule B(3).
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270. Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM Schedule B(3) amended.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.4, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

Preparation Methods	*Method*	*Matrix*	*Method Descriptions*
QuECheRS Extraction of Solids	ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2437730**

Client	: **SENVERSA PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: Zoe Smith	Contact	: Andrew Wotherspoon
Address	: Level 24, 1 Market St, SYDNEY NSW 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: Zoe.Smith@senversa.com.au	E-mail	: andrew.wotherspoon@alsglobal.com
Telephone	: 02 8252 0000	Telephone	: +61-2-8784 8555
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: S22013 Mars Road DSI	Page	: 1 of 2
Order number	: ----	Quote number	: EB2023SENVER0001 (EN/000)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: Lucas Dzalakowski		

Dates

Date Samples Received	: 15-Nov-2024 15:48	Issue Date	: 21-Nov-2024
Client Requested Due Date	: 27-Nov-2024	Scheduled Reporting Date	: **27-Nov-2024**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: 7.0'C, 6.5'C & 6.2'C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 7 / 3

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- 21/11/2024 - This is an updated SRN which indicates the new scheduled release date for this work order.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Volatile organic compound analysis may be compromised as sample containers 1 and 5 contained headspace. Please contact ALS for further information.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Unless otherwise stated, analytical work for this work order will be conducted at ALS Sydney, NATA accreditation no. 825, site no. 10911.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Samples have been placed on hold as per COC
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	(On Hold) SOIL No analysis requested	SOIL - EA055-103 Moisture Content	SOIL - EP231 (solids) PFAS - Short Suite (12 analytes)	SOIL - S-26 8 metals/TRH/BTEXN/PAH
ES2437730-001	13-Nov-2024 00:00	QC201		✓	✓	✓
ES2437730-002	14-Nov-2024 00:00	QC202	✓			
ES2437730-003	14-Nov-2024 00:00	QC203		✓		✓
ES2437730-004	14-Nov-2024 00:00	QC204	✓			
ES2437730-005	15-Nov-2024 00:00	QC205		✓		✓
ES2437730-006	15-Nov-2024 00:00	QC508	✓			
ES2437730-007	15-Nov-2024 00:00	QC404	✓			

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

SUPPLIER ACCOUNTS

- A4 - AU Tax Invoice (INV)	Email	supplieraccounts@senversa.com.au

Zoe Smith

- *AU Certificate of Analysis - NATA (COA)	Email	Zoe.Smith@senversa.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	Zoe.Smith@senversa.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	Zoe.Smith@senversa.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	Zoe.Smith@senversa.com.au
- A4 - AU Tax Invoice (INV)	Email	Zoe.Smith@senversa.com.au
- Chain of Custody (CoC) (COC)	Email	Zoe.Smith@senversa.com.au
- EDI Format - ESDAT (ESDAT)	Email	Zoe.Smith@senversa.com.au

Environmental Division
Sydney
Work Order Reference
ES2437730

senversa

Senversa Pty Ltd
www.senversa.com.au
ABN 89 132 231 380

Chain of Custody Documentation

Laboratory: ALS
Address:
Contact: Sample Receipt
Phone:

Telephone : + 61-2-8784 8555

Job Number: 822013	Purchase Order:
Project Name: Mars Road DSI	Quote No: 24545162
Sampled By: LD	Turn Around Time:
Project Manager: Zoe Smith	Page: 1 of 1
Email Report To: zoe.smith@senversa.com.au	Phone/Mobile: 0431 654 335

Sample Information					Container Information		Analysis											
Lab ID	Sample ID	Matrix *	Date	Time	Type / Code	Total Bottles										HOLD		
1	QC201	SOIL	15/11/24	PM	JAR/PTB	x2										X		
2	QC202					x1										X		
3	QC203					x2										X		
4	QC204					x1										X		
5	QC205					x2										X		
6	QC503					x1												TB PFAS
7	QC102					x1												TS
Total																		

minated
present; trace

Sampler: I attest that proper field sampling procedures in accordance with Senversa standard procedures and/or project specifications were used during the collection of these samples:	Sampler Name: Lucas Dziadkowski	Signature:	Date: 15 / 11 / 24

Relinquished By:		Method of Shipment (if applicable):	Received by:	
Name/Signature: Lucas Dziadkowski	Date: 15/11/24	Carrier / Reference #:	Name/Signature: Wills	Date: 15/11/24
Of:	Time:	Date/Time:	Of: ALS	Time: 1548
Name/Signature:	Date:	Carrier / Reference #:	Name/Signature:	Date:
Of:	Time:	Date/Time:	Of:	Time:
Name/Signature:	Date:	Carrier / Reference #:	Name/Signature:	Date:
Of:	Time:	Date/Time:	Of:	Time:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Acid (HNO_3) Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide (NaOH)/Cadmium (Cd) Preserved; S = Sodium Hydroxide Preserved Plastic; STH = Sodium thiosulfate preserved plastic; V = VOA Vial Hydochloric Acid (HCl) Preserved; VS = VOA Vial Sulphuric Preserved; VSA = Sulphuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation Bottle; SP = Sulphuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; UA = Unpreserved Amber Glass; L=Lugol's iodine preserved white plastic bottle; SW= sulfuric acid preserved wide mouth glass jar

Andrew Makar

From: Fadi Soro on behalf of Samples Sydney
Sent: Wednesday, 20 November 2024 3:00 PM
To: Andrew Makar
Cc: Andrew Wotherspoon; Jack Clifton
Subject: FW: [EXTERNAL] - RE: 22013 - SRN and requested analysis

Follow Up Flag: Follow up
Flag Status: Flagged

2:34pm

Andrew
20/11/24

Hey Andrew,

Please see below updated analysis for WO ES2437730

Kind Regards,

right solutions. right partner.

Fadi Soro
Sample Receipt Supervisor, Environmental
Sydney, NSW

O: +61 2 8784 8555
D: +61 2 8784 8536
fadi.soro@alsglobal.com
277-289 Woodpark Road
Smithfield NSW 2164 AUSTRALIA

alsglobal.com

From: Andrew Wotherspoon <andrew.wotherspoon@ALSGlobal.com>
Sent: Wednesday, November 20, 2024 2:39 PM
To: Samples Sydney <Samples.Sydney@alsglobal.com>
Cc: Jack Clifton <jack.clifton@ALSGlobal.com>
Subject: FW: [EXTERNAL] - RE: 22013 - SRN and requested analysis

Hi team,

Could I please grab some assistance with this query from Zoe –

I understand that Lucas sent a batch samples for project S22013 Mars Road to the lab last week, we are yet to receive an SRN for this WO. These samples were placed on hold, however, can you please undertake the following analysis on standard TAT on these samples.

Sample Name	*Lab Report*	*Date Time*	*PFAS Shot Suite*	*S-26*	*HOLD*

1	QC201	Unconfirmed	13/11/2024 0:00	X	X	
2	QC202	Unconfirmed	14/11/2024 0:00			X
3	QC203	Unconfirmed	14/11/2024 0:00		X	
4	QC204	Unconfirmed	14/11/2024 0:00			X
5	QC205	Unconfirmed	15/11/2024 0:00		X	

Could I please confirm if we have the above samples for this Senversa batch?

Thank you in advance!

Kind Regards,

Andrew Wotherspoon
Client Services Officer, Environmental
Sydney, NSW

O: +61 2 8784 8555
D: +61 2 8784 8514
andrew.wotherspoon@alsglobal.com
277-289 Woodpark Road
Smithfield NSW 2164 AUSTRALIA

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EnviroMail 93 Australia Re-release – Laboratory quality assurance/quality control
EnviroMail 148 Australia – Interpreting TOP Assay
EnviroMail 149 Australia - Net Zero commitments and roadmap
EnviroMail 150 Australia - Spotlight on emerging contaminants - Triclosan
EnviroMail 151 Australia - Expanding the scope of PFAS analysis in soils and waters
EnviroMail 152 Australia – Analysing Air & Gas with Canisters

From: Zoe Smith <Zoe.Smith@senversa.com.au>
Sent: Wednesday, November 20, 2024 2:31 PM
To: ALSEnviro Sydney <ALSEnviro.Sydney@ALSGlobal.com>; Andrew Wotherspoon <andrew.wotherspoon@ALSGlobal.com>
Cc: Lucas Dzalakowski <Lucas.Dzalakowski@senversa.com.au>
Subject: [EXTERNAL] - RE: 22013 - SRN and requested analysis

CAUTION: This email originated from outside of ALS. Do not click links or open attachments unless you recognize the sender and are sure content is relevant to you.

Hi Andrew,

I am following up on the email below. We have not received an SRN for this workorder. Can you please assist in following up the request below.

Many thanks,
Zoe

Zoe Smith (she/her)
Senior Associate Environmental Scientist
M: +61 488 211 265
www.senversa.com.au
Level 24, 1 Market St,
Djubuguli, Eora Country
Sydney, NSW, 2000, Australia

From: Zoe Smith
Sent: Monday, 18 November 2024 6:38 PM
To: ALSEnviro Sydney <ALSEnviro.Sydney@ALSGlobal.com>
Cc: Lucas Dzalakowski <Lucas.Dzalakowski@senversa.com.au>
Subject: 22013 - SRN and requested analysis

Good evening,

I understand that Lucas sent a batch samples for project S22013 Mars Road to the lab last week, we are yet to receive an SRN for this WO. These samples were placed on hold, however, can you please undertake the following analysis on standard TAT on these samples.

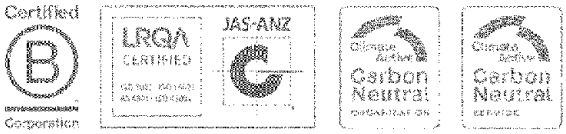
Sample Name	Lab Report	Date Time	PFAS Shot Suite	S-26	HOLD
QC201	Unconfirmed	13/11/2024 0:00	X	X	
QC202	Unconfirmed	14/11/2024 0:00			X
QC203	Unconfirmed	14/11/2024 0:00		X	
QC204	Unconfirmed	14/11/2024 0:00			X
QC205	Unconfirmed	15/11/2024 0:00		X	

Many thanks,
Zoe

Zoe Smith (she/her)
Senior Associate Environmental Scientist
M: +61 488 211 265
E: Zoe.Smith@senversa.com.au
www.senversa.com.au
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Senversa acknowledges the traditional custodians of the lands and waters upon which we conduct our work, and pay our respect to the Elders, past, present and those to come


Certified
B
Corporation
LRQA
CERTIFIED
JAS-ANZ
Climate Active
Carbon Neutral
Climate Active
Carbon Neutral

Appendix J: Waste Disposal Dockets

WASTE DATA FORM

New South Wales

BEFORE COMPLETING AND SIGNING THIS FORM

READ THE NEXT PAGE OF THIS FORM FOR IMPORTANT INFORMATION ON HOW TO FILL IN THIS FORM AND FOR INFORMATION ABOUT OBLIGATIONS AND OFFENCES

CLEANAWAY

Dangerous Goods

Complete this part if waste is a dangerous good.

Proper Shipping Name

Dangerous Goods Class | Subsidiary Risk/s (if any) | UN Number | Packing Group

Type of Packaging 200L | Number of Packages 2 | Aggregate Net Quantity

Load Identification

Consignment Authorisation Number 307999-7-J120-6091-2025 | Load Number 20391342

This consignment authorisation is valid From: 01/01/2025 To: 31/12/2025 (DD/MM/YYYY)

Waste Consignor (Activity)

Licensed [ ] | Non-Licensed [X] | License No

Company Name Epoca Environmental Pty Ltd

Address 7/9 Severn St
ST MARYS NSW 2760

Address of Waste Source (if not the same as company address) 12 - Mars Rd
LANE COVE

Contact Phone 0433 100 642

*Name of Consignor (print) Evelyn Melais *Signature of Consignor *Date 06/01/25

Waste Description

List Contaminants

Waste Name J120 L WASTE OIL WATER, HYDROC, Waste oil/water, hydrocarbons/water mixtures or emulsions

Waste Origin Code (ANZSIC) | Waste Code J120 | Amount of Waste 410.000 | tonnes [ ] | kilograms [ ]

Physical Nature of waste (solid, liquid, sludge, etc) liquid | litres [X]

Waste Type (hazardous, industrial, group A) Oil/water, hydrocarbons/water TPI Waste Category

Proposed treatment at destination (landfill, incineration, immobilisation, storage, treatment, etc)

Date of Waste Movements

Date of Dispatch 07/01/25 | Expected Date of delivery to destination 07/01/25

Transporter

Licensed [X] | Non-licensed [ ] | License No 20356

Company Name Epoca Environmental Pty Ltd

Address PO Box 3022
BLAXLAND EAST NSW 2774

RTA Registration No. of Vehicle YJH 31U

Type of Transport (Road, Rail, Rail & Road) Road

Contact Phone 02 4739 2465

*Name of Driver (print) Ben Donovan *Signature of Driver *Date: 7-1-25

Waste Consignee (Destination)

Company Name Cleanaway Operations Pty Ltd

Destination 8 Rayben St
GLENDENNING NSW 2761

License No.: 6091

*Quantity Received 400L

*Treatment given to waste at destination:

*Date Received: 7/1/25

Contact Phone 02 9839 1522

*Name of Representative (print) NAM MAHER *Signature of Representative

EMERGENCY CONTACT (24 HOURS)

Name: Daniel Fox

PH: 02 9150 7998 1300 376 220 M: 0433 100 642

Blacktown Waste Services Pty Ltd
PO Box 262 RIVERSTONE NSW 2765
Ph. 02 9835 4544
Fax 02 02 9835 3446
ABN 21 102 860 944

5118205

Date In: 6/01/2025 6:59:00AM
Date Out: 6/01/2025 7:17:00AM
Operator: MARGARET
REGO: YJH31U
Client: EPOCA ENVIRONMENTAL PTY LTD
Job No: EPO001
PO No:
Direction: IN
Destinaton: CELL3
Source: A = WESTERN SYDNEY

Waste Type

GEN SOLID WASTE - 2

Gross WT:	4.72 t
Tare WT:	3.96 t
Net WT:	**0.76 t**

Driver's Signature:

Our recycled products meet the conditions of the relevant NSW EPA Resource Recovery orders issued under the POEO (Waste) Regulation. Please see www.epa.nsw.gov.au for further information about the use of recycled products.

Senversa Pty Ltd

ABN 89 132 231 380
www.senversa.com.au
enquiries@senversa.com.au
LinkedIn: Senversa
Facebook: Senversa

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